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**THE IMPACT OF TRAUMATIC AND ORGANIZATIONAL
STRESSORS ON NEW ZEALAND POLICE RECRUITS:
A LONGITUDINAL INVESTIGATION OF PSYCHOLOGICAL
HEALTH AND POSTTRAUMATIC GROWTH OUTCOMES**

A thesis presented in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Psychology
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Dedicated to Dad with love
He lived to see this thesis started
but not completed

ABSTRACT

Police officers face exposure to traumatic events due to the inherent nature of their profession. As well, as with the employees of any large organization, they are subjected to daily organizational events within their workplace (resource concerns, interactions with co-workers, administrative hassles). Very little is known as to the extent to which these organizational events moderate the development of traumatic stress outcomes. Investigations of police well-being have almost inevitably focused on negative work events and their pathogenic consequences. However, this study seeks to widen this pathogenic orientation by also considering the impact of positive daily work events (uplifts), and by evaluating a possible salutogenic outcome; the development of posttraumatic growth.

A longitudinal methodology was utilized to establish baseline measures of traumatic event exposure (the TSS) and psychological well-being (the IES and the HSCL-21). All the 673 recruits who entered police college over one year were invited to participate in the study, and the 512 who completed the first questionnaire were reassessed one year later. The second questionnaire contained measures to assess the impact of the organizational environment (Uplifts and Hassles Scales), police traumatic events (a modified TSS), and posttraumatic growth outcomes (the PTGI).

Parametric analyses and hierarchical multiple regression were used to evaluate the study hypotheses and post-hoc analyses investigated moderating effects. The recruits entered the police with high levels of prior traumatic event exposure, which, during the following year substantially increased. Psychological health remained in a robust condition, and psychological distress did not increase, although officers who experienced on-duty and multiple traumatic events had significantly higher traumatic stress than those who did not. Other important findings were that the organizational environment contributed to psychological distress outcomes, and post-hoc analyses indicated that this had an important interrelationship with traumatic stress outcomes as well. Organizational uplifts had a salutogenic effect upon physical health, and aided the development of posttraumatic growth following traumatic exposure. This study has supported the development of a synthesized research orientation that combines salutogenic as well as pathogenic research methodologies.

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Chapter One

INTRODUCTION	1
OUTLINE OF THE PRESENT RESEARCH	3

Chapter Two

TRAUMATIC EVENTS AND TRAUMATIC STRESS	4
INTRODUCTION AND OVERVIEW	4
TRAUMATIC EVENTS	5
IS POLICING STRESSFUL?	5
TRAUMATIC EVENT EXPOSURE RATES	7
DEFINITION AND EXAMPLES OF TRAUMATIC EVENTS	8
TRAUMATIC EVENTS IN THE NEW ZEALAND POLICE	10
MULTIPLE TRAUMATIC EVENTS	11
TRAUMATIC STRESS	12
DEFINITION OF TRAUMATIC STRESS	12
PSYCHOLOGICAL CONSEQUENCES OF TRAUMATIC EVENT EXPOSURE	13
POSTTRAUMATIC STRESS DISORDER (PTSD)	14
<i>The prevalence of PTSD</i>	<i>17</i>
JOB PERFORMANCE CONSEQUENCES	18
PHYSICAL HEALTH CONSEQUENCES	20
MODERATING FACTORS FOR TRAUMATIC STRESS	21

Chapter Three

ORGANIZATIONAL STRESSORS 23

 INTRODUCTION AND OVERVIEW..... 23

POLICE ORGANIZATIONAL STRESSORS 24

 AMERICAN STUDIES OF ORGANIZATIONAL STRESSORS 25

 BRITISH STUDIES OF ORGANIZATIONAL STRESSORS..... 27

 AUSTRALIAN STUDIES OF ORGANIZATIONAL STRESSORS 29

 NEW ZEALAND POLICE ORGANIZATIONAL STRESSORS 31

MODELS OF ORGANIZATIONAL STRESSORS..... 33

**RATIONALE FOR THE THEORETICAL APPROACH
UTILIZED IN THIS STUDY**..... 36

THE MODERATING EFFECT OF ORGANIZATIONAL STRESSORS..... 37

Chapter Four

ORGANIZATIONAL UPLIFTS..... 40

 INTRODUCTION AND OVERVIEW..... 40

ORGANIZATIONAL UPLIFTS 41

THE MODERATING EFFECT OF ORGANIZATIONAL UPLIFTS 43

 THE IMPORTANCE OF UPLIFTS REGARDING PRE- AND POST-TRAUMA SUPPORT..... 44

Chapter Five

POSTTRAUMATIC GROWTH..... 48

INTRODUCTION AND OVERVIEW.....48

POSITIVE CONSEQUENCES OF TRAUMATIC EVENT EXPOSURE..... 49

POSTTRAUMATIC GROWTH..... 55

THEORETICAL MODELS TO EXPLAIN POSTTRAUMATIC GROWTH.....56

POSITIVE CONSEQUENCES FOLLOWING TRAUMATIC EVENTS EXPOSURE50

POSTTRAUMATIC GROWTH IN THE POLICE.....58

Chapter Six

HYPOTHESES AND RESEARCH PREDICTIONS..... 60

THE HYPOTHESES AND RESEARCH PREDICTIONS..... 60

GENDER EFFECTS IN THE POLICE64

Chapter Seven

METHOD..... 67

 OVERVIEW..... 67

 RESEARCH DESIGN..... 67

 LONGITUDINAL DESIGN RATIONALE 68

 PARTICIPANTS 70

Demographic profile of the total cohort..... 70

THE QUESTIONNAIRES..... 70

 PILOT TESTING 71

 THE RECRUIT QUESTIONNAIRE 71

 THE OFFICER QUESTIONNAIRE..... 72

 ETHICAL CONCERNS 73

PROCEDURE..... 73

 PHASE ONE OF THE STUDY (DISTRIBUTION OF THE RECRUIT QUESTIONNAIRE)..... 75

 PHASE TWO OF THE STUDY (DISTRIBUTION OF THE OFFICER QUESTIONNAIRE) 77

THE MEASURES 81

 MEASUREMENT OF TRAUMATIC EVENT EXPOSURE..... 81

 MEASUREMENT OF PHYSICAL HEALTH 84

 MEASUREMENT OF POSITIVE AND NEGATIVE MOOD 84

 THE MEASUREMENT OF TRAUMATIC STRESS 85

 MEASUREMENT OF PSYCHOLOGICAL DISTRESS SYMPTOMS 87

 MEASUREMENT OF POSTTRAUMATIC GROWTH 89

 MEASUREMENT OF POLICE ORGANIZATIONAL EVENTS..... 90

Chapter Eight

RESULTS..... 94

 OVERVIEW..... 94

PART ONE SUMMARY OF DESCRIPTIVE STATISTICS..... 95

 NAMES OF THE STUDY MEASURES AND RESEARCH VARIABLES..... 95

 DEMOGRAPHIC PROFILES OF THE POLICE SAMPLES 97

 SUMMARY OF THE STUDY MEASURES..... 99

PART TWO TRAUMATIC EVENTS RESULTS..... 101

 PRIOR TRAUMATIC EVENTS 101

Responses to the Recruit Questionnaire worst experience question..... 103

Prior traumatic events and gender..... 103

 RELATIONSHIPS BETWEEN PRIOR TRAUMATIC EVENTS AND THE TIME 1 VARIABLES 104

Prior traumatic events and the Time 1 IES..... 104

Prior traumatic events and the other Time 1 variables..... 105

 POLICE TRAUMATIC EVENTS 105

Responses to the TSS T2 worst experience item..... 106

Police traumatic events and gender..... 108

 RELATIONSHIPS BETWEEN POLICE TRAUMATIC EVENTS AND TIME 2 VARIABLES 108

Police traumatic events and the Time 2 IES..... 108

Police traumatic events and the other Time 2 variables..... 110

PART THREE RESULTS OF THE OTHER STUDY MEASURES 112

 SELF-RATED HEALTH (PHYSICAL HEALTH OUTCOMES) 112

 IMPACT OF EVENT SCALE (TRAUMATIC STRESS OUTCOMES) 114

 HSCL-21 (PSYCHOLOGICAL DISTRESS OUTCOMES)..... 115

 PANAS (POSITIVE AND NEGATIVE MOOD OUTCOMES) 116

 THE HASSLES SCALE 119

Hassles Scale other responses..... 119

<i>Hassles individual items</i>	120
<i>Hassles factors</i>	120
THE UPLIFTS SCALE	123
<i>Uplifts Scale other responses</i>	123
<i>Uplifts individual items</i>	124
<i>Uplifts factors</i>	124
THE POSTTRAUMATIC GROWTH INVENTORY	126
<i>PTGI factors</i>	126

PART FOUR MULTIPLE REGRESSION ANALYSES AND HYPOTHESES

TESTING	127
DATA SCREENING AND TRANSFORMATIONS FOR REGRESSION ANALYSES	127
<i>Dependent and independent variables</i>	128
<i>Control variables</i>	129
<i>Multicollinearity</i>	130
<i>Moderating variables</i>	131
<i>Transformations</i>	131
HIERARCHICAL MULTIPLE REGRESSION	133
REGRESSION ONE: REGRESSION OF IES T2	133
REGRESSION TWO: REGRESSION OF HSCL-21 T2	137
REGRESSION THREE: REGRESSION OF HEALTH T2	141
REGRESSION FOUR: REGRESSION OF PTGI	145
MODERATING EFFECTS ON POSTTRAUMATIC GROWTH	147
SUMMARY OF HYPOTHESES RESULTS	152
SUMMARY OF THE HYPOTHESES BY DEPENDENT VARIABLES OUTCOMES	154
SUMMARY OF MODERATING EFFECTS	155

Chapter Nine

DISCUSSION 156

 OVERVIEW..... 156

RESULTS OF HYPOTHESES TESTING..... 157

 TRAUMATIC STRESS OUTCOMES 157

 PSYCHOLOGICAL DISTRESS OUTCOMES 161

 PHYSICAL HEALTH OUTCOMES 163

 POSTTRAUMATIC GROWTH OUTCOMES 164

THE STUDY RESULTS IN RELATION TO MODELS OF ORGANIZATIONAL STRESSORS.....167

STUDY RESULTS FOR TRAUMATIC EVENTS 168

 TRAUMATIC EVENTS PRIOR TO JOINING THE POLICE (TSS T1) 168

Worst prior traumatic event..... 169

Prior traumatic events and health effects..... 170

 POLICE TRAUMATIC EVENTS (TSS T2) 172

Relationships between police traumatic events and the study measures..... 173

On-duty and off-duty traumatic events..... 174

Police multiple traumatic events..... 175

Police worst traumatic events 176

STUDY RESULTS FOR THE OTHER MEASURES

 HEALTH..... 177

Relationships between health and the other study measures..... 178

 TRAUMATIC STRESS SYMPTOMS 178

Relationships between traumatic stress symptoms and the study measures..... 179

Summary of traumatic stress outcomes..... 179

 PSYCHOLOGICAL DISTRESS SYMPTOMS 180

Relationships between psychological distress symptoms and the study measures..... 181

 POSITIVE AND NEGATIVE MOOD 182

 ORGANIZATIONAL STRESSORS 184

Australian Police and Education Sector norms for the Hassles Scale..... 185

TABLE OF CONTENTS

<i>Relationships between organizational stressors and the study measures</i>	186
ORGANIZATIONAL UPLIFTS.....	187
<i>Australian Police and Education Sector norms for the Uplifts Scale</i>	188
<i>Relationships between organizational uplifts and the study measures</i>	188
POSTTRAUMATIC GROWTH.....	189
THE STUDY MEASURES AND GENDER.....	190
ISSUES RELATED TO THE STUDY: MEASUREMENT, GENERALIZABILITY, AND INTERNAL VALIDITY.....	192
THE MEASUREMENT OF TRAUMATIC EVENTS.....	192
THE MEASUREMENT OF TRAUMATIC STRESS.....	194
GENERALIZABILITY.....	195
INTERNAL VALIDITY.....	197
LIMITATIONS TO THIS STUDY.....	198
UNMEASURED VARIABLES.....	199
ISSUES FOR FUTURE RESEARCH.....	201
IMPLICATIONS FOR THE POLICE ORGANIZATION FROM THE STUDY OUTCOMES.....	202
TRAUMATIC EVENT EXPOSURE.....	202
ORGANIZATIONAL STRESSORS.....	204
ORGANIZATIONAL UPLIFTS.....	206
POSTTRAUMATIC GROWTH.....	207
GENDER OUTCOMES.....	208
CONCLUSION.....	210
REFERENCES.....	213
APPENDICES.....	240

APPENDICES

APPENDIX A: Recruit Questionnaire

APPENDIX B: Recruit Questionnaire Information Sheet

APPENDIX C: Officer Questionnaire

APPENDIX D: Officer Questionnaire Information Sheet

APPENDIX E: Recruit Questionnaire Reminder Letter

APPENDIX F: Officer Questionnaire Introductory Letter 1

APPENDIX G: Officer Questionnaire Reminder Letter

APPENDIX H: Officer Questionnaire Fax

APPENDIX I: Officer Questionnaire Introductory Letter 2

APPENDIX J: Summary of the Study Results for the Recruits

APPENDIX K: Report of the Study Results for the Police Organization

APPENDIX L: Police Daily Hassles and Uplifts Scales Factors and Items

APPENDIX M: Australian Norms for the Police Daily Hassles and Uplifts Scales

APPENDIX N: Time 1 Recruit Questionnaire Results for all the Recruits

TABLES
Chapter Two*Table 2.1*

Diagnostic Criteria For PTSD: <i>DSM-IV</i> (1994).....	16
---	----

Chapter Seven*Table 7.1*

Recruit Questionnaires Returned at Each Distribution.....	76
---	----

Table 7.2

Officer Questionnaires Returned at Each Distribution	80
--	----

Chapter Eight*Table 8.1*

Study Measures and Research Variables at Time 1 and Time 2.....	96
---	----

Table 8.2

Demographic Profiles of Group One ($N = 512$) and Group Two ($N = 314$)	98
---	----

Table 8.3

Study Measure Summary.....	100
----------------------------	-----

Table 8.4

Recruits ($N = 312$) Prior Exposure to Traumatic Events (TSS T1).....	102
---	-----

Table 8.5

Responses to: what is the worst thing that has ever happened to you?	103
--	-----

Table 8.6

Significant Gender Differences for Individual TSS T1 Traumatic Events	104
---	-----

Table 8.7

Recruits' Police Traumatic Events, Data from the Individual TSS T2 Variables .	106
--	-----

Table 8.8
Analyses of Group Differences on the IES T2 for Group One (those who had experienced Assault) and for Group Two (those who had not)..... 109

Table 8.9
Pearsons *r* tests between TSS T2 and HSCL-21 T2, PANAS NA T2, and PTGI 110

Table 8.10
Pearsons *r* Tests between TSS T2 and PTGI Factors and Total..... 111

Table 8.11
Dependent *t* tests and *Sign* tests (*z* scores) for the Total (*N* = 308), Males (*N* = 224) and Females (*N* = 84) between Health T1 and Health T2. Mean Physical Health Scores Reported at Time 1 and Time 2 113

Table 8.12
Dependent *t* tests and *Sign* tests (*z* scores) of Mean Differences Between Time 1 and Time 2 HSCL-21 Total and Subscale Scores: Somatic Distress (SD); and Performance Difficulty (PD) 116

Table 8.13
Dependent *t* tests and *Sign* tests (*z* scores) of Mean Differences Between Time 1 and Time 2 PANAS PA and PANAS NA Scores 118

Table 8.14
The Hassles Factors: Means, Number of Items, Possible Range, Scaled Means, and Number of Respondents..... 121

Table 8.15
Pearsons *r* Tests between the Hassles Total and Factors and the Study Measures: Health T2, IES T2, HSCL-21 T2, and PTGI..... 122

Table 8.16
The Uplifts Factors: Means, Scaled Means, Number of Items, Possible Range, and Number of Respondents..... 124

Table 8.17
Pearsons *r* Tests Between the Uplifts Total and Factors and the Study Variables: Health T2, IES T2, HSCL-21 T2, and PTGI..... 125

Table 8.18
 Pearsons *r* Tests between Traumatic Events Variables and the Study Variables: IES
 T1, HSCL-21 T1, and Health T1 130

Table 8.19
 Pearsons *r* Tests Between the Independent Variables 130

Table 8.20
 Transformations of the Multiple Regression Variables..... 132

Table 8.21
 Hierarchical Multiple Regression of IES T2 Scores 135

Table 8.22
 Hierarchical Multiple Regression of HSCL-21 T2 Scores..... 139

Table 8.23
 Hierarchical Multiple Regression of Health T2 Scores..... 143

Table 8.24
 Hierarchical Multiple Regression of PTGI Scores 146

Table 8.25
 Moderating Effect of High and Low Uplifts Scores on the Relationship between
 Posttraumatic Growth Factor Scores and Traumatic Events 148

Table 8.26
 Moderating Effect of High and Low Uplifts Scores on the Relationship between
 Posttraumatic Growth Factor Scores and Traumatic Events..... 149

FIGURES***Chapter Seven****Figure 7.1.*

Schedule of Assessment. 74

Figure 7.2.

Questionnaires Returned at Each Distribution. 78

Chapter Eight*Figure 8.1.*

Moderating Effect of Uplifts on the Relationship between Traumatic Events and Posttraumatic Growth. 148

Figure 8.2.

Moderating Effect of Uplifts on the Relationship between Traumatic Events and New Possibilities. 150

Figure 8.3.

Moderating Effect of Uplifts on the Relationship between Traumatic Events and Relating to Others. 151

Figure 8.4.

Moderating Effect of Uplifts on the Relationship between Traumatic Events and Appreciation of Life. 152

Chapter One

INTRODUCTION

Police officers face the occupational hazard of repeated exposure to traumatic events and as well, are subjected to routine organizational stressors of their workplace. These two major sources of stressors have been variously described as: job content (traumatic events) versus job context (organizational stressors) stressors (Evans & Coman, 1993); the inherent nature of police work versus the nature of the Police Organization (Martelli, Waters, & Martelli, 1989; Spielberger, Westberry, Grier, & Greenfield, 1981); and event versus organizational stressors (Paton & Smith, 1996; Sewell 1993). Organizational stressors include specific items such as the work environment itself, administrative pressures to solve the crime, and conflicts within role and responsibility. Event stressors include experiencing personal loss or injury, the impact of mission failure, or human error (Sewell, 1993). Police officers also face exposure to traumatic events as an occupational hazard of their profession, and for some officers the consequences may be long-term psychological difficulties (Rachman, 1980; Raphael, 1986). Given time, however, most people emerge from traumatic situations relatively unscathed, and it is now being recognized that some may even experience positive outcomes (Tedeschi & Calhoun, 1996).

It has been argued (Territo & Vetter, 1981) that police officers are subject to more stress because of the nature of their job and because they witness situations involving violent death and mutilations. Others argue that these traumatic events are rare and that officers suffer from higher levels of the same kind of routine stressors experienced by other workers (Anson & Bloom, 1988; Malloy & Mays, 1984). In this case the problem would be internal to the Police Organization and given enough resources and management

commitment it would be possible to eliminate many of the negative stressors (Brown & Campbell, 1984). It is important to identify actual and potential stressors, such as those indicated by stressor inventories, and to also assess the effects that these experiences have upon police officers' psychological and physical well-being. It is necessary to understand the factors that are responsible for high levels of stress to justify the time and expense of undertaking appropriate remedial measures.

Although police work is generally believed to be inherently stressful, very little is actually known about the extent to which this impacts upon the police officers' psychological well-being (Hart, Wearing, & Headey, 1995). Research in the fields of disaster and rescue work has raised awareness that the 'helper' in some situations may actually become the other 'unrecognized victim' (Raphael, 1986). The New Zealand Police Organization is regarding issues of stress and traumatic stress with increasing concern. A study of New Zealand police disengagements from 1985 to 1997 (Disengagement Summit, 1998), found that 73% of officers cited psychological reasons for their disengagements; of these 21% had been diagnosed by health professionals as meeting the criteria for posttraumatic stress disorder (PTSD). For a diagnosis of PTSD to be made, according to the criteria of the *Diagnostic and Statistical Manual of Mental Disorders DSM-IV* (1994) (American Psychiatric Association, 1994) an officer must have been exposed to a traumatic event. By definition this is an event that involved actual or threatened death or injury, or a threat to the integrity of the person or others, to which the person responded with intense fear, helplessness, or horror.

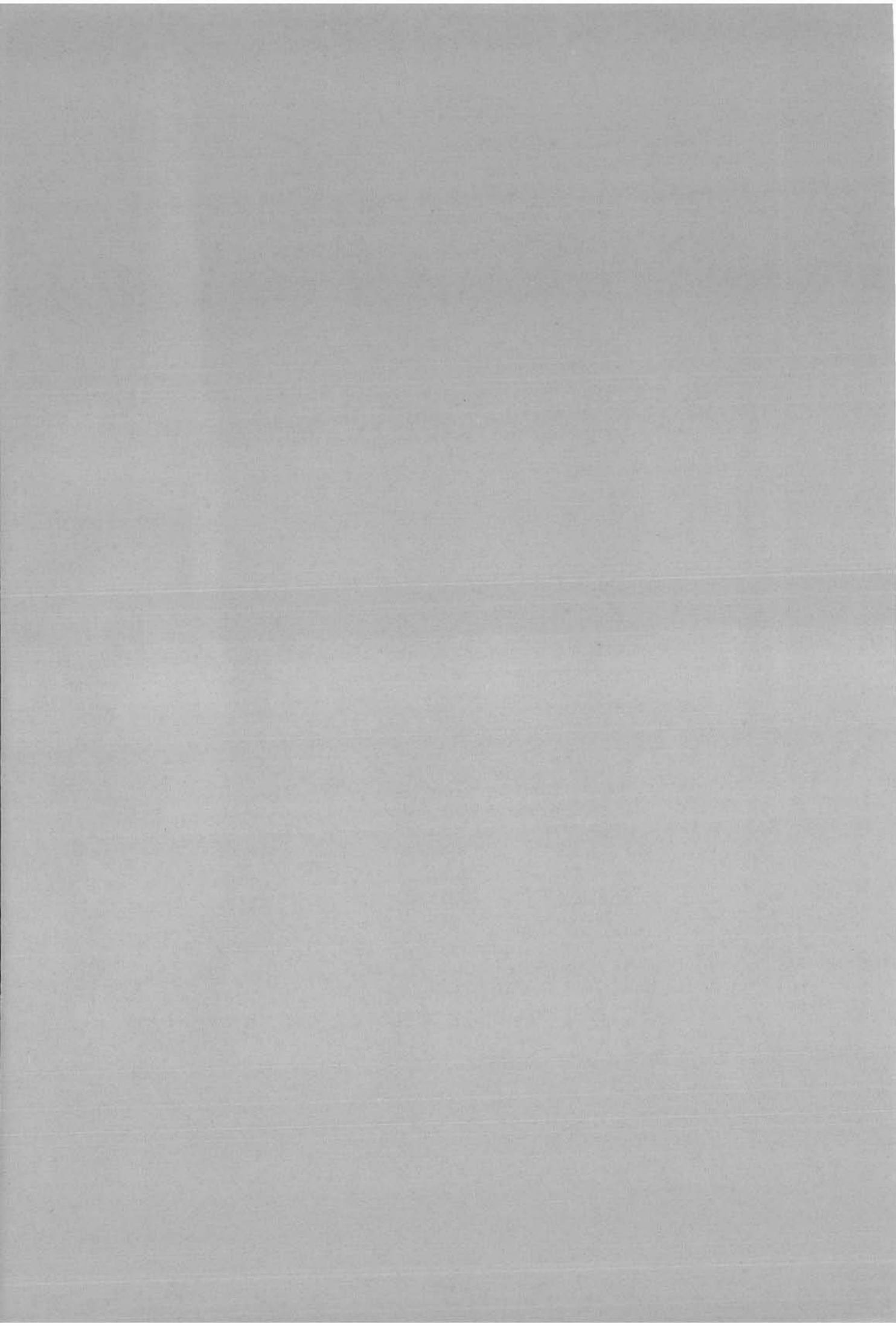
Recent literature has highlighted the extent to which police organizations themselves can be beneficial or detrimental to their officers' well-being. A growing body of evidence now suggests that it is the organizational context in which the police officers work, rather than the operational content of the work itself, that is most important in determining well-being (Brown & Campbell, 1990; Greller, Parsons, & Mitchell, 1992; Hart et al., 1995; Reiser, 1974). Both traumatic and organizational stressors may impact upon the officers' physical and psychological health. At the personal level there may be indirect costs to personnel in terms of the quality of relationships at home and at work (Paton, 1994a). There may be detrimental outcomes for the police organization in terms of staff morale, absenteeism, sick leave, and disengagements. As well as the loss of the

officers' cumulated experience, the police organization is presented with the costs of recruiting, retraining, and compensating staff.

Outline of the Present Research

This study will first evaluate the prior traumatic event experiences of New Zealand police recruits, and evidence for associated threats to their psychological and physical health. The first assessment will be at time of entry to Police College and this will establish a frame of reference against which the impact of their police work experiences, over a one-year period, can be evaluated. The study will evaluate the impact of both police traumatic and organizational stressors, and examine the evidence for beneficial, as well as detrimental, affects to well-being.

Chapter Two will concern the definition and impact of traumatic events, and the outcome and affects of traumatic stress. Chapter Three will describe organizational stressors and stress outcomes. Consideration will be given to the possibility that organizational stressors may have a more detrimental impact upon officers' psychological health than occupational stressors. Chapter Four will examine the impact of positive daily work experiences. With this study it is expected that both negative (organizational stressors) and positive (organizational uplifts) daily work experiences will moderate the effects of traumatic events upon the recruits' psychological and physical health outcomes. Chapter Five will concern experiences of posttraumatic growth that may arise as officers deal with the aftermath of traumatic event experiences. The hypotheses, research predictions, and aims of this study will be described in Chapter Six.



Chapter Two

TRAUMATIC EVENTS AND TRAUMATIC STRESS

Introduction and Overview

Not only do police officers have to deal with the routine stressors that typify many large organizations, but also they have to deal with highly traumatic or emotionally overwhelming events that may arise any time during the course of their professional duties. Previous research on police stress has tended to focus on one dimension of the stress process, the traumatic event. However, the actual traumatic stress that arises as a result of traumatic event exposure is a different element (Violanti & Marshall, 1983) which also needs to be taken into account, for evidence suggests that police officers are not immune to dysfunctional, or in some cases pathological, reactions arising from such experiences.

This chapter begins with a discussion of the stressful nature of police work, debating the question: is police work more stressful than other occupations? Traumatic events are defined and discussed in relation to police work. The effects of multiple traumatic event exposure are considered and the traumatic experiences of New Zealand police officers are described. The chapter then turns to traumatic stress reactions, for these may arise as a result of traumatic event exposure. Criteria for a diagnosis of posttraumatic stress disorder (PTSD) are presented and the prevalence of PTSD within both police and civilian populations is discussed. Traumatic experiences may have psychological and physical health effects for police recruits, while the police organization may suffer various consequences such as reduced job performance, increased absenteeism, and costs related to staff turnover. The chapter concludes with a discussion of moderating factors that may affect the severity of traumatic reactions.

Traumatic Events

Is Policing Stressful?

Previously it has generally been assumed, within the media, police, and academic professions, to some extent, that police work is inherently stressful, and that police officers suffer from more stress than other organizational groups (Sigler & Wilson, 1988). American research has indicated higher rates of stress-induced illness and suicide among police officers (Cooper, Davidson, & Robinson, 1982; Violanti, Vena, & Marshall, 1986). Sigler and Wilson (1988) reported that police work is by its very nature stressful, as police officers have a great deal of authority and are empowered to use deadly force. Police officers are called on to make critical decisions with little time for deliberation. They also have to cope with public and official pressure to deal effectively with offenders, while at the same time obeying constitutional restraints.

However, studies have questioned the assumption that policing is more stressful than other occupations. Anson and Bloom (1988) found that although policing was stressful, it was no more so than other people-processing occupations in the criminal justice system (e.g., prison guards, or probation officers). They point out, however, that police officers are often called upon to mediate a hostile environment with little help from others, and that few occupations face the same variety of stressors, the possibility of physical danger being only one of many. Sigler and Wilson (1988) compared levels of stress among police to those of teachers. They found that assumptions regarding relatively high levels of police stress appeared to have some support. Police officers reported higher levels of perceived stress on the job, and reported higher levels of stressors in their lives than did teachers. Mallory and Mays (1984) questioned the assumption that policing is more stressful than other occupations, however, they regarded this issue as spurious. They considered it more important to identify and alleviate sources of stress.

Over the past two decades it has been recognized that members of a number of professions, including the police, who assist before or after traumatic events, can themselves become the hidden victims of work-related psychological trauma (Paton, 1989, 1994b; Taylor & Frazer, 1982). The term 'victims', once confined to people who had borne the full brunt of any disasters, was extended to include rescue, recovery, and rehabilitation workers (Taylor & Frazer, 1982). Personnel in critical occupations, such as the emergency and helping professions, could also become psychological victims, displaying the exhaustion, irritability, and fatigue that they looked for in others. Taylor and Frazer (1982) developed a classification that defined those who experienced disasters and other traumatic events, as primary, secondary, or tertiary victims. Members of the police were generally perceived to be tertiary victims, as they attended to the consequences of traumatic events. However, in some instances they could also be primary or secondary victims, for example in armed confrontations, or in individual rescue attempts (Miller, 1991).

Recently, it has been said that of all the high-risk occupations, police work is probably the most "trauma sensitive" (Carlier, 1999, p. 228). Trauma sensitive means that police officers have the greatest risk of experiencing traumatic events at work. This is because police officers are frequently confronted with very *sad*, as well as very *violent* categories of incidents (Carlier, 1999; Carlier & Gersons, 1992). The sad depressing incidents include failures to save lives, confrontations with sexually abused children or adults, and suicides by colleagues. Violent events include shooting incidents, hostage situations, and threatened or actual brutal violence (Carlier, 1999). Other professionals in trauma-sensitive occupations (e.g., firefighters, taxi drivers, bank tellers, or prison workers) tend to have fewer traumatic experiences, and these are usually confined to one, but not both categories of incidents. For example, firefighters almost always experience sad events, such as seeing victims badly burned. Public transport and prison workers are confronted with both types of incidents, but far less frequently than police officers. Carlier points out that the term 'trauma sensitive' carries no implications of extreme psychopathology or instability, it simply means there is a greater risk of experiencing traumatic events at work (Carlier, 1999).

Policing has been described as a 'critical occupation' (Paton, 1996a) and along with other professionals, including fire fighters and emergency medical service workers, police officers are likely to be exposed to highly traumatic or emotionally demanding events in the course of performing their duties. Traumatic events that may adversely affect officers include shootings, witnessing death and mutilation, attending to disasters, and dealing with abused or injured children (Violanti, 1996b, 1999a; Violanti & Aron, 1994). Reactions to such events can place those exposed, even at the secondary level of helper (Taylor & Frazer, 1982; Raphael, 1986), to significant levels of distress and posttraumatic life disruption. Officers may experience the prolonged reaction of PTSD, or symptoms of increased psychological arousal including intrusive thoughts and images, highly distressing emotions, negative changes in behaviour, and a variety of physical complaints (Tedeschi & Calhoun, 1995). These issues will be explored later in this chapter.

Traumatic Event Exposure Rates

Studies of young adults in the general population have reported various proportions of exposure to traumatic events ranging from 39% to 84% (Breslau, Davis, Andreski, & Peterson, 1991; Norris, 1992; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993; Vrana & Lauterbach, 1994). Breslau et al. (1991) found that 39.1% of a sample of 1007 young adults aged 21 to 30 years from a large health maintenance organization in Detroit, USA had experienced at least one traumatic event. Norris (1992) found that 66.9% of her younger (i.e., not middle-aged or older) respondents had prior experience of a traumatic event. A study by Resnick et al. (1993) reported that 43% of adolescents in a working class community in the north-eastern United States had experienced at least one lifetime *DSM-III-R* (1987) trauma by age 18 years, a rate approximated by Breslau et al. (1991). Vrana and Lauterbach (1994) assessed a sample of American college students and found that 84% of their respondents reported exposure to a traumatic event.

These studies are American and differences in, for example, prevailing levels of crime and natural disasters, suggest caution in drawing a direct comparison between these studies and New Zealand populations (Huddleston, Stephens, Paton, Miller, & Black,

1998). However, evidence of norm levels for police recruits' traumatic exposure rates is sparse. One study has looked at New Zealand police recruits prior traumatic exposure; and this reported high rates. Buchanan, Stephens, and Long's (2001) study of 187 New Zealand police recruits found that 70% of recruits reported prior exposure to traumatic events. American studies on the prevalence of traumatic events and the New Zealand police recruit study, have, in many instances, reported high rates of prior exposure to traumatic events for young adults, particularly so for the New Zealand police recruits. This is of concern, as the recruits face the likelihood of possibly repetitive exposure to emotionally demanding and traumatic events. A prior history of traumatic exposure may increase vulnerability to detrimental reactions following subsequent traumatic exposure. Consequently, it is essential to determine the nature of prior traumatic event exposure and the effects this may have had on the recruits' well-being at point of entry. Prior exposure may have no effects on the recruits' well-being, or it may make them vulnerable to traumatic stress reactions.

Definition and Examples of Traumatic Events

Defining traumatic events is difficult, as people differ in their perception of an event. What for one person may be perceived as highly threatening, for another may be seen as merely challenging (Paton & Smith, 1996). Various synonyms for the term 'traumatic event' are used throughout the literature with traumatic incident, traumatic stressor, and critical incident (for a particularly stressful traumatic event) all in common use (Paton, 1996a). As a starting point regarding the definition of the term, a traumatic event is a pre-requisite for the diagnosis of PTSD by the *DSM-IV* (1994) criteria. By this criteria, a traumatic event is one in which the person has experienced, witnessed, or been confronted with, an event or events that involve actual or threatened death or serious injury, or a threat to the integrity of oneself or others, resulting in a response of intense fear, helplessness, or horror (American Psychiatric Association, 1994).

Carlier and Gersons (1992) have defined traumatic events, or 'incidents' as they call them, as threatening, deeply depressing situations, which generally fall beyond the realm of normal human experience and police activity. Carlier, Lamberts, and Gersons (1997) provided examples of police traumatic events, which included: shooting incidents,

hostage taking, escalating riot situations, confrontations with seriously injured victims or corpses, disaster rescue work, confronting deaths (particularly of young children), and the personal threat of death or injury. Police officers are concerned with the detection of crime and the apprehension of suspects and are obliged to deal with members of the public who may hold them in low esteem, or be overtly hostile. At times the officers are exposed to real physical danger. They are expected to mediate in conflict, deal with the victims of crime and the casualties of road traffic crashes, and break bad news to bereaved relatives (Doctor, Curtis, & Isaacs, 1994). Police work is one of few occupations where employees are expected to put their life on the line, and where they may face physical danger at any time (Kroes, Margolis, & Hurrell, 1974; Paton & Violanti, 1999; Violanti, 1999a).

Incidents that are outside the range of normal activity appear to affect officers most adversely. These may include shootings, witnessing death and mutilation, attending to disasters, and dealing with abused or maltreated children (Violanti, 1996b). An American study of 103 police officers found that the highest ranked traumatic events were: having killed someone in the line of duty; having a fellow officer killed; being physically attacked; dealing with a battered child; and being involved in high-speed chases (Violanti & Aron, 1995). Gersons (1989) investigated the patterns of PTSD among police officers, and found that 46% of 37 officers involved in shooting incidents fulfilled the *DSM-III* (1980) criteria for PTSD. Only three officers showed no PTSD symptoms at all. A British study of police operational front-line duties found that the most stressful duties were dealing with sudden deaths, violent offenders, and the victims of violence (Brown & Campbell, 1990). Events so violent and dehumanizing that they exceed the expectations of even the most well-prepared and experienced police officer include crimes such as serial, spree, or mass murder (Sewell, 1993). According to Williams (1993) traumatic experiences that increase the likelihood of traumatic reactions include the death of a co-worker, multiple deaths, mass destruction, and deaths of children; being called to the scene of a battered or dead child ranked as extremely stressful.

Traumatic Events in the New Zealand Police

New Zealand police face the occupational risk of exposure to threatening, dangerous, and unpleasant situations as part of their job. These range from dealing with natural disasters to deliberate criminal acts (Jamieson, 1992). Large-scale events involving multiple casualties are usually perceived as traumatic. Major New Zealand disasters have included the Tangiwai rail disaster of 1953, the Wahine shipwreck of 1970, and the Mount Erebus plane crash of 1979. These were all major transportation disasters, however, there are many other incidents (such as the Aramoana shootings, the Springbok tour, and the Cave Creek disaster) that have involved the police (Miller, 1991).

The New Zealand Police Trauma Policy, adopted in 1992, specifies a number of potentially traumatic events (New Zealand Police, 1992). Although some of these types of incidents may arise infrequently, (e.g., police officers killed, or involvement in disaster work), their potential for harm was not overlooked. Events categorized as most likely to be traumatic include: the use of deadly force when a member of the police is killed or kills someone; the accidental death of a police officer during an operation; any instance where a member of the public is seriously injured or killed by an officer; injury or threat to life to officers on duty (for example being taken hostage); disaster victim identifications and multiple deaths; and multiple and bizarre homicides, most notably where there are children or aged victims. Other incidents categorized as potentially traumatic include: attending deaths (e.g., suicides, cot deaths, or motor vehicle accidents); failed interventions (e.g., unsuccessful suicide interventions, or domestic incidents); crowd control, particularly following riots or concerts where there are significant elements of risk from hostile or intoxicated members of the public; and lastly, other unpleasant or stressful duties including hostile media responses, or investigations of sexual or physical abuse.

During the period July 1997 to June 1998 (Minister of Police, 1998) the 6,760 sworn officers in the New Zealand Police dealt with: 116 homicides; 192 kidnappings and abductions; 2,440 grievous assaults; 13,625 serious assaults; 2,042 sexual attacks; 3,263 firearms offenses; 5,636 incidents of sudden death; 1,397 drugs offenses (not cannabis); 20,862 domestic disputes; and 38,336 incidents involving vehicle collisions. A total of

1,919 assaults were recorded against police officers, 20 of those involving firearms, six a stabbing or cutting weapon, and a further 42 other weapons. The 17 Armed Offenders Squads (AOS) attended 596 incidents over 1997/98, with Police Negotiation Teams deployed as part of AOS operations on 352 occasions. These figures provide an indication of the range and frequency of the types of traumatic events that police recruits can expect to encounter during their police careers. As Paton and Violanti (1999) have commented, police work rarely involves exposure to isolated traumatic incidents. Police officers can expect to be exposed to numerous traumatic events over the course of their careers.

Multiple Traumatic Events

Studies have indicated that the more traumatic events an individual has experienced, whether these are the same or different type of event, the more likely they are to demonstrate psychological symptoms such as PTSD (Baldwin, 1998; Buchanan et al., 2001; Carlier, 1999; Green et al., 2000; Horowitz, Weine, & Jekel, 1995; Norris, 1992; Stephens, Long, & Flett, 1999; Vrana & Lauterbach, 1994). Green et al. (2000) reported worse outcomes for individuals who had experienced multiple events, than for those who had experienced single or no events. In addition, those who had reported interpersonal traumas (e.g., rape, physical abuse, or physical attack), especially multiple traumas, were more distressed than those who had experienced only non-interpersonal events (e.g., accident or natural disaster). The authors commented that the risk for a psychiatric disorder increased two to three times when women went from experiencing three to experiencing four traumatic events. This suggested that there could be a threshold effect for coping with repeated events.

Buchanan et al. (2001) indicated that the number of traumatic incidents experienced as young adults increased vulnerability to developing PTSD after similar, dissimilar, or successive traumatic incidents. Baldwin (1998) indicated those at risk for developing PTSD from recent single-incident traumas (e.g., a car accident, disaster, or rape) are those who experienced early, severe, and unresolved traumas such as poverty, parental separation, or sexual or physical abuse. Horowitz et al. (1995) studied American adolescent girls and found both the presence and severity of PTSD symptoms to be

positively correlated with the rate of exposure to violent events. A study of New Zealand police officers (Stephens & Miller, 1998) found that the number of different traumatic events experienced correlated with the strength of PTSD symptoms, and repeated experience of the same type of event predicted higher PTSD scores. These studies indicate that repeated exposure to traumatic events is not likely to inoculate police recruits against the distressing and horrifying aspects of police work. Rather, it may predispose them to increased risks of psychological disorder following traumatic event exposure during the course of their police careers (Stephens et al., 1999).

Traumatic Stress

The focus of the chapter will now turn to a consideration of the possible negative consequences of traumatic event exposure. These may vary from mild stress reactions to the persistent and severe constellation of symptoms described for a diagnosis of PTSD.

Definition of Traumatic Stress

In the past, traumatic stress has been conceptualized as the most intense form of stress; the ultimate '*fight or flight*' response. However, this is a misconception (Dunning, 1999; Stuhlmiller & Dunning, 2000). Stress relates to anxiety and the adrenaline response of '*fight or flight*' and results in an *increase* of hypothalamus, pituitary, and adrenal (HPA) function that increases the release of chemicals, such as cortisol, into the bloodstream. Those stressed by the event are soon able to resolve their anxiety and the body returns to homeostasis where cortisol levels subside (Stuhlmiller & Dunning, 2000). Traumatic stress follows a traumatic incident and involves the way the brain's physical structures and chemistry take in information, encode it, store it, and are able to retrieve it as memory. Traumatic stress appears to result in a *reduction* of HPA function, as cortisol, which is released in a great amount, is consumed at a significantly higher rate by glucocorticoid receptors. Traumatic stress is thus characterized by low levels of cortisol (Stuhlmiller & Dunning, 2000). Stress and traumatic stress are not linked on a continuum, but rather are separate consequences that may be engendered from a traumatic experience.

Psychological Consequences of Traumatic Event Exposure

Psychological consequences following traumatic experiences range from mild stress reactions to traumatic stress reactions. Traumatic stress reactions may result in the persistent and severe symptoms of posttraumatic stress disorder. Most people can expect to feel some effects following traumatic event exposure. Common stress reactions (e.g., anxiety, depression, or tension) may be present in mild forms and common reactions to a traumatic event include shock, nightmares, irritability, concentration problems, emotional instability, and physical symptoms (Carlier, 1999). Most police officers exposed to traumatic events have reported subsequent feelings of helplessness, sadness, grief, frustration, anger, and horror (Brunet et al., 2001). Other common reactions are confusion, disorientation, and difficulty concentrating and making decisions. While these reactions are common in mild forms they do not cause too much concern if they are resolved within days or even a few weeks of the precipitating incident (Carlier, 1999).

Traumatic stress reactions, however, can be severe if the traumatic events are especially sudden, overwhelming, and emotionally challenging (Paton, 1996a). Exposure to atypical events can trigger reactions and feelings that are very different and more intense than anything that has been encountered previously (Paton & Stephens, 1996). Such feelings, although normal in the context of a traumatic experience, can be difficult to understand and manage. If such feelings are prolonged, dysfunctional reactions can occur that affect both the individual's well-being, and the organization's performance (Paton, 1996a). In extreme cases some officers may experience persistent, intensive, or even unmanageable stress complaints that can completely dominate their life (Carlier, 1999). These experiences can persist for long periods, or in the case of delayed onset reactions, emerge several months post trauma (Violanti, 1996b).

Severe reactions may be engendered in police officers if traumatic events occur that are beyond the scope of the officers' training and preparation. Violanti (1996b) reported that the camaraderie of the recruit-training environment may paradoxically decrease officers' abilities to cope with traumatic events, as the socialization that occurs during

police training and actual field experience reinforces the officers' beliefs that they are emotionally and physically invulnerable. The social cohesiveness of the recruit unit imparts a feeling of close support during danger, reinforced by teaching the recruits skills in self-defense and weapons training. Unfortunately, the actual experience of encountering a traumatic event may shatter this protective armor, and the officer may be left feeling vulnerable for a long period after (Violanti, 1996b). Being the victim of a traumatic event thus tends to shatter the assumptions that normally govern the person's sense of security, predictability, and well-being (Janoff-Bulman, 1989a; Paton & Stephens, 1996).

Officers who suffer from traumatic stress may experience nightmares, sleep disturbances, flashbacks of the incident, and fear of returning to the scene. Officers may turn to alcohol for help, and if all fails, suicide may be the final way out (Violanti, 1996b). Other consequences of traumatic stress may relate to problems in living. These may include marital and family problems, sexual problems (ranging from impotence to promiscuity), unnecessary risk taking, isolation from friends who are not police officers, callousness, extortion and other criminal behaviour, and unnecessary violence in dealing with citizens (Ellison & Genz, 1983). Gambling may be another associated problem (McCafferty, McCafferty, & McCafferty, 1992).

Posttraumatic Stress Disorder (PTSD)

The term 'posttraumatic stress disorder' (PTSD) was coined by the American Psychiatric Association to describe the range of severe and distressing symptoms that may develop following exposure to a powerfully distressing traumatic incident. Twenty-one symptoms may be included in a diagnosis of PTSD (see Table 2.1) and members of the police and other emergency professions may exhibit some, but not necessarily all, of these symptoms following a traumatic experience. For example, a study of police, rescue, fire, and medical personnel five months after they responded to a building explosion found at least 10% of the respondents endorsed eight of the 21 symptoms. Fourteen percent of these workers in the study reported symptom patterns that matched PTSD criteria (Durham, McCammon, & Allison, 1985). It is estimated that 30% to 40%

of all police officers experience after-effects from traumatic incidents (Solomon & Horn, 1986). PTSD arises when an officer has been exposed to a traumatic event and persistently re-experiences and avoids stimuli associated with that event. In addition, the officer may experience symptoms of increased psychological arousal because of the trauma (Violanti, 1996b). The symptoms can persist for prolonged periods or emerge at some point several months after exposure to the event. The *DSM-IV* (1994) provides the criteria for a diagnosis of PTSD (see Table 2.1) (American Psychiatric Association, 1994).

Table 2.1

Diagnostic Criteria for PTSD: DSM-IV (American Psychiatric Association, 1994)

-
- A. *The person has been exposed to a traumatic event in which both of the following are present:*
1. The person has experienced, witnessed, or been confronted with an event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others.
 2. The person's response involved intense fear, helplessness, or horror.
- B. *The traumatic event is persistently re-experienced in at least one of the following ways:*
1. Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions.
 2. Recurrent distressing dreams of the event.
 3. Acting or feeling as if the event were recurring (including a sense of reliving the experience, illusions, hallucinations and dissociative flashback episodes, including those that can occur upon awakening or when intoxicated).
 4. Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the trauma.
 5. Physiologic reactivity upon exposure to internal or external cues that symbolize or resemble an aspect of the trauma.
- C. *Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by at least three of the following:*
1. Efforts to avoid thoughts, feelings, or conversations associated with the trauma.
 2. Efforts to avoid activities, places, or people that arouse recollections of the trauma.
 3. Inability to recall an important aspect of the trauma.
 4. Markedly diminished interest or participation in significant activities.
 5. Feeling of detachment or estrangement from others.
 6. Restricted range of affect (e.g., unable to have loving feelings).
 7. Sense of foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span).
- D. *Persistent symptoms of increased arousal (not present before the trauma), as indicated by at least two of the following:*
1. Difficulty falling or staying asleep.
 2. Irritability or outbursts of anger.
 3. Difficulty concentrating.
 4. Hypervigilance.
 5. Exaggerated startle response.
- E. *Duration of the disturbance (symptoms B, C, and D) is more than one month.*
- F. *The disturbance causes clinically significant distress or impairment in social, organizational, or other important areas of functioning.*
-

Specify if:

Acute: if duration of symptoms is less than 3 months.

Chronic: if duration of symptoms is 3 months or more.

Delayed onset: onset of symptoms is at least 6 months after exposure to the stressor.

A crucial aspect in the development PTSD or other trauma related psychopathology (e.g., major depressive and anxiety conditions, or psychotic conditions) is the exposure to a traumatic event that caused potent emotions such as fear, rage, disgust, or grief to develop (Carlier, 1999). If the traumatic stress that this experience engendered is severe, and full-blown posttraumatic stress disorder (PTSD) has developed, the individual is likely to react to current stimuli that are reminiscent of the original traumatic event with psychological and physiological symptoms appropriate only to the original traumatic situation (Hobfoll et al., 1991). Expected symptoms can include: nightmares; intrusive daytime images and bodily sensations related to the traumatic experience; excessive psychological startle; extreme anxiety states alternating with numbing and anhedonia; difficulty modulating arousal in general and anger in particular; and dissociative reactions (American Psychiatric Association, 1994; van der Kolk, 1987; Weiss & Marmar, 1997).

The prevalence of PTSD

A study of 200 police officers involved in rescue work following a civilian plane crash showed that seven percent developed PTSD following the disaster rescue work (Carlier, Lamberts, Van Uchelen, & Gersons, 1998), and this figure was consistent with findings from a study on emergency rescue workers (which included 149 police officers) by Marmar, Weiss, Metzler, Ronfelt, and Foreman (1996). These authors reported that nine percent of the sample had symptom levels typical of psychiatric outpatients. Carlier (1999) commented that given the high-risk status of police officers, it is a wonder that the percentage of police officers diagnosed with PTSD should be as low as seven percent, given that an estimated nine percent of the general public is affected with the disorder. A study of 1,007 young adults by Breslau et al. (1991) found a rate of exposure to traumatic events of 39%. The rate of PTSD in those exposed was 23.6%, yielding a life-time prevalence in the sample of 9.2%. This placed the diagnosis of PTSD among the most common psychiatric disorders of the young, surpassed only by phobia, major depression, and alcohol and drug dependence.

The New Zealand Police Organization reported diagnosed post-traumatic reactions in 21% of officers who cited psychological reasons for disengagement (Disengagement

Summit, 1998). An earlier study of the psychological reasons for disengagement, reported diagnosed PTSD in 9.8% of officers who disengaged in 1995 (Miller, 1996). Officers who disengage from the police have retired because of disabilities that prevented them from functioning as police officers. A study of 527 serving police officers (Stephens, 1996a) found PTSD symptoms in 7.5% of the officers. Stephens examined the traumatic events most often related to higher PTSD symptoms and found a known police officers' death, robbery, mugging or hold up, and chronic distress at work were the most upsetting. This rate of PTSD found in New Zealand police officers approximated that of other groups in the New Zealand community who had experienced a traumatic event (Cyclone Bola), although it was not as high as found for groups of New Zealand combat veterans (Long, Chamberlain, & Vincent, 1992).

Job Performance Consequences

The effects of traumatic experiences on officers' psychological and physical health are of increasing concern to many Police Organizations (Disengagement Summit, 1998; Stephens & Long, 2000). Officers who are affected by traumatic experiences may manifest the effects in terms of personality changes, and/or reduced job performance. Territo and Vetter (1981) reported that the following signs may indicate that the officer's resilience has crumbled: sudden changes in behaviour, usually the opposite of previous behaviour (e.g., from cheerful and optimistic to gloomy and pessimistic); gradual changes in behaviour that point towards deterioration of the individual (e.g., slow and sullen behaviour at work); erratic work habits (e.g., coming to work late, leaving early, or abusing compensatory time privileges); increased sick time due to minor problems (e.g., headaches, colds, or stomach problems); inability to maintain a train of thought (e.g., rambling conversation); grandiose behaviour (e.g., preoccupation with religion or politics); excessive use of alcohol or drugs (e.g., obvious hangovers, or lack of interest in appearance); fatigue (e.g., lethargy, or sleeping on the job); peer complaints (e.g., refusal of other officers to work with the individual); excessive complaints from the public; excessive accidents and/or injuries; and manipulation of fellow officers or members of the public. Following a traumatic event Williams (1993) suggests the following signs should concern the Police Organization if they become habitual in officers: significant personality changes, such as isolation, irritability, or increased alcohol use, deterioration

of work habits or attitudes, such as chronic lateness, absenteeism, or excessive use of sick leave.

Officers who are affected by traumatic incidents may retire early; and officers who leave take with them their experience, knowledge, and professional skills. This can considerably deplete police resources, as replacement officers need to be recruited and trained. A conservative estimate of the cost of recruiting and training a New Zealand police recruit is about \$144,000 (Disengagement Summit, 1998). Officers who leave by disengagement (voluntary retirement) typically incur costs related to their disengagement applications of about \$23,000. These include the costs for health assessment, sick leave, and retiring leave. As well there are intangible costs, such as lowered morale within the organization.

PTSD and stress reactions may also have litigious consequences for employers. In the United States and in some European Countries workers' compensation laws often include emotional distress for events that occurred in the workplace. The employer may be held responsible for employment-related stressful events that harm or injure employees (Williams, 1993). Friedman, Framer, and Shearer (1988) evaluated the financial implications of traumatic stress outcomes. These American researchers reported that the average cost for an early intervention for traumatic stress was \$8,300. When detection and intervention were delayed, the cost rose to \$46,000. With early intervention the time off work averaged 12 weeks, with delayed intervention this rose to 46 weeks. Finally, 94% of the delayed intervention group chose to litigate, as compared to only 13% of the early intervention group. In New Zealand recent court cases have seen substantial damages awarded against the New Zealand Police for occupational stress-related trauma. For example, in 2001 a judge awarded George Brickell, a police video operator, \$242,000 after he developed posttraumatic stress disorder from viewing horrific sights as part of his job (Wilson, 2002).

Physical Health Consequences

For many police officers, exposure to traumatic events resulted in peritraumatic (during the critical incident and immediately after) physical reactions such as sweating, shaking, and a racing heart. A study by Brunet et al. (2001) found the occurrence and magnitude of such reactions to be positively associated with two widely used measures of PTSD symptoms (the Civilian Mississippi Scale and the Impact of Event Scale-Revised). This community study of the impact of PTSD reported a relationship between PTSD and chronic medical illness. The risk of bronchial asthma, peptic ulcer, and hypertension were significantly higher in PTSD cases (compared to non-PTSD cases). These disorders have been thought of in part as stress-related. Kolb (1989) also observed an association between PTSD and hypertension in his clinical population of Vietnam veterans. A longitudinal study of Gulf War veterans predicted that the degree of PTSD reactivity reported immediately after returning from the Gulf War would be predictive of self-reported health problems two years later. These researchers found a moderate association between PTSD and health problems that provided support for the causal role of PTSD symptoms on health outcomes (Wagner, Wolfe, Rotnitsky, Proctor, & Erickson, 2000). The physical symptoms included the following items: faintness or dizziness; pains in the heart or chest; nausea or upset stomach; trouble getting your breath; hot or cold spells; numbness or tingling in parts of the body; and feeling weak in parts of the body.

A study of New Zealand police officers (Stephens, 1996a) reported that officers who experienced PTSD symptoms following traumatic experiences were also likely to be suffering from a range of other incapacitating physical symptoms. This study of the physical health of 527 New Zealand police officers found a predicted correlation between PTSD and physical health was supported, with significant correlations between physical symptoms, self-reported health, and the disability days (number of days off work or socializing caused by ill-health) and PTSD. The physical health symptoms reported most frequently by the PTSD cases included: insomnia, headache, back pain, stiff muscles, itching or painful eyes, sensation of pressure in the head, sore muscles, sore joints, watering eyes, and upset stomach. This study found that the PTSD cases and non-cases reported similar types of symptoms. However, there was an increase in the frequency

and severity of a broad range of physical symptoms, and poor health in general associated with the PTSD cases.

A researcher concerned with PTSD sufferers, de Loos (1990), suggested an association between unresolved traumatic stress and physical effects related to arousal and anxiety syndromes. De Loos suggested physical symptoms were the core components of all posttraumatic reactions, and that their identification could often occur before the clinical diagnosis of PTSD. Symptoms identified by de Loos included: dizziness, blurred vision, pounding heart, irregular beats, hand tremor, headaches, muscle pains, digestive problems, and respiratory problems. Additional symptoms that have been associated with PTSD in other studies include: ringing in the ears, rapid breathing, nausea and stomach cramps, skin conditions, and back pains (Burges Watson, Wilson, & Hornsby, 1992; Litz, Keane, Fisher, Marx, & Monaco, 1992; Shalev, Bleich & Ursano, 1990).

Moderating Factors for Traumatic Stress

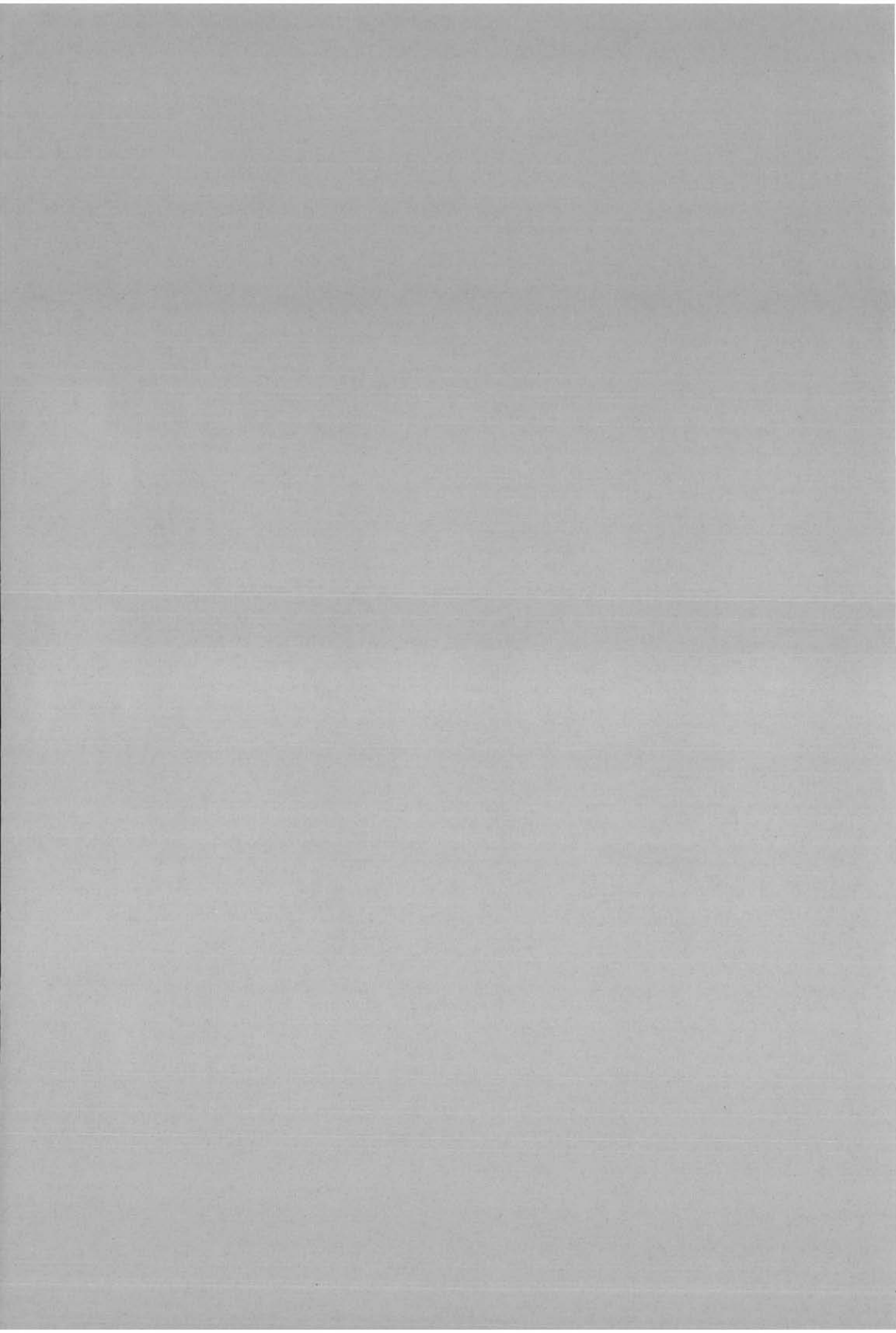
A traumatic event is usually not the sole cause of PTSD, as the risk of PTSD is governed by a combination of factors (Carrier, 1999). Other variables may affect the relationship between traumatic event exposure and the development of traumatic stress symptoms. A moderator variable affects the direction or strength of the relationship between an independent predictor variable (in the present study traumatic events) and a dependent criterion variable (in the present study traumatic stress outcomes). A moderator is the third variable that affects the zero-order correlation between two other variables (Baron & Kenny, 1986); the strength of the moderator variable causes the relationship between the dependent/independent variables to change, depending upon the value of the moderator variable (Hair, Anderson, Tatham, & Black, 1998). This is also known as an interactive effect (Jaccard, Turrisi, & Wan, 1990). An important moderator variable is the organizational environment, as this defines the context within which traumatic experiences and recovery occur (Paton & Smith, 1999). Prevailing organizational practices, managerial attitudes to stress, and the level of overt organizational concern for

staff well-being can influence the impact, intensity of, and recovery from traumatic experiences (Paton & Smith, 1999). A recent study of the long-term effects of serial exposure to critical incidents among paramedics (Alexander, Klein, & Bowes, 2000) indicated that the most important factor regarding recovery for personnel exposed to traumatic events was an organizational climate of care. A strategy recommended by these researchers and those from a study of Dutch police officers (Gersons & Carlier, 2000) was to train the senior officers to recognize the symptoms of posttraumatic stress in their police officers. Early detection, monitoring, assessment, and treatment involving occupational support teams (of doctors and social workers) can facilitate a caring organization in which police officers support each other.

It appears likely that organizational events will impact upon the development of psychological distress reactions, and the organizational environment may also affect the development of traumatic stress reactions. As Gist and Woodall (2000, p. 88) have commented:

“It is organizational strain, the daily interactions and issues of the workplace, that largely determine the stressor impact of any given event”.

The impact of the organizational environment on police officers’ well-being will be the focus of the next two chapters, with the impact of negative daily organizational events being considered in the following chapter.



Chapter Three

ORGANIZATIONAL STRESSORS

Introduction and Overview

It has generally been assumed that the greatest stressors police officers faced were the traumatic operational experiences unique to their profession, for example attending the scene of multiple fatalities, witnessing the death of a member of the public, or the shooting of a police officer. This assumption is now being questioned. While such acute experiences can result in psychological health problems for some officers, for many others the chronic daily work stressors inherent in their organizational environment may be more upsetting.

Organizational stressors are not specific to any one profession, but rather are intrinsic to the general work place. These stressors have been variously described as: job context stressors (Evans & Coman, 1993); the nature of the police organization (Martelli, Waters, & Martelli, 1989; Spielberger et al. 1981); organizational stressors (Brown & Campbell, 1990; Violanti & Aron, 1995); chronic stressors (Band & Manuele, 1987); organizational characteristics (Paton & Smith, 1996; Paton & Violanti, 1999); and organizational hassles (Hart, 1996).

This chapter explores the various ways international studies have conceptualized organizational stressors and examples of these stressors are given. Organizational stressors within the New Zealand Police are then described and compared to those reported in the international studies. The definition and measurement of organizational stressors are considered. The focus of the chapter then turns to the effects these work

experiences may have upon police officers' psychological and physical well-being. Organizational stressors may result in distress outcomes, and may also be implicated in traumatic stress outcomes; as moderating variables exacerbating the effects of traumatic exposure.

Police Organizational Stressors

“It’s not the danger of the job that’s forcing policemen to quit, but the lack of understanding by their superiors” (Evans & Coman, 1988, p. 968).

While police officers enter the profession no doubt expecting some upsetting experiences, even anticipating at times they will be affected by these experiences, what they may not have considered is that the organizational environment in which they work may be a greater source of difficulties for them. Like the members of any large organization (e.g., teachers, military personnel, or hospital personnel) police officers are subjected not only to the unique operational demands of their profession (e.g., traumatic event experiences), but also to the general organizational characteristics and working conditions inherent within their work environment. While stressor characteristics and individual differences have been studied extensively in traumatic stress research, organizational factors, although recognized as possibly upsetting to police officers, have not received similar research attention (Paton, Smith, Violanti, & Eränen., 2000). Studies that have examined the consequences of exposure to organizational stressors are largely American and these are reviewed in the next section. The available British and Australian studies are also examined, as these may more closely approximate the New Zealand Police organizational context.

American Studies of Organizational Stressors

The idea that organizational events may be more stressful to police than operational events has been debated in the police literature. However, this issue has received little research attention. For over thirty years it has been argued that administrative policies and lack of administrative support were worse for police than the dangerous and unsavory aspects of the job. An early study of the factors of job stress among police identified two major categories of stress (Symonds, 1970). The first category reflected the nature of police work, with stressors such as exposure to danger, facing the unknown, and confronting hostility. The second category reflected the nature of the police organization. These stemmed from the structure of the police organization and included such stressors as rules, disagreeable job assignments, and limited promotional opportunities. Reiser (1974) identified the authoritarian structure and management practices of police organizations as the key contributors of stress. Not only were organizational characteristics and working conditions associated with police stress, but also it appeared that they were possibly the prime contributors.

An early study of the Cincinnati police also described two major sources of psychological stress (Kroes, Margolis, & Hurrell, 1974). First, these were individual incidents that affronted the officer's self-image and professionalism (e.g., a lack of administrative support, a lack of participation in decision making, or equipment failure). Secondly, these were factors that stemmed from the nature of police work, the line-of-duty incidents. Of the two, the researchers concluded that the first seemed to be more bothersome to the police officer. That study was based on structured interviews and lack of support from the police administration was found to be the primary source of stress for police officers. Other major stressors identified included the courts demonstrating leniency towards criminals, equipment that was either lacking or in poor condition, problems with community relations, problems with public apathy, and the negative image of police officers. These results challenged the commonly held view that the police were the most upset by the factors unique to their work, such as exposure to death or suffering, dealing with violent criminals, and being involved in potentially life-threatening situations.

The two types of police work stress have also been conceptualized in terms of acute and chronic domains (Ellison & Genz, 1987; Stratton, 1978). Acute stressors are those that are physically and emotionally dangerous, whereas chronic stressors result from frustrations with departmental processes and related work functions. Band and Manuele (1987) list examples of both types of stressors for police officers. Examples of acute stressors include working with cases of child victimization or accidental death. Chronic stressors include role conflict between the individual's and the administration's conceptions of the police role, officer peer-group influence, and internal departmental investigations. These researchers interviewed police officers and found that the chronic stressors were identified as problems for the police officers, whereas the acute stressors were not. Other researchers have defined the stressors in terms of intrinsic and organizational domains. Kirkcaldy, Cooper, and Ruffalo (1995) conducted a study of 49 Illinois police officers. The study evaluated factors intrinsic to the job and organizational structure and climate. The results indicated that police officers experienced greater job-related pressures from the latter category of stressors.

Spielberger et al. (1981) initiated research in the field with their Police Stress Survey. This had a two-factor structure, and the items reflected administrative/organizational pressures, and physical/psychological threats. Administrative/organizational items included a lack of recognition for good work, disagreeable departmental regulations, a lack of participation in decisions, and excessive inappropriate discipline. Physical/psychological stressors included responding to a felony in progress, high-speed car chases, physical attacks, and making arrests alone. This scale was administered to 99 police officers from an American metropolitan city and the results pointed to the administrative/organizational stressors having a greater relationship to job attitudes, rather than the physical and psychological hazards associated with police work. Violanti and Aron (1995) studied 110 police officers from a large police department in New York State using the Spielberger et al. (1981) measure. On the relationship between police stressors and psychological distress they found that organizational stressors had a total effect on distress of approximately 6.3 times that of inherent police stressors. That study indicated that, despite a public perception that police stress was related to the inherent aspects of policing (e.g., danger or violence), it was the police organization that was most stressful. The investigation of police stress should therefore include the police

organization as a primary focus. A recent study of 700 police officers from New York, San Jose, and Oakland, with 350 matched controls (Best et al., 2000) also found that routine work stress was the most important regarding the development of posttraumatic stress reactions. The most troublesome work stressors reported were: being underpaid, personal problems resulting from work demands, public criticism, and unfair criminal sentencing.

British studies of Organizational Stressors

In a study of the occupational stressors experienced by British Metropolitan police officers, Gudjonsson and Adlam (1985) surveyed 187 officers with their Situation Stress Inventory. This comprised 45 items which were relevant and sometimes specific to police work. This study evaluated different ranks of officers, and included 75 constables at the end of their two-year probationary period. Among these constables the most stressful and frequently reported items were: having to pass examinations and give evidence in court. Dangerous or violent confrontations, having to participate in riot control, not being able to rely on their partner, and having a complaint made against them were also frequently reported but ranked as only moderately stressful (Gudjonsson & Adlam, 1985). Overall, the probationary constables and the sergeants gave significantly higher stress scores than the senior officers. Occupational demands such as dealing with messy car accidents and breaking news to bereaved relatives appeared to become less stressful with experience. However, the authors commented that senior officers could be more reluctant to admit and report stress-related reactions.

This study indicated that officers of different ranks experienced different stressors. Gudjonsson and Adlam (1985) considered that organizational changes were most likely to reduce stress among senior officers, whereas improved training may be of greater benefit to the junior officers. However, the following stressors were replicated across the ranks: role ambiguity; not getting sufficient support from senior officers; and the experience of having a complaint made against them.

A British occupational health study of 758 police officers working in the Grampian area of North-East Scotland found that organizational and managerial factors were perceived

as being the most important source of stress (Alexander, Walker, Innes, & Irving, 1993). Again these results indicated that contrary to popular wisdom, exposure to trauma, even when it was violent, was not the outstanding problem. The most stressful issues were related to job design, human relations, personnel management, and the structure of the police organization. That study reported that 60% of officers considered they had been overworked during the previous four weeks; this resulted in feelings of tiredness, irritability, impaired work performance, and impaired family relationships. Almost half the officers felt the police organization had, to some extent, been unaware of their efforts at work, and as many as two thirds reported that in the last four weeks they had felt frustrated by what they felt to be unnecessary obstacles at work (Alexander et al., 1993).

Working in Britain, Brown and Campbell (1990) extensively investigated police organizational and operational stressors in a sample of 954 police officers from an English provincial police force. The authors looked at two broad categories of stressors: operational police; and organizational/management. Traumatic stressors were excluded from this study's operational stressors. However, their operational stressors were broadly based and included such experiences as dealing with sudden deaths, violent offenders, and the victims of violence, stressors that would have been categorized as traumatic by the Traumatic Stress Schedule (Norris, 1990). These events emerged as the most frequently reported operational stressors.

However, what was interesting was the impact of organizational/management stressors. The most frequently reported sources of felt stress for more than half the sample were staff and manpower shortages, shift work, time pressures and deadlines, lack of consultation, and communication difficulties. When the police officers were interviewed about potential stressors they identified organizational and management features as more stressful more often than operational duties, in a ratio of four-to one (Brown & Campbell, 1990). The authors excluded the most traumatic of stressors (e.g., killing of a police officer, or killing someone in the line of duty) on the grounds that these were infrequent occurrences. While such traumatic events were not included, the study is interesting as it indicates stressors far more frequently originated from the police organization itself, rather than from experiences unique to the policing profession.

Australian studies of Organizational Stressors

In a study with the Australian Federal Police, Evans and Coman (1988) asked ex officers their reasons for resigning. Fifty replies were received and the responses indicated that, while the officers had been generally satisfied with their work duties, most were highly dissatisfied with some aspects of their working environment and the type of organization for which they worked. The most frequent reasons for resigning were: inability to transfer between regions; poor pay; quality of supervision; and the amount of shift work they had to do. The lack of counseling readily available and the perceived lack of effective communication within the organization were also frequently cited.

This preliminary study was followed by a more extensive investigation that included psychological measures of stress. Evans and Coman (1993) surveyed 271 police officers from two Australian police organizations (The Australian Federal Police and the Victorian Police). They examined work stressors under two categories: job content stressors, those that arose from the duties police officers carried out; and job context stressors, those that arose from the work situation and the type of the police organization in which the officers performed their duties. Job context stressors related to perceived difficulties in the job environment and included such things as: unsafe working conditions; lack of effective communication; inadequate career opportunities; narrow latitude with respect to decision making; and role ambiguity. The researchers hypothesized that, although the police officers faced numerous dangerous and unpredictable work stressors, job context stressors (the many work stressors common to most occupational groups) would equally stress them;

The results from that study, which used the Coman Revised Critical Life Events Scale indicated that although Australian police officers were *occasionally* involved in highly stressful job content events (e.g., the violent death of a partner in the line of duty, shooting someone in the line of duty, or attending a call to the non-accidental death of a child) these events were perceived to be part of the job. On the other hand, the officers were *frequently* exposed to moderately stressful job context events that derived from the nature of the organization in which they worked. They found that the most stressful job context events were: failing a police-training course, failure on promotional examination,

unsatisfactory personnel evaluation, and being passed over for promotion. The most frequently occurring job context events were: long hours; job overload; change in supervisors; negative community attitudes; changing shifts; and duty under a poor supervisor. These researchers found that all their personality measures correlated more highly with job context stressors than with job content stressors (Evans & Coman, 1993). This suggested that the major source of stress for police officers came from the organization in which they worked. The officers also described their police organizations as poorly equipped to maintain their own organizational systems and lacking the flexibility to adapt to new environmental and social circumstances. The police officers felt there was little chance of personal growth and development; instead they were bound to operate within narrow and inflexible rules and guidelines.

Hart, Wearing, and Headey (1993) conducted another Australian study of police stressors. They carried out a factor analysis of the items, appraised by a sample of 330 police officers, which reflected police daily positive and negative work experiences. They found two broad domains of experiences that related to organizational and operational experiences. Their organizational hassles (organizational stressors/daily negative events) and uplifts (daily positive events) were defined as those experiences stemming from the day-to-day routines of police organizations. These were similar to the experiences an individual could have in any organizational setting (e.g., the education sector). Operational hassles and uplifts stemmed from specific tasks undertaken by police officers; experiences which set police officers apart from other occupational groups (Hart et al., 1993). The authors considered this distinction was consistent with the premise that work stressors were best measured with scales that contained organizational items relevant to most jobs (to allow comparisons between occupational groups), as well as occupational items specific to the profession under investigation.

Job stress researchers (Brown & Campbell, 1990, 1994; Evans & Coman, 1988, 1993; Hart et al., 1993; Kroes et al., 1974; Paton & Smith, 1996; Paton & Violanti, 1999; Reiser, 1974; Sewell, 1993; Sigler & Wilson 1988; Spielberger et al., 1981; Stratton, 1978; Violanti & Aron, 1993) have recognized traumatic stress is not the only source of stress for police officers. Organizational issues in the work environment can be more stressful for officers than traumatic event exposure, as organizational issues happen so

frequently. The nature of the Police organizational context therefore needs to be emphasized in relation to psychological outcomes (Paton, 1997; Stephens, 1996a).

New Zealand Police Organizational Stressors

Prior to the commencement of this study, New Zealand police officers from several North Island cities (Auckland, Wellington, and Palmerston North) were asked about the types of work events they found most upsetting. Their responses were all organizational events, and in most cases these reiterated the types of events detailed in the literature reviewed above. Officers expressed the opinion that they expected to face traumatic events as part of the job, however, what really got to them was the pressure of the job, the relentless paperwork, and the lack of resources. For example:

“It’s not death or accidents, I expect that, the worst thing is the relentless pressure, too much paperwork, and lack of resources”.

The New Zealand Police Organization was a common source of dissatisfaction, with the opinion expressed that officers in administration appeared to have been lobotomized, that the Organization did not know where it was going, and that there was a general air of dissatisfaction, and low morale. The Police Complaints Authority was singled out as particularly upsetting, and officers complained that their supervisors were spending all their time on complaints, and that the bosses did not care about them or value their efforts. The issue of shift work was raised several times; this was felt to be isolating, hard to get used to, and became more and more difficult to cope with, particularly as officers got older, and had families. Fleming, the New Zealand Police Advocate, commented that officers were under extreme pressure because of front-line shortages, and that this was making many ill. They were not happy about the future or how they were being treated (Fleming, 1997).

Police officers, the Police Association, and the media, have constantly identified *lack of resources* as the major concern for New Zealand Police. A particular worry was the agreement to cut police numbers following the proposed installment of the Integrated National Crime Information System (INCIS). To fund the new system, in anticipation of the support this technology would bring, the police had down-sized by 180 officers by

March 1997, with a further 540 police expected to go over the following three years. However, the feeling within the police was that they were being robbed of staff and were seeing nothing in return (Catherall & Larkin, 1997; McFadyen, 1997). In August 1999 INCIS was abandoned, three years behind schedule, and millions of dollars over budget (Prime Minister, 1999). The timing of the present study also coincided with the *Policing 2000* development initiative. This review redesigned a number of key organizational processes. The most important were: the Resolutions Project, concerned with the prosecutions process; the Recruitment Project, concerned with appointments; and the Coordinate Response Project, concerned with call taking and dispatch. Each of these projects encountered difficulties with implementation. The Resolutions Project was suspended following a review of police administration and management structures. The Recruitment Project required INCIS-related technology to come on stream, and the Coordinate Response Project was delayed preceding an external review (Minister of Police, 1998).

Past work on trauma and stress in the New Zealand Police has led researchers to suggest that organizational stressors should be investigated. Stephens (1996b) investigated the impact of trauma on New Zealand officers, however, she found officers reluctant to ignore organizational stressors. Most upsetting were the pressures of shift work, internal police inquiries, unfair work practices, inequalities in work conditions, lack of recognition for hard work and loyalty, and the disregard for staff welfare by the executive. Adler (1992) also identified organizational concerns; in a study of 185 New Zealand police officers on the effects of coping with job stress, Adler found that three job context factors were significantly related to strain: inadequate support; role ambiguity; and role overload. A general lack of support was perceived within the organization, particularly in the way senior staff related to the lower-ranked officers. Role ambiguity issues indicated that lower-ranked officers were sometimes unclear about what was expected of them, and policies and required practices were not clearly perceived by staff. Inadequate communication channels were strongly related to role ambiguity. Role overload was highly related to stress and indicated that the police felt overworked. In a recent study with the New Zealand Police McDowell (1997) interviewed 52 officers about their individual perceptions concerning traumatic events. While the focus of that research was traumatic stressors, as with Stephens (1996b) it became apparent that

organizational stressors could not be ignored. Internal investigations were identified as traumatic on 16 occasions and job stressors including paper work and shift work were referred to on 11 occasions.

An evaluation of the submissions from New Zealand psychologists regarding their Trauma Policy referrals, indicated that organizational and management factors were seen to be significant precipitators of stress. Most commonly these were the disempowerment of staff by management structures, lack of resources, excessive bureaucracy, and feelings of being undervalued by supervisors (Disengagement Summit, 1998). Organizational style was perceived to be hierarchical and discouraging of communication, and this contributed to stress reactions. Significant organizational factors identified included: increased workloads and insufficient resources as major factors; with poor management, legislative changes, and paperwork commonly reported. The stressors identified by New Zealand police officers were, in many instances, organizational concerns common to those identified in the international studies.

Common complaints included: the authoritarian structure of the organization; problems with supervisors; lack of administrative support; inadequate communication; equipment failure; lack of resources (particularly front-line officers); complaints being made against officers; internal investigations; inadequate pay; too much paperwork; problems with shift work; and generally too much work. The New Zealand Police Organization was in the process of abandoning the INCIS computer network and major projects could not be implemented because of this. While some aspects of these services would not directly impact upon recruits during their first year on the job, they contributed to an organizational environment that was in a general state of upheaval and uncertainty.

Models of Organizational Stressors

Organizational stressors are organizational characteristics and policies that are common to many occupations (Evans & Coman, 1993). Employees of any organization can become dissatisfied with, or stressed by their job and the organization they work for, and police officers are no exception. Police officers may be particularly at risk because as

well as the unpredictable and dangerous aspects of their occupation, they may be equally, or more stressed, by the many organizational stressors that they have in common with most occupational groups. This is contrary to popular wisdom, which believes policing is particularly stressful because of the dangerous and unsavory tasks inherent in police work (Sigler & Wilson, 1998).

Cooper (1986) has developed a model of psychological and occupational stress that combines sources of organizational stress together with certain individual personality characteristics that are predictive of stress manifestation. Sources of organizational stress include factors intrinsic to the job. These may include poor physical working conditions, work overload, time pressures, and responsibility for lives. The individual's role in the organization may be another source of stress, particularly when there is role ambiguity (i.e. lack of clarity about tasks) or role conflict (i.e. conflicting job demands), and boundary conflicts. Other organizational stressors may relate to the organizational structure and climate; particularly when there is little or no participation in decision making, undue restrictions on behaviour, trouble with office politics, and lack of effective communication.

Personality characteristics may contribute to distress outcomes. These may include the individual's level of anxiety, their level of neuroticism, and their tolerance for ambiguity. Type A (coronary prone) individuals may be particularly susceptible. As well the home/work interface may mediate or exacerbate distress reactions. For example family problems, life crises, or dual-career marriages may predict symptoms of ill health.

Symptoms of distress may manifest at both the individual and the organizational level. Individual distress symptoms may include problems with diastolic blood pressure, cholesterol level, heart rate, smoking, depressive mood, escapist drinking, job dissatisfaction, and reduced aspiration. At the organizational level symptoms may include high absenteeism, high labour turnover, industrial relations difficulties, and poor quality control. These symptoms can predict at the individual level coronary heart disease and mental ill health. At the organizational level, they may manifest as prolonged strikes, frequent and severe accidents, and chronically poor performance.

Coopers' (1986) model applies to stressors within any occupational context.

Researchers working specifically within the police (e.g. Kroes, Margolis, & Hurrell, 1974; Reiser, 1974; Stratton, 1978) have divided police occupational stressors into the following four major categories:

- 1) Stressors inherent in police work (e.g. dealing with victims, danger, and shift work).
- 2) Stressors stemming from the nature of the police organization (e.g. communication, resource, and administrative difficulties).
- 3) External stressors (e.g. lack of public support, and dealings with the courts).
- 4) Individual stressors (e.g. fear about competency, and feelings of helplessness).

Evans and Coman (1983, 1993) have developed a model of occupational stress that conceptualizes stressors into two broad domains that reflect in general terms the nature of the organization, and in specific terms the unique demands of the profession. In general terms, the work environment and the nature of the organization are conceptualized as job context stressors. The specific stressors that are particular to that occupation and arise from the nature of the duties that the police officers perform are described as job content stressors. Evans and Coman's model encompasses two of the major sources of police stress described by previous police researchers (Kroes, Margolis, & Hurrell, 1974; Reiser, 1974; & Stratton, 1978). Their job context stressors describe stressors stemming from the nature of the police organization, whereas their job content stressors describe stressors inherent in police work. Their model also encompasses the broadly based occupational components of Cooper's (1986) model, apart from the assessment of personality variables.

Hart, Wearing and Headey (1993) have further developed this approach into a framework that considers the organizational and occupational events within a model that allows for the impact of both negative and positive work events. As with Evans and Coman these researchers found police officers were exposed to two broad domains of experiences that reflected organizational and operational experiences. They defined organizational hassles and uplifts as those experiences that stemmed from the day to day routines of police organizations, events that an individual can experience in any organizational workplace. Operational hassles and uplifts stemmed from the specific tasks that are undertaken by police officers, and are the experiences that set police officers apart from other occupational groups.

Rationale for the Theoretical Approach Utilized in this Study

The current study is based on the methodology of Hart et al (1993). However, the occupational component of the Police Daily Hassles and Uplifts Scales have not been utilized. The impact of police traumatic event experiences would fall within the occupational component of these Scales. However, as the impact of police traumatic experiences is the primary research goal of this study, a measure that assesses this facet of the occupational environment in more detail was chosen for the study (the Traumatic Stress Schedule). The Hart et al model allows for the assessment of organizational hassles and uplifts, and can be applied in conjunction with a measure for police traumatic event experiences. This allows the impact of both organizational events and occupational traumatic experiences to be evaluated and compared. Traumatic stressors are evaluated in terms of traumatic stress, psychological distress and posttraumatic growth. Organizational stressors and uplifts are evaluated in respect to levels of psychological distress. Physical health outcomes are also considered in relation to the traumatic and organizational events.

While the present study has applied the structure of Hart et al's (1993) model in terms of the impact of positive and negative organizational events (uplifts and hassles), and the impact of occupational traumatic experiences, outcome measures have differed. Hart et al applied their model in regards to levels of perceived quality of life and job satisfaction, whereas, the present study has evaluated the outcomes of posttraumatic growth, physical health, and psychological well-being (psychological distress and traumatic stress symptoms). This supports Violanti and Marshall (1983) as these researchers consider that police stress research should evaluate not only the stressor dimension of the stress process (e.g., organizational stressors, and traumatic events), but also the actual experienced stress the individual is directly experiencing; as this is an independent element (e.g. psychological distress and traumatic stress).

Experienced stress may manifest in a range of symptoms. Operationally, many studies have defined job stress in this way as the experience of unpleasant emotions such as tension, frustration, anxiety, anger, and depression (Borg, 1990); in doing so they are describing job stress as the experience of psychological distress (Hart, 1996; Wearing &

Headey, 1992). The stress process has also been conceptualized within a stressor/strain framework, in which job-stress variables (e.g., measures of work conditions) predict job-strain criteria (e.g., anger, anxiety, and depression) (Brief, Burke, George, Robinson, & Webster, 1998; Cooper, 2000; Spector, Zapf, Chen, & Frese, 2000). In the present study, the stress process is considered within a stressor/strain framework that utilizes Hart et al's (1993) methodology. Stressors are conceptualized as external demands and are measured by levels of organizational stressors and traumatic event experiences. Stress outcomes are conceptualized as internal responses (strains) and are measured by levels of psychological distress and traumatic stress symptoms. This approach is consistent with Brown and Campbell's (1994) perception of stress as a stimulus variable imposed on the person from outside, that results in physical or psychological discomfort. This approach is also consistent with the stressor/experienced stress framework of Violanti and Marshall (1983). Regarding police research, this allows for the impact of stressors/external demands, such as organizational stressors, as well as strains/internal responses, such as symptoms of posttraumatic growth and traumatic and psychological distress.

This study has therefore utilized a methodology that has combined pathogenic and salutogenic research methodologies. The pathogenic paradigm has not been dismantled, but simply widened to include salutogenic outcomes, so that both negative and positive work events and negative and positive consequences of such events are investigated. Paradoxically as it may appear, the positive does not preclude the negative, and vice-versa (Hart et al, 1993, 1995; Tedeschi & Calhoun, 1995, 2002; Watson et al, 1998).

THE MODERATING EFFECT OF ORGANIZATIONAL STRESSORS

Evans and Coman (1993) considered that the reason police work was so potentially stressful and demanding was the combination of job context and job content events. Prevailing organizational practices such as the management's attitude to stress, leadership style, and the level of overt organizational concern for staff well-being may influence the intensity and duration of traumatic event impact and the rate of recovery. Recent studies have examined the impact of the organizational environment on the development of traumatic stress reactions, and whether, and how it influenced recovery

(Paton, Smith, et al., 2000). A study by Eränen, Miller, and Paton (1999) examined the factors that affected trauma symptoms in ferry employees six months after the sinking of an Estonia ferry. The respondents indicated that '*perception of organizational climate*' was determined to be the most important predictor of traumatic reactivity. Paton, Smith, Ramsay, and Akande (1999) examined organizational influences on traumatic reactivity, by exploring the psychometric structure of responses to traumatic events using the Impact of Event Scale (Horowitz et al., 1979). Results indicated that the organizational environment influenced traumatic stress reactions in high-risk professions, and that professional, organizational, and cultural factors influenced the development of symptoms of traumatic stress.

In the present study, it is predicted that organizational stressors will directly contribute to increased symptoms of psychological distress. Furthermore, it is predicted that organizational stressors will have a stronger impact on levels of distress compared to traumatic stressors. These predictions arose following consideration of the numerous studies that have indicated that routine chronic and frequently encountered organizational events may more stressful to police officers than infrequently encountered occupational traumatic experiences (e.g., Brown & Campbell, 1990, 1994; Eränen et al., 1999; Evans & Coman, 1993; Hart et al., 1993; Kroes et al., 1974; Paton & Smith, 1996; Paton & Violanti, 1999; Reiser, 1974; Sewell, 1993; Sigler & Wilson 1988; Spielberger et al., 1981; Stratton, 1978; Violanti & Aron, 1993).

It is also predicted that organizational experiences will affect the relationship between exposure to traumatic events and the development of traumatic stress outcomes (PTSD symptoms of avoidance/intrusion). Organizational stressors are expected to have a moderating effect on this relationship. This prediction follows from recent research that has suggested the organizational context may be an important factor regarding the consequences of exposure to traumatic events (Alexander, 1993; Alexander & Wells, 1991; Carrier, 1999; Paton & Smith, 1999; Smith & Paton, 1997). This does not imply that organizational stressors will be a sole cause PTSD reactivity, however, they may act to increase the development of traumatic stress symptoms following traumatic experiences.

Organizational factors have the potential to be beneficial to well-being or they may be harmful and disrupt the resolution of traumatic event experiences. Organizational factors may define the context within which the traumatic experience and recovery occur (Paton & Smith, 1999). The beneficial impact of the organizational context should also be considered. A well organized, caring, and supportive work organization may be beneficial to its officers' health, and counteract the potential negative psychological outcomes that may result from traumatic stressors (Alexander & Wells, 1991; Bartone, 2000; Dunning, 1999; Paton, 1997; Paton & Violanti, 1999; Paton, Violanti, & Smith, 2002). The impact of positive daily work events (uplifts) on police psychological and physical health has received very little research attention. This issue will be the focus of the following chapter.

Chapter Four

ORGANIZATIONAL UPLIFTS

Introduction and Overview

The literature reviewed in the previous chapters has indicated that both traumatic and organizational stressors in the work environment may distress police officers. Traumatic events are predicted to contribute to increased traumatic stress reactions, and organizational stressors are expected to increase the development of symptoms of psychological distress, more so than traumatic exposure. Furthermore, organizational stressors are expected to also affect the relationship between traumatic events and traumatic reactivity. However, what has not yet been examined is the impact of positive day-to-day organizational events (uplifts). A bureaucratic organization with supervision problems, a lack of effective communication, and inadequate career opportunities may exacerbate psychological distress and traumatic stress reactions. The reverse should also be considered; a supportive and well-run organization may ameliorate the effect of stressors on police officers' health. The impact of organizational stressors on police officers has been debated, but has received little research attention. The impact of organizational uplifts has received even less.

This chapter will define the term uplifts and discuss the available studies on this topic. Examples of organizational uplifts within the Police Organization will be presented. The moderating effect of organizational uplifts on traumatic stress reactions is considered. The chapter will conclude with a discussion of the importance of uplifts regarding pre- and post-trauma support.

Organizational Uplifts

Organizational uplifts are events or situations at work that make a person feel good. They can be a source of enthusiasm, peace, satisfaction, or joy (Hart et al., 1993). The term 'uplifts' has been defined as:

“Positive (beneficial to well-being) work experiences encountered by police on a day-to-day basis” (Hart et al., 1995, p. 138).

Evaluating the effects of daily organizational uplifts requires that the police work environment be considered not only as a source of distress for police personnel, but also as a source of support and happiness. The possibility that the daily police environment may be beneficial to officers' well-being has received little research attention. What little research has been done has tended to focus on the impact of negative events. However, to consider the possibility that positive organizational work events may enhance police officers' well-being requires only a widening of the research perspective. While a pathogenic focus on the negative consequences of organizational stressors is undoubtedly important for identification and remediation issues, so too is a salutogenic focus on the positive consequences that organizational uplifts may accrue.

Recent Australian studies have evaluated the impact of positive organizational uplifts on the health of police officers. Firstly, Coman, Evans, Stanley, and Burrows (1991), and Evans and Coman (1993) evaluated the relationship between positive job context items (organizational uplifts) and measures of stress. Secondly, Hart, Wearing, and Headey (1993, 1994, 1995) investigated the relationship between positive daily events (organizational uplifts) and measures of job satisfaction and perceived quality of life. These studies found that uplifts were significantly associated with perceived health benefits. These studies are discussed next, for they support the rationale for applying a broadly based research perspective that evaluates the impact of organizational uplifts.

Evans and Coman have investigated the possibility that the police work environment could be, not only a source of stress for officers, but also a source of support that assisted the officers to cope with stress (Coman et al., 1991; Evans & Coman, 1993).

The scale used to measure police officers' perceptions of job content stress and job context stress was an Australian version of the Critical Life Events scale (Coman Revised Critical Life Events Scale). Officers' perceptions of their work environment were measured using the Work Environment Scale (WES). This scale assesses perceived social support from colleagues, and relationships between employees and the employer. The results indicated that the WES had higher correlations with job context items (the organizational environment in which the officer works) than job content items (the actual duties an officer performs). The work organization, its rules, and operating procedures had a greater impact on the officers' psychological health, than did the actual duties that the officers undertook. The positive WES variables: supervisor support, clarity, and innovation showed the highest negative correlations with job context stress variables ($r = -.31, -.31, \text{ and } -.21$ respectively, all $p < 0.01$). This indicated that the officers who perceived high levels of supervisor support, low role ambiguity, and satisfaction with the flexibility of the organization generally reported lower stress levels. The WES data supported the study hypotheses that the police officers' use of colleagues for social support and perceptions of involvement, peer cohesion, satisfaction, and control at work would negatively correlate with reported stress scores.

Another Australian researcher also investigated the possibility that police organizations could be beneficial to their officers' well-being. Hart et al. (1993) developed a measure that allowed for the assessment of positive (beneficial to well-being) work experiences that police officers could experience on a day-to-day basis. Using this measure (the Police Daily Hassles and Uplifts Scales), Hart and his colleagues determined that police organizational uplifts correlated more strongly with both job satisfaction and perceived quality of life indices, than operational uplifts (Hart et al., 1995). As was found with daily stressors, organizational experiences (i.e., events shared in common with many professions; e.g., supervision, or administration) were more important in determining an officer's overall level of work uplifts than items that were specific to operational police duties (e.g., assisting victims, or successfully dealing with offenders). This study supported the tenet that police organizations could be beneficial, as well as harmful, to their officers' psychological well-being. The organizational experiences that contributed the most to daily uplifts were (in descending order of importance) issues that concerned supervision, amenities, administration, coworkers, workload, and decision-making.

These researchers commented that most of the research on police stress has focused on the negative aspects of the job, an approach based on the premise that police work experiences result in psychological distress, and thus the absence of well-being. However, the notion that psychological distress and well-being lie on a continuum does not account for the fact that a person's psychological response to their environment has both positive (e.g., well-being, positive affect) and negative (e.g., psychological distress, negative affect, depression, or anxiety) dimensions (Hart et al., 1995). Exploratory and confirmatory factor analyses have consistently revealed these to be independent dimensions, rather than opposite ends of a single bipolar continuum (Hart, 1994). Therefore, both positive (beneficial to well-being) and negative (harmful to well-being) facets of the police work environment should be examined, as the existence of one does not preclude the other.

The studies reported above have indicated the importance of organizational aspects of the police work environment regarding police officers' perceptions of daily uplifts. Secondly, these studies have indicated that organizational uplifts may significantly influence police well-being: in terms of less stress symptoms (Evans & Coman, 1993); and in terms of increased job satisfaction and perceived quality of life (Hart et al., 1995). Thirdly, the studies have indicated that while both positive and negative aspects of the work environment should be considered (e.g., uplifts and hassles), so too should both positive and negative outcomes be evaluated (e.g., well-being and distress).

The Moderating Effect of Organizational Uplifts

In a study of the reactions of police officers involved in body retrieval following the Piper Alpha oil rig disaster, Alexander and Wells (1991) found that few officers suffered ill effects following these duties; indeed scores on the measure for anxiety and depression, the Hospital Anxiety and Depression (HAD) Scale, indicated that levels of anxiety had significantly reduced compared to pre-disaster scores. This drop on the HAD Scale results was not demonstrated by a matched control group. A previous study

(Alexander et al., 1991) of these Grampian police officers had indicated that the factors that were potent causes of stress, illness, and high levels of dissatisfaction were primarily managerial or organizational. The positive outcomes following the body retrieval duties suggested to the researchers that organizational and managerial practices could act as powerful antidotes to the negative effects of unpleasant tasks. This claim was reiterated in a follow-up study three years after the original incident (Alexander, 1993) as this replicated the same pattern of results.

Alexander and Wells considered that the key to these somewhat paradoxical results, that is, the reduction in anxiety level scores following the stressful work of body retrieval, concerned the way in which the body-handling duties were organized and conducted. The officers reported that the following features of the work situation were helpful: there was high morale; a clear definition of duties; they were given the feeling they were engaged in a valuable task; there was helpful feedback about their work; there were good relationships among all staff (including those between junior and senior officers); and attention was paid to the officers' physical and emotional needs. Although the officers found the body retrieval unpleasant and distressing, this did not translate into psychiatric symptoms or higher levels of absenteeism. The researchers concluded that these findings appeared to provide a testimony to the preventative role of good management and organizational practices (Alexander, 1993; Alexander & Wells, 1991).

The study demonstrated the salutogenic role that positive work practices may play in preventing negative psychological and physical health problems among police officers exposed to traumatic events. It appeared that organizational uplifts acted to moderate the effect of traumatic event exposure on the development of levels of anxiety.

The Importance of Uplifts Regarding Pre- and Post-trauma Support

Paton and his colleagues (Paton, Smith, et al., 2000; Pollock, Paton, Smith, & Violanti, 2002) have emphasized the importance of developing managerial capability regarding trauma interventions. For example, training can facilitate a participative and supportive management style. This can aid with the identification, acknowledgment, and acceptance

of staff needs, and assist with managing recovery and the return to productive functioning. Paton and Smith et al. (2000, p. 201) commented:

“Given the influence of organizational characteristics on the nature, intensity and duration of traumatic stress symptoms, it is important to accommodate their role in mitigation and recovery planning”.

Bartone (2000) assessed hardiness as a resiliency (bounce back) factor for United States forces in the Gulf War. While based on the military, this study had implications for professions in which employees experience severe stressors (e.g., police, firefighters, and rescue workers). Recommendations to foster resiliency that related to organizational uplifts included: providing increased recognition and praise to employees for their work; leaders giving subordinates more power and autonomy in their jobs; and leaders modeling positive responses to change and unpredictability during operations.

These studies have indicated that employers, managers, and supervisors are in a particularly powerful position to influence the effects of stressors in their environment. Effective management and improved work supervision, may permit employees to work comfortably, and possibly even experience increased feelings of well-being in environments that otherwise would produce high levels of strain (Alexander et al., 2000; Best et al., 2000; Greller et al., 1992). This is particularly important regarding the police, as traumatic event exposure may be beyond the power of the organization to influence. While there may be no way to remove the potential stressors unique to policing short of changing society, there may be ways of mitigating the effects of stressors that are not unique to police work (Brown & Campbell, 1994).

Resilience refers to the ability of individuals, teams, or organizations to return to prior levels of functioning following exposure to hazardous or adverse situations, that is, to ‘bounce back’ or adapt (Paton et al., 2002). One way stress resilience can be facilitated, in the police organizational context, is by fostering appropriate team structure and management. This may involve adopting mental models that allow adaptive emergency decision making to take place (Pollock et al., 2002). A key factor is the implementation of training programs specifically designed to target the development of resilience. As Paton and Flin (1999) have commented, a well trained experienced team can facilitate

stress resistance because tasks can be delegated, second opinions sought, and plans and actions debated and reviewed from different perspectives.

The post-trauma environment can have such an impact on an officers' recovery, that the impact of an event can be as much a function of the way in which the organization and its members respond to an event, as the event itself (Paton & Smith, 1996). A particular organizational uplift that can strongly affect trauma recovery is the supervisory role of management. Perceived supervisor support has been demonstrated to have a strong effect on decreasing depression, job dissatisfaction, and somatic complaints (Marcelissen, Winnubst, Buunk, & DeWolff, 1988). Greller et al. (1992) found that social support from the supervisor to be the only significant moderating variable on the effects of organizational stressors in a police organization. This variable acted to ameliorate the impact of otherwise strain-producing events, so that they had a weaker association with strain. The support offered included positive feedback, participation in decision-making, and supervisor consideration. The researchers commented that taken together, information, support, and esteem may help the individual to alter the stress-producing situation.

Violanti (1996b) also suggested that the supervisory role of management in the work environment should be targeted to facilitate recovery and promote positive adaptation. Developing the capabilities of supervisors as a support resource may also significantly influence not only the individual, but also the organizational culture. By acting as good role models supervisors can promote recovery from stress and traumatic events, and facilitate the development of an organizational culture that is more supportive. These studies have implications for stress management, as improving the quality of supervision may ameliorate the effects of stressful events.

The possibility needs to be considered that exposure to traumatic events can result not only in outcomes of psychological distress, but also in outcomes of resilience and growth. As research has indicated, organizational experiences may be rewarding as well as detrimental, and organizational uplifts can have the potential to directly contribute to officers' well-being. Organizational uplifts, such as a strong sense of team identity, perception of a job well done, and a heightened appreciation of life and colleagues can

influence the meaning attributed to a traumatic experience, and increase the likelihood of positive resolution and posttraumatic growth (Alexander, 1993; Alexander et al., 2000; Alexander & Wells, 1991; Anderson, Christensen, & Peterson, 1991; Best et al., 2000; Moran, 1999; Paton, Smith, et al., 2000; Pollock et al., 2002; Tedeschi & Calhoun, 1996). The impact of positive work events on the psychological and physical health of police officers requires further investigation, so too does the possibility of positive outcomes following traumatic event exposure, such as posttraumatic growth. To do so requires a salutogenic research framework for the assessment of traumatic effects, that accommodates the possibility of a range of outcomes, from growth to distress (Paton, Violanti, & Dunning, 2000). The development of posttraumatic growth as a possible outcome of traumatic event experiences will be the focus of the following chapter.

POSTTRAUMATIC GROWTH

Introduction and Overview

The previous chapters have explored the relationship between exposure to traumatic and organizational events and negative psychological and physical health consequences. Chapter Two concerned the negative consequences of exposure to traumatic events, and there is no doubt that that this should be the first consideration given the profoundly negative sequelae that may be experienced by some people. The idea that people do experience distress as a result of negative life experiences is sound, however, this is not an inevitable consequence or the only possible effect. While the positive consequences of traumatic event exposure have received little research attention, this does not mean that they have been entirely overlooked. A body of literature does exist suggesting that some people may find some good emanating from their traumatic experiences.

There may be some people for whom distress coexists with positive feelings, or others who feel that the experience that they survived has actually enhanced their life; that they have not just regained their equilibrium, but rather, feel that they are better off than before. This is not to say that all people will experience growth outcomes, as such changes may be common, but they are not inevitable, and even if growth outcomes are reported, this does not mean that all negative outcomes are eliminated (Calhoun & Tedeschi, 2000). Research on positive outcomes is detailed, and models that explain the posttraumatic growth perspective are described. The chapter concludes with a discussion of the relevance of posttraumatic growth to police officers and the New Zealand Police Organization.

Positive Consequences of Traumatic Event Exposure

Recently researchers have begun to take a new look at the whole traumatic exposure and psychological effect relationship. The clinical/psychiatric roots of traumatic event research have led to assumptions that traumatic event exposure will induce intense fear, helplessness, or horror on behalf of the person involved. This is a defining aspect of trauma definition; required for a diagnosis of PTSD (APA, 1994). However, is it always the case that traumatic events will induce only negative reactions? Disaster and trauma professionals have recognized alternative outcomes as they focus on traumatic event research. It appears that resilience mechanisms may increase the likelihood of personal growth experiences following exposure to traumatic events (Paton, Violanti et al., 2000; Paton et al., 2002). Officers may feel that, despite the horror, they did their best, that they have assimilated the experience, learnt from it, and perhaps gained a better understanding of themselves and how they relate to others. The possibility of positive outcomes following traumatic experiences is now being considered.

Research now indicates that organizational environments that allow officers the opportunity to exercise their professional skills, to have perceptions of a job well done, that have relaxed bureaucratic constraints, and provide a supportive post-trauma environment can influence the meaning attributed to a traumatic experience. It can be possible to facilitate resilience following adversity with outcomes of positive resolution and posttraumatic growth (Alexander & Wells, 1991; Anderson et al., 1991; Calhoun & Tedeschi, 2000; Moran, 1999; Paton, 1989; Paton, Smith, et al., 2000; Paton et al. 2002; Tedeschi & Calhoun, 1996; Paton, Violanti et al., 2000). It is only in recent times that this line of thought has begun to engage research interest, and yet the idea that suffering can lead to personal growth is nothing new. For centuries it has been recognized in religious teachings and secular literature that suffering can lead to personal enlightenment and spiritual growth. For example, in the Buddhism tradition an understanding of the universality of suffering is essential for developing wisdom (Tedeschi & Calhoun, 1995).

Researchers in psychology have largely overlooked the possibility of positive consequences following traumatic event exposure. Aldwin, Levenson, and Spiro (1994) in their study of the vulnerability and resilience of veterans to combat exposure, consider there have been several shortcomings in current theories of stressors and stress that have prevented the impact of stressors being perceived in a positive light. Firstly, many investigators have used outcome measures such as self-reported affect (usually negative) and physical symptoms that decrease rapidly; meaning that these outcomes measure very short-term effects. Secondly, this continues despite it being generally recognized that major trauma, such as child abuse, rape, or combat exposure may have long-term consequences. Thirdly, even with major trauma, negative affect and symptoms do not completely describe the constellation of possible stress effects (Aldwin et al., 1994).

Violanti et al. (2000) raised by in their recent book another possible reason for the belated recognition in psychological research of the full spectrum of responses engendered by traumatic experiences. These researchers considered that the mental health context in which psychological outcomes have been viewed has lead research and treatment to focus on negative pathological reactions. This focus on negative reactivity has resulted in the development of assessment instruments and procedures capable of assessing only negative outcomes. Although there may be positive consequences following traumatic event exposure, these are not apparent, as they have not been looked for. The authors commented that, because of this, it was not surprising to find the incidence and importance of positive growth outcomes has lagged behind its pathologically orientated counterpart. Although the clinical or psychiatric approach is important regarding research and intervention considerations, this approach has lead to the potential for positive outcomes to be largely ignored.

Positive Consequences Following Traumatic Events Exposure

While the positive consequences of traumatic event exposure have received little research attention, this does not mean that it has been entirely overlooked. A body of literature does exist suggesting that some people may find some good emanating from their traumatic experiences. Some researchers in the field have explored the possibility of positive sequelae to traumatic events. Taylor, Wood, and Lichtman (1983) studied

the victims of life-threatening attacks, illness, natural disasters, and other such events. They suggested that not only do the majority of people exposed to these events appear to overcome the victimizing aspects of these situations, but also in some cases they seem to have actually benefited from the experience. They argued that while there will be some people who do not readjust successfully, most do, and they do so substantially on their own. Some individuals may even report an improved quality of life as a result of the experience. The ability to find good from harm often takes the form of finding meaning from the experience and one of the ways this is done is by learning from the experience. Taylor et al. (1983) considered that the search for meaning involves not only understanding why the event occurred, but also what the implications are for life from then on. This can entail a rethinking of attitudes and priorities to restructure life along more satisfying lines.

Janoff-Bulman (1989a) explored individuals' psychological responses to traumatic events. From her perspective, traumatic events shatter individuals' basic assumptions about the world; and their feelings of invulnerability, unchallenged prior to the traumatic event, are shown to have been illusions. Janoff-Bulman commented, however, that there is a great deal of variability in people's reactions to a traumatic event. Some will be completely unable to reestablish any positive illusions their lives characterized by low motivation, depression, anxiety and hopelessness. However, most manage to retain or re-establish a positive view of the world and themselves, while simultaneously recognizing the limitations of these beliefs. One way they do this is by looking for benefits that can be derived from the situation. They speak of a new appreciation for life, recognition of what is really important, and a new sense of their own importance (Janoff-Bulman, 1989b).

Collins et al. (1990) interviewed 55 cancer patients about changes in their lives following diagnosis. They found that while respondents reported both positive and negative changes following cancer, overall the respondents reported significantly more positive changes in their lives. The most common changes regarding activities or priorities were; living for the day or appreciating life, and doing things now instead of waiting. Regarding relationships, the most common changes were: becoming more sensitive to

others feelings; becoming more sympathetic and compassionate; and putting more time and effort into relationships.

Aldwin et al. (1994) hypothesized that the undesirable effects of military experience would increase with the intensity of combat experience, and that there would be an inverted-u function for desirable effects; both low and high exposure to combat would result in lower levels of desirable effects than moderate exposure. They developed a deviation-amplification model in which both positive and negative outcomes can result from the same stressor. They suggested that perceived positive and negative military experiences would both mediate and moderate the relationship between combat exposure and PTSD symptoms. That is, perceiving negative effects of military service (e.g., combat anxieties, loss of friends, or death and destruction) would lead to higher levels of symptoms, whereas perceiving positive benefits (e.g., increased independence, self-esteem, or coping skills) would lead to lower levels.

The researchers tested these hypotheses with 1,287 male veterans and found that the veterans perceived both positive and negative consequences of their military service. However, more weight was given to the positive than the negative, with both increasing linearly with combat experience. Undesirable effects increased, and desirable effects decreased, the relationship between combat exposure and PTSD (Aldwin et al., 1994). Although initially highly adverse, combat exposure did not preclude the experience of positive consequences over time. It appeared that both positive and negative sequelae coexisted in some complex pattern. Aldwin et al. suggested that once the possibility of positive outcomes to stressors was admitted, this results in a variety of other research topics to consider. For example, the ecological and psychological variables that led to a preponderance of positive or negative consequences of stress, the psychological processes by which stress or extreme trauma results in growth, and the ways in which the process can be facilitated.

McMillen, Zuravin, and Rideout (1995) investigated aspects of perceived benefits from childhood sexual abuse. The women in this study reported benefits in four main areas: they could protect their children from sexual abuse; they could protect themselves; they had increased knowledge of child sexual abuse; and they had grown stronger as people.

The results from this study suggested that those women who perceived some benefit from their childhood sexual abuse were doing somewhat better than those who did not. The authors considered that if future research warrants it, clinical approaches could be developed to help those who are sexually abused to explore ways in which their lives may have improved.

Disaster research has highlighted possible changes for the better in people's lives following traumatic events. Joseph, Williams, and Yule (1993) studied survivors of the Herald of Free Enterprise disaster, and found that many were still traumatized three years later. However, an interesting finding was that 83% of the survivors reported that they felt more experienced about life, and over half rated their life as changed for the better. This suggested that disaster responses could be both positive and negative. The authors extended their findings into the development of a measure to assess positive and negative responses to changes in outlook following disaster. This measure was then given to adult survivors of the sinking of the cruise ship Jupiter. To their surprise, the authors found that most of the survivors reported strong positive changes in their outlook on life. Over 90% agreed that they no longer take life for granted, that they value their relationships now, and that they no longer take people or things for granted. Nobody agreed that life had no meaning now, and only 6% agreed that they felt dead from the neck downwards. Overall, negative responses had far fewer endorsements than positive responses.

This raised the question as to whether a person could simultaneously experience both positive and negative changes in outlook. Joseph et al. (1993) considered disaster research to be constrained by its focus on maladaptive behaviours. If both positive and negative responses were identified, this would more accurately identify those at risk of long-term disturbance, as it may be that people who experience positive outcomes, as well as negative ones may be less at risk. There is some evidence that finding meaning in adversity is adaptive; Affleck, Tennen, Croog, and Levine (1987) found that men who had perceived benefits from a heart attack, were less likely to have a subsequent attack and exhibited less morbidity eight years later.

Researchers investigating the impact of exposure to traumatic events on emergency workers now consider that the impact of particularly gruesome and prolonged disasters may result in greater than three to five percent of workers experiencing long-term distress (McCammon, 1996). An interesting consideration, however, is the number of workers who work on the front line of disasters and emerge unscathed. Regarding the symptoms experienced by police officers at the site of the Lockerbie air disaster Margaret Mitchell (1990) commented, that what was surprising was not that some adverse effects were observed in these officers, but rather, that they managed as well as they did. Anderson et al. (1991) found over half the rescuers in a rail accident felt that the participating in the rescue had impacted on their lives in a positive way. This suggested to Anderson et al. that facing traumatic events did not necessarily lead to psychological morbidity, but instead may facilitate personal growth.

Stress-related growth was reported in a Swiss study of 264 people with spinal cord injuries (Znoj, 2000). This study described stress-related growth as a kind of emergency coping, which although not related to health in a direct way, could prevent worse outcomes. Growth was conceptualized as a capacity (either learned or inherited) that enabled the integration and learning of a variety of separated things (intelligence in a broad meaning). The study reported that stress-related growth was significantly and positively predicted by being female, by personal resources, by adaptive ways of coping, and by emotion regulation. This study also involved the partners of spinal cord injured people, and indicated that having personal and social resources was a prerequisite for stress-related growth.

Tedeschi, Calhoun, and colleagues (Tedeschi & Calhoun, 1995, 1996; Tedeschi, Park, & Calhoun, 1998) have reported that in over half the people who have experienced traumatic events, reconstruction of schemas produces a view of the world and related behaviour that the survivor perceives as beneficial, not only for managing the trauma, but also for living life more fruitfully than it was prior to the trauma. These researchers have reviewed studies of the aftermath of bereavement, chronic illness, HIV, cancer, heart attacks, transportation accidents, rape and sexual abuse, and hostage taking. They conclude that no matter what the traumatic event was, similar personal transformations occur. A recent study of 54 young adults, prescreened for experience of a traumatic

event (Calhoun, Cann, Tedeschi, & McMillan, 2000), found a relationship between the amount of posttraumatic growth reported and event-related rumination. The more rumination the participants reported experiencing soon after the event, the greater the degree of posttraumatic growth reported.

Posttraumatic Growth

Tedeschi and Calhoun (1995, 1996) have considered the impact of traumatic events with an approach that acknowledges the possibility of positive outcomes. They consider that the process of struggling with crises can provide the opportunity for personal growth that would not have been possible without the challenge of the traumatic event. Non-normative life events can possibly lead to a more coherent world-view, a view that might be more tolerant, more human, and more open to new thoughts. The term 'posttraumatic growth' (Tedeschi & Calhoun, 1995) entered the field of psychotraumatology. Tedeschi and Calhoun (2002) have recently described posttraumatic growth as significant beneficial changes in cognitive and emotional life beyond levels of adaptation, psychological functioning, or life awareness which occur in the aftermath of psychological traumas that challenge previously existing assumptions about self, others, and the future. The term 'posttraumatic growth' is used to make it clear that people experiencing this phenomenon have developed beyond their previous level of psychological functioning. The people do not simply survive the experience without negative effects, however, they experience themselves as *better* than they were before the traumatic event (Calhoun & Tedeschi, 1998).

These researchers (Calhoun & Tedeschi 1998, 2000; Tedeschi & Calhoun, 2002) consider that posttraumatic growth should be included as a possible consequence of the struggle with traumatic situations, and applied as an intervention strategy to assist those exposed to highly traumatic incidents. It is now becoming recognized that, despite a long history of focusing on the pathological reactions that can accompany traumatic exposure, these outcomes are not inevitable. In some cases people, groups or organizations can exhibit resilience mechanisms that enable them to bounce back to their previous level of functioning, or in some cases to exceed this and experience feelings of posttraumatic growth (Paton et al. 2002).

Theoretical Models to Explain Posttraumatic Growth

Most theorists have focused on the negative consequences that follow traumatic events. However, outside the mainstream of posttraumatic stress disorder literature, some theorists have proposed models that can incorporate positive reactions following exposure to traumatic situations. Shelley Taylor has been instrumental in the development of two cognitive models concerning these processes. The theory of Selective Evaluation (Taylor et al., 1983) proposed that victims react to victimization, which they perceive as an adverse state to themselves and others, by evaluating themselves and their situation in ways that are self-enhancing. They do this by utilizing five mechanisms of selective evaluation. These are: making social comparisons with less fortunate others (downward comparisons); selectively focusing on attributes that make themselves appear advantaged; creating hypothetical worse worlds; construing benefits from the aversive event; and manufacturing normative standards of adjustment to make their own adjustment appear exceptional. The authors commented:

“Victims of serious life-threatening attacks, illness, natural disasters, and other such events seem from their accounts not only to have overcome the victimizing aspects of their situation, but actually to have benefited from their experience” (Taylor et al., 1983, p. 20).

The theory of Cognitive Adaptation extended this perspective (Taylor, 1983). This model explained positive outcomes following victimizing events; when people experienced a traumatic event they selectively distort it to reduce the negative impact on themselves and the world, or they represent it in as non-threatening a manner as possible. When negative consequences are inevitable, the person may try to offset them by considering perceived gains from the event, such as finding meaning from the experience, or considering that they are a better person for having withstood the event (Collins, Taylor, & Skokan, 1990).

Tedeschi and Calhoun's (1995) model of posttraumatic growth focuses on positive change. However, they acknowledge that not everyone triumphs over trauma, and that transformation may also be accompanied by some distress. The basic principles of their

model are that growth occurs when people's schemas are changed by traumatic events. Schemas, or pathways of cognitive organization in the mind, are used to construct a model of the self and the world that allows the person to find the world comprehensible, meaningful, and manageable. For example assumptions of optimistic outcomes, and the occurrence of only expected events. Traumatic events expose the schema to harsh realities, and may force maturation or change in these beliefs. Cognitive processing and rumination about the event result in a more profound understanding of the self and the world. This leads to behaviours that are effective in avoiding future distress, and engaging in activities previously unconsidered or untried. As a result of the trauma, survivors consider themselves wiser and blessed, although this is paradoxically the result of loss or suffering (Tedeschi & Calhoun, 1995; Calhoun & Tedeschi, 2002). These researchers have suggested that this happens because it is not the trauma itself, but rather the persons' internal *struggle* with the event and the changes it has wrought, that is the source of posttraumatic growth. This struggle takes place internally, in the process of *rumination* (Calhoun & Tedeschi, 1998).

Three main trends are evident in these models of positive consequences following traumatic event exposure. Firstly, that ecological or psychological variables may lead to a preponderance of positive or negative consequences, which is the Aldwin et al. (1994) perspective. Secondly, that most people do readjust successfully following traumatic event exposure by finding perceived gains from the experience, which is the Taylor et al. (1983) perspective. And thirdly, that many people experience enhanced feelings of personal growth and development following traumatic events by finding meaning and understanding from the experience, which is the Janoff-Bulman (1989a, 1989b) and Tedeschi and Calhoun (1995) perspective. Researchers, who have allowed for the possibility of positive sequelae following traumatic events in their studies, have invariably found some evidence of positive outcomes. Beverley Raphael (2000) recently commented that it is a battle to overcome the representation of trauma as entirely negative, and yet pathology following even bereavement is not common, with only nine percent of the bereaved going on to show severe bereavement symptoms.

As Tedeschi and Calhoun point out, however, this does not imply that negative consequences that commonly accompany traumatic exposure do not occur.

Posttraumatic growth does not mean that the individual will be free of the potentially negative consequences of trauma. Growth is not guaranteed and it will not necessarily eliminate the pain. This point is illustrated with a quote from a father reflecting on the death of his son:

“If I could choose, I would forego all of the spiritual growth and depth which has come my way because of our experiences, and be what I was fifteen years ago, an average rabbi, an indifferent counselor, helping some people and unable to help others, and the father of a bright, happy boy. But I cannot choose” (Viorst, 1986, p. 295; cited in Tedeschi & Calhoun, 2002).

The posttraumatic growth perspective acknowledges that stress/traumatic stress consequences follow traumatic exposure, for example, fluctuations in cortisol levels or feelings of depression and sadness. However, given time for sufficient rumination these reactions may recede or be accompanied by feelings of personal growth. Trauma may engender both negative and positive consequences, and Tedeschi and Calhoun (2002) argue that posttraumatic growth occurs in perhaps 30% to 100% of survivors of various kinds of trauma.

Posttraumatic Growth in the Police

The above research into traumatic event outcomes has recognized the possibility of positive as well as negative outcomes. This is relevant to New Zealand police officers because they are engaged in an occupation in which they are likely to be exposed to potentially traumatic situations that will be extremely stressful and possibly life-threatening. However, the research discussed in the present chapter has indicated that exposure to traumatic events may generate positive outcomes, although this does not imply a lack of negative consequences. It does appear likely that most people exposed to traumatic situations can find some good emanating from the experience. What is surprising is that some people may even feel that the struggle to come to terms with the traumatic event has resulted in significant positive changes; that they feel better off than before the event. Within the police profession these could encompass such outcomes as an enhanced sense of professionalism, an opportunity for spiritual growth, stronger

emotional bonds with significant others, and a heightened awareness to live life to the full (Paton, 1996b).

To date, little research attention has been paid to the possibility that New Zealand police officers may experience positive outcomes following traumatic experiences. McDowell (1997) in her study of New Zealand police officers, reported some officers perceived positive aspects of disturbing work-related events. The most frequently reported positive event characteristic was 'personal satisfaction and feeling good about the job', followed by 'gained confidence and experience'. Overall, the acknowledgment of positive outcomes was very limited. McDowell (1997) commented that this could have been due to the focus of her research being police perception of traumatic events, an area that already carried negative connotations. The interview format she used could have been another reason. The officers spent between half an hour, to an hour, discussing their most traumatic experiences, and then were asked to identify the positives they were able to take away from the incidents. It was probably very difficult for the officers to suddenly switch from the negative to the positive.

Unfortunately police officers are, and will continue to be, exposed to a variety of traumatic events. Some individuals will grow in the traumatic event aftermath; others will develop psychological and physical problems. An understanding of the depth and scope of these responses is required. The possibility that New Zealand police officers may experience positive reactions from their police work experiences has yet to be explored in depth. However, studies that have looked for benefits have found them, although difficulties are reported as well. Benefits have included learning from the experience, appreciating life more fully, valuing relationships more, and recognizing what is really important in life. To assume that traumatic exposure produces only trauma ignores the reality that many individuals value their traumatic event as a learning and growth experience (Dunning, 1999). For example, those members of professional groups who respond to disasters or traumatic situations can, under certain circumstances, find the experience rewarding or satisfying (Andersen et al., 1991; Raphael, 1986).

HYPOTHESES AND RESEARCH PREDICTIONS

The Hypotheses and Research Predictions

Hypothesis one: traumatic events are positively related to traumatic stress outcomes, as measured by the IES. It is predicted that the more traumatic events an officer encounters, the greater their traumatic stress outcomes will be. Higher scores on the IES reflect increased traumatic stress outcomes in terms of the two most common symptoms of PTSD: avoidance behaviors, and problems with intrusive thoughts.

Hypothesis two: traumatic events are positively related to posttraumatic growth, as measured by the PTGI. As the previous hypothesis indicated encountering traumatic events is predicted to have negative effects on recruits' psychological health outcomes. While not discounting the previous hypothesis, this hypothesis predicts that there also can be positive effects to psychological health stemming from these experiences. It is predicted that as traumatic events increase so too will posttraumatic growth. The higher the number of traumatic events experienced, the more the officer will correspondingly exhibit feelings of posttraumatic growth. The PTGI measures the feelings of new possibilities, personal strength, relating to others, spiritual change, and appreciation of life. These feeling of posttraumatic growth are expected to increase as the officer struggles with the aftermath of traumatic event exposure.

Hypothesis three: traumatic events are positively related to psychological distress outcomes, as measured by the HSCL-21, and negatively related to physical health outcomes. The negative effects of encountering traumatic events are not confined only to traumatic stress symptoms. It is also predicted that there will be a corresponding rise in symptoms of psychological distress following traumatic event exposure.

The HSCL-21 provides measures on general feelings of distress, somatic (body) distress and performance difficulty. It is predicted that these symptoms of distress will rise as officers encounter traumatic events. A further prediction is that physical health will decline as the number of traumatic events encountered rises. Traumatic events will have a negative relationship to physical health, as they go up health scores will go down.

Hypothesis four: organizational stressors moderate the relationship between traumatic events and traumatic stress symptoms, as measured by the IES, such that the higher the number of organizational stressors reported, the stronger the relationship between traumatic events and IES outcomes. Organizational stressors will affect the relationship between traumatic events and traumatic stress symptoms and will worsen the impact of traumatic events on the officers' psychological health outcomes. This will be evidenced by increased traumatic stress symptoms. Officers may suffer traumatic stress as a result of experiencing traumatic events, however, their chances of this happening will increase if they also experience organizational stressors. The organizational stressors act as a moderator variable on the relationship between the experience of traumatic events and traumatic stress outcomes. The moderator variable (the number of organizational stressors encountered) is predicted to increase the strength of the relationship between the independent variable (traumatic events) and the dependent variable (traumatic stress outcomes).

Hypothesis five: organizational stressors are positively related to psychological distress outcomes, as measured by the HSCL-21, and negatively related to physical health outcomes. It is predicted that as organizational stressors increase so too will levels of psychological distress symptoms. This is a positive relationship, as organizational stressors increase there is predicted to be a corresponding rise in levels of psychological distress symptoms. As the organizational stressors increase it is also predicted that the officers' physical health scores will decrease. Organizational stressors act to decrease physical health scores and this is a negative relationship; as stressors increase physical health scores go down, indicating that physical health has decreased.

Hypothesis six: organizational uplifts moderate the relationship between traumatic events and traumatic stress outcomes, as measured by the IES, such that the higher the

number of organizational uplifts reported, the weaker the relationship between traumatic events and IES outcomes. Organizational uplifts have the opposite effect to organizational stressors on the traumatic events/traumatic stress relationship (see hypothesis four). Whereas organizational stressors are predicted to moderate the relationship by increasing the impact of traumatic events on the officers' psychological health as evidenced by higher traumatic stress symptoms, uplifts are predicted to weaken the impact of the traumatic events on officers psychological health as evidenced by a lower traumatic stress symptoms. This does not imply, however, that the impact of high numbers of traumatic events will be entirely counteracted by high numbers of organizational uplifts. This would imply a mediating relationship that is not predicted.

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counter

Hypothesis seven: organizational uplifts are negatively related to psychological distress outcomes, as measured by the HSCL-21, and positively related to physical health outcomes. This hypothesis predicts that uplifts will have the opposite affect to stressors (see hypothesis five) on officers' psychological distress outcomes and on their physical health outcomes. This hypothesis predicts that as organizational uplifts go up there will be a corresponding decrease in levels of psychological distress. This is a negative relationship, as levels of uplifts go up it is predicted that levels of psychological distress symptoms will decrease. However, the effect of uplifts on physical health is in a positive direction. As uplifts increase it is predicted that officers' physical health scores will increase, indicating that physical health has improved.

11 *Hypothesis eight: organizational stressors are more positively related to psychological distress outcomes, as measured by the HSCL-21, than are traumatic events.* Previous hypotheses predicted that both traumatic events and organizational stressors will have a detrimental effect upon recruits' psychological health and that both will be associated with increased levels of psychological distress (see hypotheses three and five). This hypothesis predicts that the organizational stressors will have a stronger impact on the officers' levels of psychological distress, greater than the impact of traumatic event exposure.

The aim of this study is to investigate the impact of traumatic event exposure and organizational events (stressors and uplifts) on measures of the recruits' psychological

and physical health. This study will evaluate relationships between police traumatic events and health outcomes in an organizational context. The research predictions are discussed in relation to these constructs.

Traumatic Stressor Research Predictions

The impact of traumatic stressors (police traumatic events) on police recruits' psychological and physical health will be a focus of this study. Firstly, the impact of police traumatic event exposure is expected to directly relate to increased symptoms of psychological distress and traumatic stress. The research predictions are that traumatic events are positively related to traumatic stress outcomes, as measured by the IES (hypothesis one), and positively related to psychological distress symptoms, as measured by the HSCL-21 (hypothesis three). Secondly, it is predicted that traumatic events are negatively related to physical health outcomes (hypothesis three).

The moderating effects of negative and positive organizational variables (stressors and uplifts) on the relationship between police traumatic event exposure and traumatic stress outcomes are examined. As well, a comparison will be made of the impact of traumatic stressors and organizational stressors on the recruits' psychological distress outcomes. The research prediction is that organizational stressors are more positively related to psychological distress outcomes, as measured by the HSCL-21, than are traumatic events (hypothesis eight).

Organizational Stressors Research Predictions

This study will examine the relationships between traumatic events and psychological health outcomes in an organizational context. Firstly, by investigating the research prediction that organizational stressors will moderate the relationship between traumatic events and traumatic stress symptoms, as measured by the IES, such that the higher the number of organizational stressors reported, the stronger the relationship between traumatic events and IES outcomes (hypothesis four). Secondly, this study will investigate the possibility that organizational stressors are positively and directly related to symptoms of psychological distress, by investigating the research prediction that organizational stressors are positively related to psychological distress outcomes, as measured by the HSCL-21 (hypothesis five). Thirdly, as mentioned above, the

prediction that organizational stressors, rather than traumatic stressors, have a stronger impact on officers' psychological distress levels will be examined. The research prediction is that organizational stressors are more positively related to psychological distress outcomes, as measured by the HSCL-21, than are traumatic events (hypothesis eight).

Organizational Uplifts Research Predictions

The first organizational uplifts research prediction is that organizational uplifts will moderate the relationship between traumatic events and traumatic stress symptoms, as measured by the IES, such that the higher the number of organizational uplifts reported, the weaker the relationship between traumatic events and IES outcomes (hypothesis six). Secondly, this study will investigate the possibility that organizational uplifts are negatively and directly related to symptoms of psychological distress. The research prediction is that organizational uplifts are negatively related to psychological distress outcomes, as measured by the HSCL-21 (hypothesis seven). Thirdly, this study will investigate the possibility that organizational uplifts are positively and directly related to physical health outcomes, with the research prediction that organizational uplifts are positively related to physical health (hypothesis seven).

Posttraumatic Growth Research Predictions

At present there is a paucity of data concerning the positive impact of traumatic stressors upon the psychological health of New Zealand police officers. An obvious reason for this situation is that positive outcomes have not been looked for. The present study will examine the relationship between traumatic stressors and posttraumatic growth in an organizational context by investigating the research prediction that traumatic stressors are positively related to posttraumatic growth (hypothesis two).

Gender Effects in the Police

Although women have worked with the police in New Zealand since 1898 they did not achieve employment parity with male officers until 1973. Previously it had been considered that women were physically and temperamentally unsuited to the rigors of police work. Since gaining parity with male officers this assumption appears dubious;

with few differences reported in the way male and female officers perform their tasks and view their departments (Worden, 1993). In the past, due to the under-representation of women in the police, most police research focused on male officers (Brown & Fielding, 1993). However, as women are now drawn into the full range of police duties with increasing representation of women as sworn officers, there is increasing interest in the stress reactions of female police officers. Numbers are now high enough to be able to examine the interaction between police duties and gender, and measures of health.

Wexler and Logan (1983) interviewed 25 women officers from a large metropolitan police department in California. They examined sources of stress among women police officers. In the study five categories of stressors were examined:

1. External stressors (frustration with the courts, media, negative public attitudes).
2. Organizational stressors (this included poor pay, excessive paperwork, inadequate training and equipment, changing shifts, limited promotional opportunities, unfair policies, and lack administrative support).
3. Task-related stressors (exposure to tragedy, fear, and danger).
4. Personal stressors (health and marital problems, peer group pressure).
5. Stressors peculiar to women police officers (attitudes of policemen to female officers, rumors, or harassment).

The authors found that organizational stressors and stressors associated with being woman in male dominated departments were the most common responses. Inadequate training, rumors in the department, and lack of promotional opportunities were mentioned most frequently. Wexler and Logan did not interview male officers, and did not measure the intensity of the perceived stressors.

A study by Davis (1984) of policewomen in Texas and Oklahoma, found that female officers did not experience any more general job-related stress than males in the same departments ($N = 2,293$). There were also no differences found by Brown and Fielding (1993) in reported felt stress levels from their study in England. This was a qualitative study of officers from a large provincial police department; 394 officers were male, 174 female. Organizational and operational stressors were generated from open-ended interviews. Felt stress was measured by means of a four-point scale measuring degrees

of 'unpleasant impact'. Results indicated that the profile of exposure to organizational stressors was similar for men and women officers with relatively few gender differences.

Bartol, Bergen, Seager Volckens, and Knoras (1992) reported a similar finding in their study of women in small-town policing. The authors interviewed 30 men and 30 women officers from police departments throughout Vermont. Scores were obtained on the MMPI (Minnesota Multiphasic Personality Inventory), supervisory-perceived stress, and self-reported stress. The authors reported that, to a large extent, both male and female officers experienced the same stressors. The exception was task-related stressors (stressors inherent to the nature of police work; e.g., inactivity, boredom, frequent exposure to violent individuals, encounters with death). Women reported more stress over these task-related stressors. However, this stress was not translated into poor performance, although the women indicated that they were strongly affected by the tragedy, pain, and death they encountered in police work. Inwald and Shusman (1984) examined gender differences with enforcement officer recruits in England using IPI (Inwald Personality Inventory) and MMPI raw scale scores. Data were obtained from 1,887 male and 520 female candidates. It appeared in general that women more often endorsed items indicating emotional or behavioral difficulties. Women correction officer candidates were distinguished from men by their admitted anxiety and internal conflicts.

The present study provides the opportunity to assess gender differences regarding the study measures. One quarter of the recruit sample are women, and this is large enough to satisfy Tabachnick and Fidel's (1989) minimum 10/90 split, therefore statistical analysis for gender comparisons can be examined. Health effects, traumatic stress effects, and psychological distress outcomes, and the effect of daily organizational stressors and uplifts will be evaluated over a one-year period for gender differences. The methods used to examine the research predictions are described in the following chapter.

Chapter Seven

METHOD

Overview

This chapter describes the methods used to test the study research predictions. A longitudinal design with baseline and repeated measures is chosen to improve on the cross-sectional method of much of the previous traumatic event research. Data is obtained from two self-report questionnaires completed by New Zealand recruits at the start and end of their first year in the police. Baseline data at time of entry (Time 1) provides a measure of exposure to previous traumatic events, as well as levels of traumatic and psychological distress symptoms that prevail within the recruit population at the time they enter the police. One year later (Time 2) the officers are reassessed on the earlier measures and also scored for posttraumatic growth. By then the impact of police organizational events can be determined. This chapter describes the research design, participants, the questionnaires, and the measures. Ethical concerns are discussed and the procedure for data collection is described.

Research Design

The aim of this research was to investigate the impact of exposure to traumatic events and the impact of the police organizational environment, upon the psychological and physical health of early career New Zealand police officers. The possibility of positive as well as negative outcomes was allowed for. A two-year longitudinal repeated measure within-subjects research design was utilized. Two questionnaires were developed to test the hypotheses. Because of the longitudinal design a minimum of two sampling points

was required so that pre- and post-measures could be obtained. Entry baseline data was obtained from New Zealand police recruits as they commenced their training, and follow-up data was obtained one year later. By this time the officers had finished their 22 weeks training, and had seven months experience of operational duties as probationary constables. This allowed the assessment of police traumatic and organizational experiences.

Longitudinal Design Rationale

There are few longitudinal studies of occupational stress (Murphy, Hurrell, & Quick, 1992). Studies of stress and trauma have typically utilized cross-sectional methods, often targeting individuals who have experienced a particular traumatic incident, for example rape, violent death or child abuse. While this information is valuable, it fails to provide an adequate view of the complexity of these phenomena, and most importantly for the police population, it does not allow for the impact of changes over time as the officers become immersed in the police profession. Organizational stressors combined with the impact of traumatic experiences, can have a cumulative effect on well-being. Given that such variables may not impact at the same time, the 'snapshot' view determined by cross-sectional studies can give an abbreviated view of the nature and influence of these variables (Huddleston et al., 2000). While a negative response may often accompany exposure to a traumatic event, over time the meaning imposed upon the event may result in outcomes of posttraumatic growth and resilience (Calhoun & Tedeschi, 2000; Carlier, 1999; Carlier & Gersons, 2000). With these issues in mind a longitudinal design was chosen.

The repeated measures design allowed baseline data to be compared to that obtained from the officers after one year of police work, and this precluded the overestimation, or underestimation of the degree to which police work and traumatic exposure affect psychological morbidity. This provided an appropriate starting point for an objective analysis of the etiology of police distress and traumatic reactions. Without baseline data, post-event measures of traumatic effects would give an inaccurate, and probably exaggerated picture of the impact of the events upon the officers' psychological health. Paton and Smith (1996) have suggested that multi-wave longitudinal designs that allow

specific experiences to be analyzed within the context of individuals' life experiences represent a more appropriate basis for the analysis of traumatic stress in professions characterized by multiple exposures. These authors consider event impact should be defined as post-event scores minus baseline levels.

It was anticipated that the recruits would enter Police College with some history of previous traumatic event exposure. Indeed, the present study found that only 17% of recruits indicated that they had *not* experienced any traumatic events prior to starting Police College. Entry data (at Time 1) provided an approximate measure of the levels of traumatic stress and psychological distress prevailing within this population, and subsequent experiences could be assessed against this baseline. This avoided using general population norms for the police recruit population. This was important, as there are several important differences between members of the general population and police officers. Firstly, police recruits elect to enter the profession with some knowledge that it will expose them to emotionally demanding traumatic events. Secondly, they know that they will engage in work that assists the public and possibly saves lives as well. Thirdly, they receive training, to some extent, to prepare for the work.

When assessing the impact of traumatic events it is important to separate the emotional impact of the events (e.g., traumatic stress symptoms), from the meaning that may subsequently be imposed (e.g., feelings of posttraumatic growth). Consequently, it was not assumed that the traumatic events the recruits encounter during the course of their police careers would always elicit pathological reactions (Huddleston et al., 2000). Most of the previous research of traumatic stress in high-risk populations has come from the study of individuals who have been exposed to an isolated traumatic incident (e.g., rape). The majority of this research has explored related pathology; this may not be appropriate for duty-related populations (Paton, Smith, & Stephens, 1998). This study will evaluate the possibility that traumatic events can have salutogenic consequences, in terms of posttraumatic growth development.

Participants

Every recruit (693 officers) who entered Police College over the one year period September 1990 to September 1998 was personally invited to participate in this study. Five hundred and twelve out of 693 recruits (74%) chose to participate in the study and completed the Recruit Questionnaire. Five hundred and three of these 512 officers were resurveyed a year later with the follow-up Officer Questionnaire (nine recruits had left the police during the intervening year).

Demographic profile of the total cohort

The New Zealand Police Organization supplied data on the demographic characteristics of the total cohort of officers ($N = 693$) who entered the Police College over the one-year period of this study. Data was available on age, gender, and ethnicity, but not available on marital status or educational qualification. The demographic characteristics were as follows:

- *Age*: mean 27 years (range 19 - 45 years).
- *Gender*: 522 male, 172 female.
- *Ethnicity*: 70 Maori, 599 European, 23 Pacific Islander, and two Other.

The demographic characteristics of the recruits who completed the Recruit Questionnaire, and those of the subset of recruits who also completed the Officer Questionnaire were determined (see Results, p.97-99). The characteristics of the samples and the total cohort were discussed and compared regarding the generalizability of the study findings (see Discussion, p.196-198).

The Questionnaires

As large samples of police officers were to be surveyed questionnaires were used for both the initial survey and the follow-up. Questionnaires are a cost effective alternative to the other major instrument for conducting this type of field research; the structured interview. Due to the large number of officers per intake ($M = 87$), individual interviews

would have been a very time consuming process, and accordingly unacceptable to Police College personnel.

Pilot Testing

The questionnaires were discussed with the members of the police administration, police health services, recruits, and police officers to determine whether the material they contained was appropriate to New Zealand police officers in their first year of duties. Minor changes to the wording of several Hassles Scale items were made (see p.91). Colleagues, friends, and police officers filled in the questionnaires to determine how easy the instructions were to follow. Some small changes to the layout were made, including making some text bold, and underlining some instructions. No changes were made to the layout or instructions of standardized tests.

The Recruit Questionnaire

The Recruit Questionnaire (see Appendix A) was the first questionnaire used in this study. The aim of this questionnaire was to obtain baseline data and investigate the affects of prior exposure to traumatic events on the recruits' current psychological health. The questionnaire provided details of the study and contact numbers for the researcher (see Appendix B; Recruit Questionnaire Information Sheet). The questionnaire asked for biographical details on the recruits age, gender, marital status, ethnicity, and highest educational qualifications. Physical health was assessed with a self-rated physical health question (Idler & Kasl, 1991), and mood states were assessed the Positive Affect Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). Traumatic experiences were assessed with the Traumatic Stress Schedule (Norris, 1990). Respondents were asked to describe the worst thing that had ever happened to them. Traumatic stress symptoms (avoidance/intrusion) were assessed with the Impact of Event Scale (Horowitz et al., 1979). Psychological distress symptoms were measured with the Hopkins Symptom Checklist-21 (Green et al., 1988).

Order of the measures: the questionnaire was designed to flow in a logical progression from an easy starting point (the demographics, physical health question, and the mood

items), to the section that was possibly the most emotionally demanding (the incidence of traumatic events and the assessment of traumatic stress symptoms). The questionnaire concluded with the assessment of psychological distress symptoms.

The Officer Questionnaire

The Officer Questionnaire (see Appendix C) was designed to allow re-measurement of the initial constructs as presented in the Recruit Questionnaire. The questionnaire contained information about the study and contact details for the researcher (see Appendix D; Officer Questionnaire Information Sheet). The recruits were asked if they had seen a psychologist under the trauma policy. The Traumatic Stress Schedule (adapted) (Norris, 1990) measured police traumatic event exposure. Posttraumatic growth was measured with the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996). Organizational subscales of the Police Daily Hassles and Uplifts Scales (Hart et al., 1993) were introduced to evaluate the impact of daily organizational work events.

Order of the measures: this questionnaire was also designed to give the respondents an easy start. The questionnaire commenced with the questions on mood and health that were simple and easy to fill in. The respondents were then asked if they had seen a psychologist under the trauma policy. This question was followed by possibly the most demanding section of the questionnaire, the measures for traumatic event exposure and traumatic stress symptoms. At this point, a new aspect of this study was introduced, the assessment of posttraumatic growth outcomes following traumatic exposure. This section concluded with the psychological distress measure. The final section of the questionnaire evaluated the impact of the daily police organizational events. Negative items (organizational stressors/hassles) were listed first, followed by positive items (uplifts). This allowed the respondents to conclude the questionnaire on a positive note.

Ethical Concerns

This study gained ethics approval from Massey University Human Ethics Committee (HEC97/85). Each participant was assured verbally, and in writing, of confidentiality (see Appendices B & D; Information Sheets). No recruit would be personally identified in the study, and the New Zealand Police Organization would receive results only in summarized or statistical form. It was stressed that participation in the study was voluntary. For follow-up purposes only the police Query ID (QID) code identified the recruits. The QID consists of the first letter of the officer's first name, followed by the first letter of their last name, and followed by the four letters from their shoulder band. This provides a six-digit code for each officer, and enabled the Police Organization to provide locations details for the recruits.

A proposal detailing the intended research was submitted to the New Zealand Police National Headquarters, and approval for the study was gained from the Chief Medical Advisor, New Zealand Police National Headquarters, on the 2 May 1997.

Procedure

The first phase of this study was the distribution by the researcher of the Recruit Questionnaire to all recruits as they entered the Police College over a one-year period. One year later the second stage of the study commenced. Officers who had completed the first questionnaire were sent the Officer Questionnaire to their various police stations throughout New Zealand. Because the recruits entered the Police College in intakes throughout the year, data collection proceeded in a sequential fashion. Each intake was re-measured one year following their admission to Police College. Data collection thus spanned a two year six week period (see Figure 7.1).

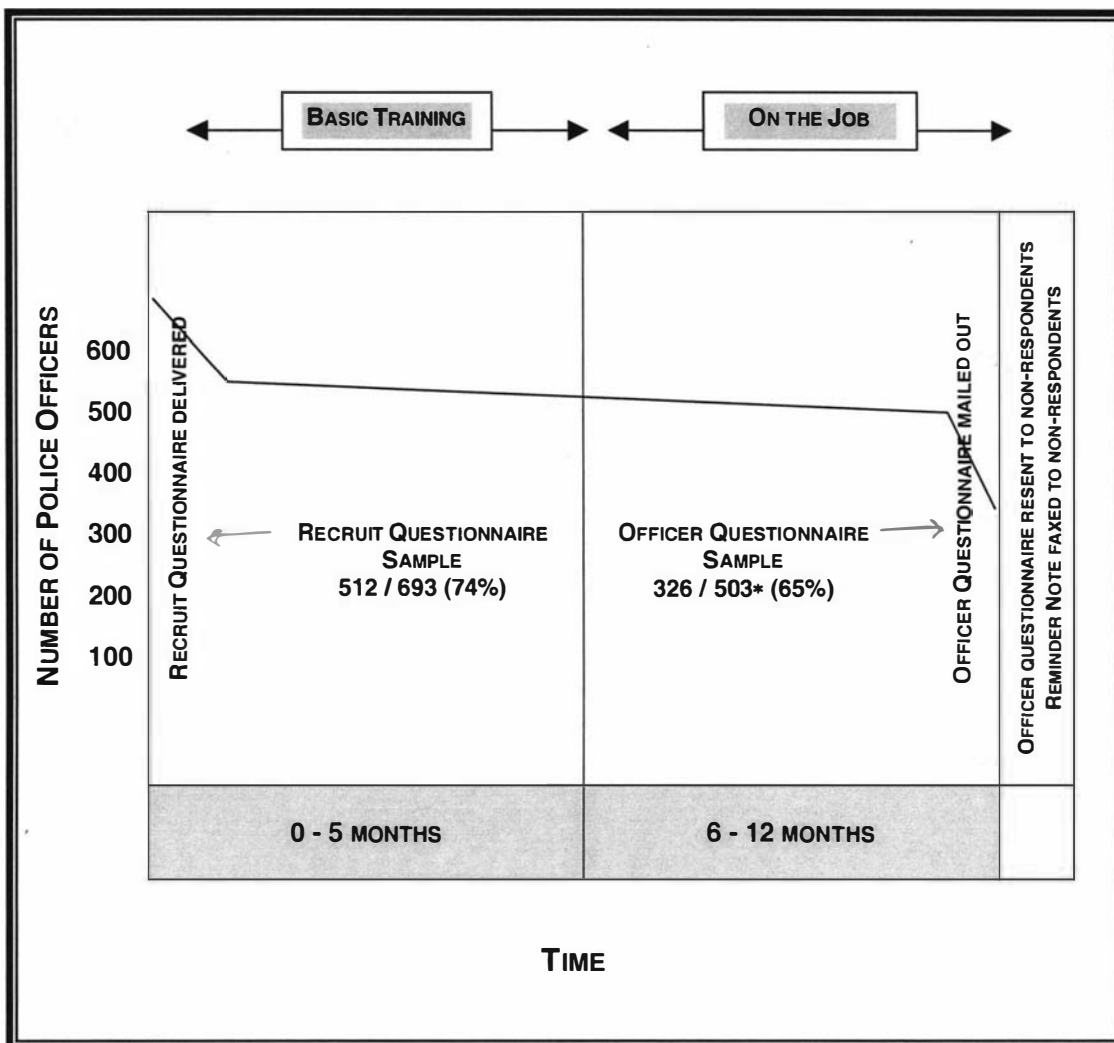


Figure 7.1. Schedule of assessment per intake.

Note *Indicates nine officers from the Recruit Questionnaire sample left the police.

Phase One of the Study (Distribution of the Recruit Questionnaire)

Over the first year of this study (September 1997 to September 1998) 693 recruits commenced training in eight intakes (Wings). The intakes had between 79 to 110 recruits, and occurred at approximately six-week intervals. Recruits were immediately sworn in on commencing training and were given the rank probationary constable. They were expected to stay at this rank for two years. The Police College at Porirua is the only police training facility in New Zealand and draws recruits from all over the country. The researcher visited the recruits within their second week at Police College (the first week the recruits were busy with administrative procedures). The researcher addressed each intake of recruits at the Police College lecture theater. The Recruit Questionnaire with an attached free-post return envelope was given to all the recruits.

Each intake was given the same description of the study. The researcher explained that this was a Massey University study, not a police study. The researcher pointed out that her contact details were listed in the first page of the questionnaire on the Information Sheet. The participants could remove this page if they desired. The Information Sheet was verbally summarized to the recruits and it was made clear that participation in this study was voluntary. A brief summary of the background of this research was given to the recruits.

The next issue discussed by the researcher was confidentiality. It was explained that the questionnaires were to be identified only by QID code; they would not have the recruits' names on them. This was emphasized in view of the personal and sometimes explicit information that this questionnaire could elicit. The recruits were asked to print their QID number onto the front of the questionnaire. The researcher stressed that their personal information would never be shown to any police officers, and that at the conclusion of this study the police would receive only summarized or statistical results; no officers would be identified. The recruits were asked not to discuss their responses with their colleagues as sensitive material may have been raised. The final point covered concerned the return of the questionnaire. It was explained that a sealable free-post

envelope was attached and that the questionnaire could be returned to the researcher by public post. The recruits were then asked if they had any questions.

The first three intakes of recruits were given time to fill in the questionnaires on the spot and this resulted in nearly a 100% return rate. However Intake 4 was exceptionally large with 110 officers, and the researcher decided that conditions were too cramped for the officers to be assured of privacy when completing the questionnaires. For this, and subsequent intakes the researcher left the lecture theater after she had finished talking to the recruits, thus ensuring the free-post system was used. This reduced the response rates but addressed privacy issues. See Table 7.1 for the response rates per intake.

Table 7.1

Recruit Questionnaires Returned at Each Distribution

Intake Number	Number responded / Number distributed	Percentage return rate per intake
Intake 1	88/88	100
Intake 2	86/88	98
Intake 3	80/88	91
Intake 4	56/110	51
Intake 5	57/80	71
Intake 6	36/80	45
Intake 7	53/79	67
Intake 8	56/80	70
Total intakes	512/693	74

An additional procedure was carried out with only the final intake. The officers in intake 8 who did not return the Recruit Questionnaire to the researcher within two weeks were sent a reminder letter (see Appendix E; Recruit Questionnaire Reminder Letter). Thirty-five out of 80 officers had returned the questionnaire within the first two weeks; the

reminder letter elicited a further 21 questionnaires. This data enabled independent t tests with separate variance estimates to be performed on the biographical variables, to see if there were significant differences between the two groups (i.e., those needing to be prompted versus those not). No differences were found. This issue is discussed in the Discussion (see p.198).

Four Recruit Questionnaires were received back not coded, these were not included in the recruit sample. An unsolicited questionnaire was returned following the visit to Intake 3 at Police College (the Station Officer on duty filled out a questionnaire and returned it). This questionnaire was set aside as invalid. The total return rate for the Recruit Questionnaire was 74%.

Phase Two of the Study (Distribution of the Officer Questionnaire)

Over the one-year period between questionnaires the researcher was notified that 9 officers had left the police. This reduced the recruit sample from 512 to 503. These 503 respondents were followed-up progressively intake by intake over the next year (September 1998 to September 1999) with the mailed out Officer Questionnaire (see Figure 7.2). An introductory letter was attached (see Appendix F; Officer Questionnaire Introductory Letter 1) and a sealable free-post return envelope was included.

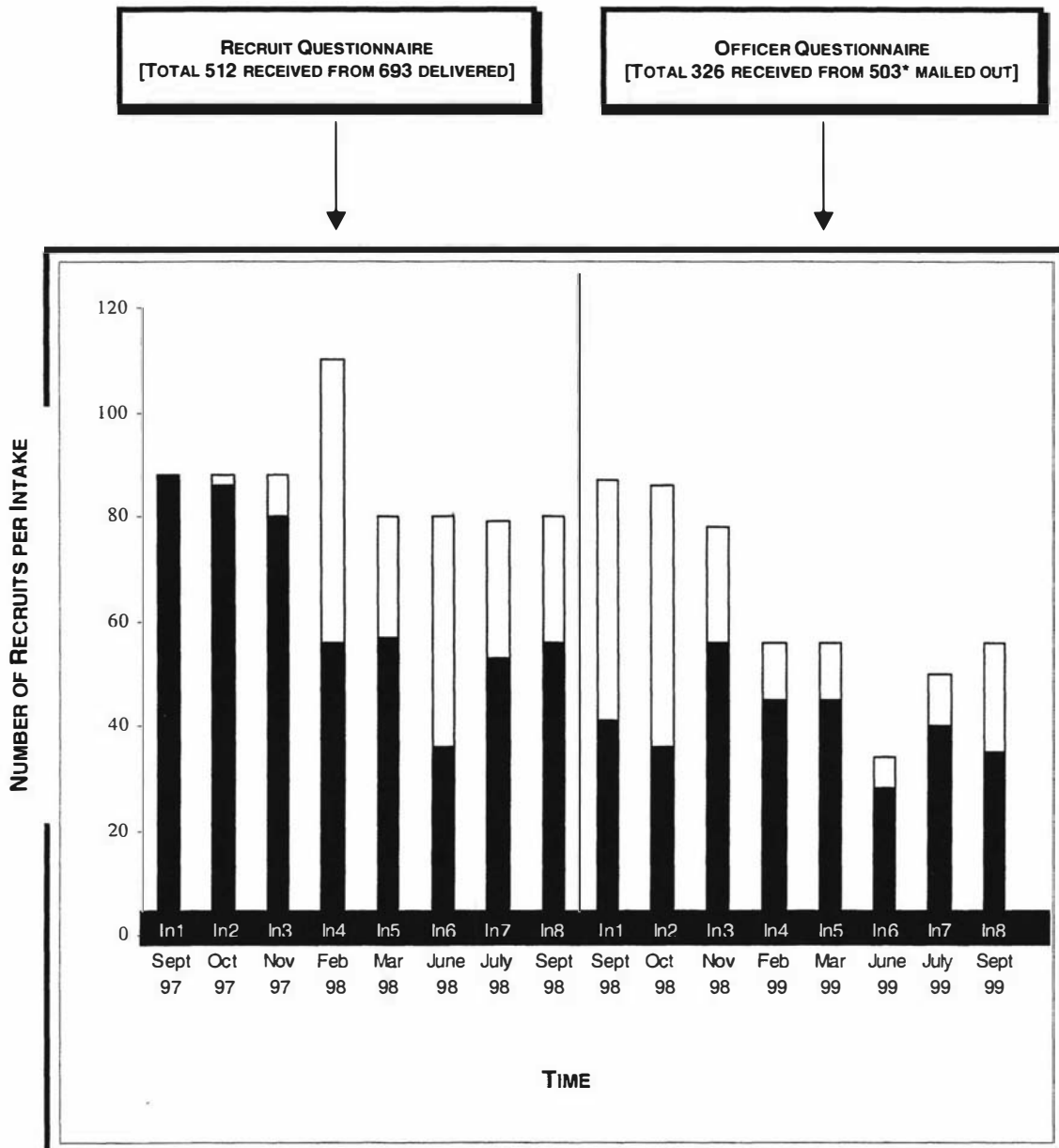


Figure 7.2. Recruit and Officer Questionnaire Response Details per Intake.

Note The symbol * indicates nine officers from the recruit sample left the police.

The symbol indicates the number of questionnaires returned, while indicates the number of questionnaires distributed.

It became apparent that the Intake 1 Officer Questionnaire response rate was low. Over the following three weeks only 17 out of 88 questionnaires were received back. A revised procedure was determined to maximize the response rate. The questionnaire was re-sent to those officers who had not responded with a new reminder letter attached (see Appendix G; Officer Questionnaire Reminder Letter). This letter began with a personal salutation (e.g., 'Hi John'). The letter pointed out that the questionnaire was being re-sent because of a low return rate. The free-post envelope was attached as before. Resending the questionnaire, rather than just a reminder letter, and personalizing the covering letter are techniques that Brennan (1992) found significantly increase return rates. This procedure elicited a further 18 questionnaires from the Intake 1 officers. One questionnaire even had the comment: "Sorry for the delay. Thanks for the reminder". Resending the questionnaires brought the response rate up to 39%. One final strategy was utilized, the non-respondents were faxed a short reminder note (see Appendix H; Officer Questionnaire Fax). Faxing the officers brought forth a further 6 returns. This brought the Intake 1 response rate up to 47%, which was satisfactory. Following the success of the redrafted reminder letter, the letter to accompany the Officer Questionnaire was redrafted along similar lines (see Appendix I; Officer Questionnaire Introductory Letter 2)

What were possible reasons for the initial poor response rate?

- Firstly, as this was a mailed out questionnaire the researcher was not able to speak to the recruits in person.
- Secondly, the questionnaire was long. It had 14 pages of questions, two of which had 32 and 33 questions respectively. Six officers mentioned either on the phone, or wrote on the questionnaire, that it was too long. They pointed out that they had to fill in the questionnaire in their own time and that they were extremely short of time. One officer wrote that he only filled in forms marked: "Urgent, due in court".
- Thirdly, police officers in general were already over-surveyed; largely due to the police initiative *Beyond 2000*.

- Fourthly, several officers remarked that over the previous year they had already received two other questionnaires sent out from other universities.
- Lastly, the first introductory letter (see Appendix F; Introductory Letter 1) was too long and not friendly enough.

In view of the above, the overall response rate was impressive.

From Intake 2 the procedure was standardized. The Officer Questionnaire was sent accompanied by the Introductory letter 2 (see Appendix I), three weeks later the questionnaire was re-sent accompanied by the Reminder letter (see Appendix G), three weeks later the non-respondents were faxed a final Reminder note (see Appendix H). See Table 7.2 for the numbers of Officer Questionnaires returned at each distribution.

Table 7.2

Officer Questionnaires Returned at Each Distribution

Intake Number	Number responded / Number distributed	Percentage return rate per intake
Intake 1	41/87	47
Intake 2	36/86	42
Intake 3	56/78	72
Intake 4	45/56	80
Intake 5	45/56	80
Intake 6	28/34	82
Intake 7	40/50	80
Intake 8	35/56	63
Total intakes	326/503*	65

Note. * indicates nine officers from the recruit sample left the police.

Seven Officer Questionnaires were received with invalid QID codes (the researcher was given incorrect QID codes for Intake 3), these were set aside. Two questionnaires had indecipherable QID codes, and three questionnaires were received with the QID codes

obliterated, these were also discarded from the study. The total return rate for the Officer Questionnaire was 65% (see Table 7.2).

Following data analysis the study results were summarized for the recruits (see Appendix J; Summary of the Study Results for the Recruits), and a report was compiled for members of the Police Organization (see Appendix K; Report of the Study Results for the Police Organization). These were sent out in 2001.

The Measures

Measurement of Traumatic Event Exposure

The Traumatic Stress Schedule (TSS)

Traumatic Stress Schedules have been utilized in many high-risk occupations to identify those employers who may be suffering adverse affects following exposure to a traumatic incident. However these schedules may under- or over-estimate the extent of individual reactions, unless, as in this study, there are baseline measures of adverse effects, and an understanding of how the environmental context may moderate these effects. The use of a traumatic stress schedule should also be accompanied by measures that tap adverse and beneficial effects; for trauma schedules relate only to the events themselves, and not the psychological experience of the events. For example, an event that eventuated as a minor assault may have been preceded or accompanied by considerable anxiety, uncertainty, or threat that could psychologically affect the individual. It is important to also be aware that events that may be threatening for some people may be perceived as challenging by others, resulting in a positive resolution of the event (Lazarus & Folkman, 1984). This study has attempted to address these issues by accompanying the pre-and-posttest measures of traumatic events with psychological health measures that are normed, valid, and reliable and by including a measure of posttraumatic growth.

Norris (1990) developed the TSS as a short screening instrument for assessing the occurrence and impact of traumatic stress in the general population. In the Recruit

Questionnaire the event portion of the TSS was used to collect lifetime and past-year frequencies on nine categories of different traumatic events. Nine questions were asked in terms of an individual's personal experience of the event, for example military combat-*did you ever serve in military combat, or in peacekeeping duties?* (as the New Zealand military has been involved in peacekeeping duties in recent years, 'peacekeeping duties' was added to this question). Other questions concerned robbery-*did anyone ever take something from you by force or threat of force such as in robbery, mugging or hold-up?*; physical assault-*have you ever been assaulted, injured or had your life placed under threat by another person?*; sexual assault-*did anyone ever make you have sex by using force or threat of force or threatening to harm you?*; and fire, disaster, tragic death, motor vehicle crash, and other hazard (see Appendix A for the full details of these questions).

The TSS was adapted for the Officer Questionnaire by adding the prefix 'since joining the police' to the questions. As well the questionnaire included six new items specifically related to police duties. These items were developed by Stephens (1996a) and followed the same format as the Norris (1990) questions. The additional items were related traumatic events for which referral to post-trauma support is compulsory under the guidelines of the New Zealand Police Trauma Policy (New Zealand Police, 1992). The Trauma Policy was introduced into the New Zealand Police in 1992, and was designed to provide a quick and confidential support service for police officers involved in psychologically or physically disturbing incidents. Referrals to psychologists or other mental health professionals are compulsory following certain incidents. The following events warrant compulsory referrals:

- Deliberate killing by police officers.
- Deliberate or accidental death of a police officer.
- Accidental death or injury of a member of the public by a police officer.
- Working with victims of disturbing homicides.
- Attendance at severe accidents.
- Disaster victim identification work.

These traumatic events were included in the Officer Questionnaire (see Appendix C for the full details of these questions) and the respondents were asked to briefly describe their experiences.

The military combat question from the TSS was not included in the Officer Questionnaire, as none of the recruits would have been involved in military combat during their first year with the police. To include perceptions of the impact of an event, the respondents were asked to choose which event was the worst. They were asked to recall this when filling in the next section, the Impact of Event Scale.

Each item asked for a *yes/no* response to the experience, and if *yes* further information was sought on multiple traumas and time since the event, and for the Officer Questionnaire, whether the officer was on- or off-duty when the traumatic event occurred. Different methods were used to calculate the trauma scores. A simple total trauma score was calculated by summing the number of different traumatic experiences for each recruit. For the Recruit Questionnaire this score had a possible range from 0 to 9. For the Officer Questionnaire this extended to 14. Separate scores were calculated for traumatic events experienced prior to joining the police, and for those experienced during the recruits' first year in the police. More than one experience of the same trauma was measured as multiple traumas. Separate scores were also calculated for traumatic events experienced on-duty and off-duty.

A reliability study by Norris (1992) found the scale to be internally consistent ($\alpha = .75$). Norris reported that studies from six southeastern USA cities had found stable frequencies of exposure to one or more traumatic events, ranging from 62% to 75%, with an average of 69%. A study by Buchanan et al. (2001) with the New Zealand Police found 70% of police recruits had prior traumatic event exposure. Resnick et al. (1993) have criticized the scale for having only a single item of sexual assault. Norris and Raid (1997) acknowledged this shortcoming when they commented on the lack of explicit assessment of childhood physical and sexual abuse. Even so, the TSS has yielded estimates for the prevalence of any trauma identical to those obtained by Resnick et al., (1993), and higher than its predecessors which had relied on a single-item measure of exposure to traumatic events. Norris commented that establishing cause and effect in

traumatic stress research is exceedingly difficult and that further progress will depend on the adoption of innovative strategies that allow the collection of pre-event data as part of the research design (Norris, 1992). Measures of traumatic events that simply sum the number of potentially traumatic events do not capture all aspects of the traumatic experience. Consideration should also be given to the psychological impact of traumatic events upon the individual (Vrana & Lauterbach, 1994).

Measurement of Physical Health

The Self-Evaluation of Health Rating Scale

Idler and Kasl's (1991) Self-Evaluation of Health Rating Scale was adapted from the original by Lyons and Chamberlain (1994) for their study on the self-reported health of New Zealand university undergraduate psychology students. Self-rated health has been shown to predict mortality above predictions based upon other indicators of health, such as the existence of health problems, physical disability, biological, or lifestyle risk factors (Idler & Kasl, 1991). A single question asked participants to rate their current health compared to a person in excellent health. A seven-point rating scale was provided with responses from *terrible* (1) to *excellent* (7). Intermediate responses were: *very poor* (2), *poor* (3), *fair* (4), *good* (5), and *very good* (6).

Measurement of Positive and Negative Mood

The Positive Affect Negative Affect Schedule (PANAS)

Watson et al. (1988) developed these two 10-item scales as brief measures of the two primary dimensions of mood; positive and negative affect. Positive Affect (PA) reflects the extent to which a person feels enthusiastic, active and alert. High PA is a state of high energy and concentration, whereas low PA reflects sadness and lethargy. Watson and Clark (1984) defined the term 'negative affect' (NA) as a mood disposition that reflects individual differences in negative emotions and self-regard. High NA people accentuate the negative aspects of themselves, other people, and the world in general. Individuals with this disposition appear to encode more negative information, to interpret ambiguous stimuli negatively, and to report negative interpretations of routine problems

(Watson & Clark, 1984). High NA is characterized by feelings of anger, contempt, disgust, guilt, fear, and nervousness. Low NA is a state of calmness and serenity. These scales have been shown to be sensitive to fluctuations in mood, when presented with short-term instructions (e.g., right now or today), but they can also exhibit trait-like stability when longer-term instructions are used (Watson et al., 1988).

The respondents were asked to rate on a 5-point scale the extent to which they had experienced each mood state in the last few days. The points of the scale were labeled: *very slightly or not at all* (1), *a little* (2), *moderately* (3), *quite a bit* (4), and *extremely* (5). The scales have a maximum of 50 and a minimum of 10. The PA scale is scored by summing the responses to the ten positive items: interested, proud, alert, excited, enthusiastic, inspired, active, strong, determined, and attentive. The NA scale is scored by summing the responses to the ten negative items: irritable, distressed, afraid, ashamed, upset, nervous, hostile, guilty, jittery, and scared.

These 10-item scales have been shown to be internally consistent with excellent convergent and discriminant correlations with lengthier measures of underlying mood factors. In a study with university psychology students ($N = 1,002$) Cronbach's coefficient *alphas* were all acceptably high ranging from .86 to .90 for PA, and from .84 to .87 for NA. When the scales were given under different time frame conditions (e.g., past few days or past few weeks) the reliability of the scales were unaffected by the instructions. The scales have demonstrated stability over a two-month test-retest period and correlated at predicted levels with measures of related constructs (Watson et al., 1988).

The Measurement of Traumatic Stress

The Impact of Event Scale (IES)

Within the police it could be predicted that high levels of work demands, and ongoing exposure to traumatic events would elevate baseline levels of traumatic stress symptoms to levels exceeding those prevailing in the general population (Paton & Smith, 1999). To assess whether this is so, required that induction norms be determined (i.e., status when first recruited) as well as norms for more experienced recruits. These will enable

assessment of the changes in mental health resulting from the operational and traumatic demands of police work. These could also aid in the assessment of the effectiveness of intervention measures, such as training and post-trauma debriefing (Paton & Smith, 1999).

This study will focus on the levels of two traumatic stress symptoms, rather than on the determined incidence of PTSD. The assessment instrument, the Impact of Event Scale (IES) (Horowitz et al., 1979), measures levels of the two major PTSD symptoms; avoidance and intrusion. Episodes of intrusive thinking (e.g., intrusively experienced ideas, images, feelings, or bad dreams) and periods of avoidance (e.g., consciously recognized avoidance of certain feelings, ideas, or situations) are the two common responses to potentially stressful life events (Horowitz et al, 1979; Zilberg, Weiss, & Horowitz, 1982).

Horowitz et al. (1979) found a population seeking help for PTSD frequently endorsed items on the IES. The scale is therefore suitable for obtaining levels of characteristic PTSD symptoms from persons with the syndrome. A study by Green (1991) also concluded that the IES was clearly related to the PTSD diagnosis, although it does not overlap completely. The Green study of 188 individuals currently diagnosed with PTSD found a correlation of .49 ($p < .01$) between both the intrusion and avoidance subscales and a current PTSD diagnosis. Mean scores over 20 on the IES indicate clinical significance (Hyttén & Hasle, 1989; McCammon, 1996). The Impact of Event Scale has been recently revised (the IES-R) to include a dissociative construct (Weiss & Marmar, 1997). However, as this was developed after the present study had commenced the earlier two-construct version was used.

The IES is applied by anchoring any specific life event to the two most common symptoms of PTSD. The recruits were asked to bear in mind their answer to the worst experience item in the questionnaire; this was placed just before the IES section. The recruits were asked how true the IES items were for them, and their responses were scored on a four-point scale ranging from (0) *not at all* to (5) *often*. Intermediate responses were available with (1) *rarely* and (3) *sometimes*. The highest score possible is 75.00. Both questionnaires asked for responses to cover the past seven days as this

has been found to be the best time-period for clinically valid reports of current subjective distress, related to a particular life event (Horowitz, Wilner, Kaltreider, & Alvarez, 1980). Responses are simply summed for each subset score, and both subsets are summed to produce a total score.

The IES subscales for intrusion and avoidance factors were reliable; Cronbach's coefficient *alphas* for these subscales being .78 and .82 respectively. Test-retest reliability over a two-week period was .87 for the total score, .89 for the intrusion subscale, and .79 for the avoidance subscale (Horowitz, et al., 1979). The IES subscales were perfectly replicated in a study of both hospital patients and patients' next of kin. Cronbach's coefficient *alphas* for that study were uniformly high, ranging from .79 to .92 (Zilberg et al., 1982). These authors concluded that the IES had highly relevant item content, consisting of two subscales related to intrusion and avoidance experiences. Schwarzwald, Solomon, Weisenberg, and Mikulincer (1987) provided further evidence of internal reliability. They cited Cronbach's coefficient *alphas* of .91 (intrusion) and .84 (avoidance) as evidence of acceptable internal consistency. For the total scale they found a Cronbach's coefficient *alpha* of .93, indicating high internal consistency. They considered that these findings supported the use of the IES as a measure of the psychological sequelae of combat. The advantage that the IES has over other self-report instruments is that the IES was specifically designed to measure the extent of stress-response syndromes; it is not a general measure of distress (Green, 1991). As the impact of traumatic events was a focus of all the multiple regression analyses for this study this was an important consideration.

Measurement of Psychological Distress Symptoms

The Hopkins Symptom Checklist-21 (HSCL-21)

This checklist was adapted from the original 58-item Hopkins Symptom Checklist by Green et al. (1988). The HSCL-21 is a self-report symptom-rating inventory designed to measure symptoms of psychological distress. As well as a global measure of psychological distress it can give some indication of levels of distress on more than one dimension (Deane, Leathem, & Spicer, 1992). The 21 items have been shown to produce three stable 7-item subscales (Green et al., 1988). These are: general feelings of

distress (GFD); somatic distress (SD); and performance difficulty (PD). This scale is designed to measure psychological distress related to the previous seven days. The HSCL-21 is not designed as a trait measure, but rather as a measure of the respondents' reaction to what has happened in the last seven days. The scale has been found of value in assessing subjective, psychosomatic, and behavioural responses to stress (Green, Walkey, Taylor, & McCormick, 1989).

The respondents were asked in both questionnaires to indicate how much of each of 21 symptoms they had experienced over the last seven days. The scale ranged from *not at all* (1) to *extremely* (4) with intermediate options of a *little bit* (2) and *quite a bit* (3). The numerical responses are summed for each of the seven item subscale scores. Scores for the three subscales are summed to produce the total distress score; this has a maximum of 62. The items in the HSCL-21 were chosen following repeated confirmation of a three factor structure using a number of different samples and scales of various lengths (Green et al., 1988).

Green et al. (1988) assessed reliability of the scale with a group of 203 New Zealand university students. Split-half reliabilities for the subscales ranged from .80 to .89 with Cronbach's coefficient *alpha* scores ranging from .75 to .86; the corrected split-half reliability for the total scale was .91 with a Cronbach's coefficient *alpha* of .90. These reliability scores were only slightly lower than those of a group 490 New Zealand university students using the 58-item HSCL. For this group ($N = 490$) split-half reliabilities ranged from .77 to .94. Coefficient *alphas* ranged from .75 to .90. The total distress score had a split-half reliability of .94 and a Cronbach's coefficient *alpha* of .92 (Green et al., 1988). These results compared well with an earlier study of the reliability of the 58-item HSCL that reported *alphas* that ranged from .84 to .87 (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974).

Additional evidence for the validity and reliability of the HSCL-21 has been found in a study of 141 psychotherapy clients (Deane et al., 1992). Cronbach's coefficient *alpha* scores were determined for the subscales and total score as follows; performance difficulty ($\alpha = .80$), somatic distress ($\alpha = .83$), general feelings of distress ($\alpha = .87$), and

total distress score ($\alpha = .89$). Test-retest reliability could not be adequately assessed for the study as psychotherapy occurred during the test-retest interval.

Measurement of Posttraumatic Growth

The Posttraumatic Growth Inventory (PTGI)

This 21-item scale was recently developed to measure the degree of reported positive changes experienced in the struggle with major life crises (Tedeschi & Calhoun, 1996). These researchers surveyed the literature on reported positive outcomes from people who had experienced traumatic events; the 21 items in the PTGI were most frequently mentioned as perceived benefits. The scale has five factors:

- *New possibilities*: five items (e.g., I developed new interests).
- *Relating to others*: seven items (e.g., a sense of closeness with others).
- *Personal strength*: (four items (e.g., a feeling of self-reliance).
- *Spiritual change*: two items (e.g., a better understanding of spiritual matters).
- *Appreciation of life*: three items (e.g., an appreciation for the value of my own life).

The scale has a six-point Likert response format, with responses ranging from *I did not experience this change as a result of my crisis* (0), to *I experienced this change to a very great degree as a result of my crisis* (5). Intermediate scores are: *a very small degree* (1); *a small degree* (2); *a moderate degree* (3), and *a great degree* (4). Summing the responses scores the scale. Summing the subscale sets scores the factors. The PTGI has demonstrated high internal consistency with a Cronbach's coefficient *alpha* of .90. The factors also showed high internal consistency with Cronbach's coefficient *alpha* scores as follows: new possibilities, $\alpha = .84$; relating to others, $\alpha = .85$; personal strength, $\alpha = .73$; spiritual change, $\alpha = .85$; and appreciation of life, $\alpha = .67$ (Tedeschi & Calhoun, 1996). A sample of 28 people was obtained to check test-retest reliability over two months; the test-retest reliability was adequate, $r = .71$ for the full-scale test, however, it was low for two of the subscales appreciation of life, $r = .37$ and personal strength, $r = .47$ (Calhoun et al., 2000).

To examine the construct validity of the PTGI to determine whether the inventory measures some benefits unique to trauma a study of 117 people was conducted comparing those who had experienced only ordinary life events against those who experienced severely traumatic events (Tedeschi & Calhoun, 1996). It was hypothesized that those who had experienced traumatic events would have significantly higher scores on the PTGI, given that traumatic events trigger rumination focused on searches for meaning. The results supported these predictions for all the factors except spiritual change. The PTGI is a new scale and is a general measure of the perception of benefits that has applicability to a wide range of traumatic events. Preliminary analysis suggests that it has good psychometric properties (Cohen, Hettler, & Pane, 1998). However, attempting to quantify personal growth outcomes is a new field and further research is required in the area.

Measurement of Police Organizational Events

Several studies have shown that daily life experiences are more important than occasional major life events in determining psychological well-being (Kanner, Coyne, Schaefer, & Lazarus, 1981; Weinberger, Hiner, & Tierney, 1987). Following this tenet Kanner et al. (1981) developed the Daily Hassles and Uplifts Scales. These scales measured the frequency and intensity of daily experiences that were appraised as significant for a person's well-being. Hart et al. (1993) further developed these scales into a measure designed to assess the police daily work environment (the Police Daily Hassles and Uplifts Scales).

Although the media stereotype has suggested that policing is dangerous and therefore stressful Hart et al. argue that, in actuality, police officers rarely experience the unsavory aspects of police work and many complete their careers without facing life-threatening situations (Hart et al., 1993). They were, however, more likely to be involved in the day-to-day running of their organization. The organizational component of the Police Daily Hassles and Uplifts Scale was designed to measure daily organizational stressors encountered frequently by officers. It measures chronic or reoccurring conditions rather than major life-changing events. Chronic work stressors include: the individual's role in

the organization; the quality of interpersonal relationships; and the physical working environment (Anson & Bloom, 1988).

The Police Daily Hassles and Uplifts Scales consist of two scales that measure positive (beneficial to well-being) and negative (harmful to well-being) police daily work experiences. Factor analysis enabled the two broad domains of organizational and operational experiences to be determined (Hart et al., 1993). Operational hassles and uplifts were those experiences that stemmed from tasks specific to police work (e.g., delivering a death message, wasting time at court, obtaining an admission from a crook, or helping the public), whereas organizational hassles and uplifts referred to those experiences that could occur in any organizational setting (e.g., poor communication between staff and management, having far too much work to do, receiving recognition for good work, or having insufficient resources). The organizational factors were chosen to measure the police organizational environment.

The organizational Hassles Scale consisted of 61 items and two other response spaces. The items were scored from 0 to 5, and the scale had a possible maximum score of 315. The organizational Uplifts Scale consists of 51 items and two other response spaces. Items were scored from 0 to 5 giving this scale a possible maximum score of 265.

These scales were developed in Australia and were expected to closely relate to the New Zealand police environment. To ensure this was so the researcher talked to police officers and Police Organization personnel (in Palmerston North, Auckland, and Wellington), and asked them what pleased them or upset them about their job. All the issues raised were itemized in the scales. One item was modified to make it suitable for use with recently trained officers. The item 'threat of impending redundancy or early retirement' was modified to read 'threat of impending redundancy'. Given the mean age of 27 years for these officers it was not considered necessary to include early retirement. Several of the Workplace Management items had the original wording 'Station/Unit managers'. After pilot testing with local police officers the decision was made to include 'Section' in this line-up as well, as this is common terminology in the New Zealand Police. The most recent version of the scales currently developed by Hart was used in this study (P.M. Hart, personal communication, April 02, 1998). The Hassles Scale

organizational items were combined into 13 factors, and the Uplifts Scale organizational items were combined into 11 factors (see Appendix L).

The organizational items from the Hassles Scale were presented in a randomized order, followed by the organizational items from the Uplifts Scale, also randomized. The Hassles and Uplifts Scales were presented separately in line with the instructions that accompany the scales. One uplifts item 'having responsibility' came up twice in the scales under the subscales: 'Decision Making' and 'The Job Itself'. For this study it was listed once.

For the Hassles Scale, officers were asked to indicate the degree to which each experience made them feel 'pressured hassled or bothered', on a six-point Likert scale ranging from: *definitely does not apply to me* (0); to *strongly applies to me* (5). Intermediate options were simply numbered 1 to 4. The same format was used for the Uplifts Scale; however, the wording read 'made you feel good'. The time period specified was 'during the last month'. Measuring daily experiences during the past month was consistent with the approach taken by Kanner et al. (1981). This was long enough to assess the typical day-to-day tasks a police officer could encounter (Hart et al., 1993). Summing the subscale responses scores the scales. The scores were then converted to reflect a 0 - 100 scale.

The original Hassles and Uplifts Scales have been shown to have good psychometric properties in terms of their first and second order factor structure and internal consistency (Hart et al., 1994). Reported Cronbach's coefficient *alphas* ranged from .77 to .93 for the hassles dimensions, and from .52 to .92 for the uplifts dimensions (Hart et al., 1994). The Cronbach's coefficient *alpha* scores for the Hassles Scale were all satisfactory, however, the *alphas* for the Uplifts Scale were not as consistent. A factor analysis of the original scales (Hart et al., 1994) identified 18 dimensions of police hassles and 12 dimensions of police uplifts that could be grouped at a second order level into more global domains reflecting organizational and operational dimensions. Given that this replicated earlier findings (Hart et al., 1993) these results suggest that that the Police Daily Hassles and Uplifts Scales have stable factor structures (Hart et al., 1994). A second order factor analysis of all the hassles and uplifts items showed that the Police

Daily Hassles and Uplifts Scales measures two distinct concepts; positive and negative experiences, rather than a unitary bipolar dimension (Hart et al., 1994).

Norms are available for the revised scales for a sample from a large Australian Police Organization ($N = 1,936$), and as well for a sample from the Australian education sector ($N = 4,164$) (P.M. Hart, personal communication, June 01, 1998). These results, on the organizational subscales of the Hassles and Uplifts Scales, are reported (see Appendix M; Tables 1 & 2).

Chapter Eight

RESULTS

Overview

The research hypotheses are related to problems recognized within existing research concerning the impact of traumatic and organizational stressors on police officers' well-being (Alexander & Wells, 1991; Carlier et al., 1998; Calhoun & Tedeschi, 1998, 2000; Deahl, Gillham, Thomas, Searle, & Srinivasan, 1994; McFarlane, 1992; Paton, 2000; Paton, Smith et al., 2000; Paton, Violanti et al., 2000; Stuhlmiller & Dunning, 2000). The research variables derive from the study measures, and are those required to answer the research hypotheses. The hypotheses are analyzed using hierarchical multiple regression. The outcome variables (DVs) are the IES, HSCL-21, health, and PTGI Time 2 variables. The predictor variables (IVs) are the police traumatic event and organizational variables, and the control variables.

*Relationships between the study measures and their associated research variables are analyzed using the statistical package STATISTICA (Statsoft, 1994). Traumatic stress is assessed with IES variables. Psychological distress is assessed with HSCL-21 variables. Physical health is assessed with self-rated health variables. Organizational stressors are assessed with hassles variables, derived from the Police Daily Hassles Scales, and positive organizational experiences are assessed with uplifts variables, derived from the Police Daily Uplifts Scale. Posttraumatic Growth is assessed with variables derived from the PTGI. The study results are evaluated with parametric and non-parametric statistical analyses. Parametric *t* tests with separate variance estimates evaluate mean differences between groups. These are robust *t* tests that can*

accommodate small sample sizes. Non-parametric tests (Sign tests and Kruskal-Wallis median tests) are performed to check for significant group differences; these tests do not require that the variables be normally distributed. All the t tests are two-tailed and alpha = .05 unless stated otherwise.

Part One of this chapter begins with a description of the names of the study measures and the research variables, the demographic variables are analyzed and the descriptive statistics are summarized. In Part Two the impact of prior and police traumatic events on the recruits is examined. In Part Three the results of the health, IES, HSCL-21, and PANAS measures are described; significant changes between the Time 1 and Time 2 outcomes are noted. Results from the organizational variables (hassles and uplifts) and the PTGI are reported; these were assessed at Time 2 only. In Part Four the results of the hierarchical regressions are reported; these determine whether the theoretical research predictions made in the hypotheses are supported or not supported. The chapter ends with summaries of the supported research predictions.

Part One Summary of Descriptive Statistics

Overview: Part one begins with a description of the names of the study measures and research variables. The demographic profiles of three police samples are analyzed, followed by a summary of the descriptive statistics for two police samples: the sample of 512 recruits who completed the Recruit Questionnaire; and the sample of 314 recruits who completed both questionnaires.

Names of the Study Measures and Research Variables

The research variables utilize data from the study measures, and were the main variables used in this study (see Table 8.1). The study measures were the Time 1 and Time 2 health, IES, HSCL-21, PANAS PA and NA variables, and the Time 2 hassles, uplifts, and PTGI variables. The following constructs were measured: traumatic event exposure was measured with the Traumatic Stress Schedule (TSS) (Norris, 1990); physical health

was measured with a self-rated health question (Idler & Kasl, 1991); traumatic stress symptoms (intrusion/avoidance) were measured with the Impact of Event Scale (IES) (Horowitz, Wilner & Alvarez, 1979); psychological distress symptoms were assessed with the Hopkins Symptom Checklist-21 (HSCL-21) (Green et al., 1988); positive and negative mood were assessed with the Positive Affect Negative Affect Schedule (PANAS) (Watson et al., 1998); positive and negative police organizational experiences were assessed with the Police Daily Hassles and Uplifts Scales (Hart et al., 1993); and posttraumatic growth was assessed with the Posttraumatic Growth Inventory (PTGI) (Tedeschi & Calhoun, 1996). The names of derived factors and other associated measures used in the analyses were incorporated into the results when utilized.

Table 8.1

Study Measures and Research Variables at Time 1 and Time 2

Measure	Variables
Prior total different traumatic events (Time 1)	TSS T1
Police total different traumatic events (Time 2)	TSS T2
Multiple police different traumatic events (Time 2)	MTSS T2
Traumatic events on-duty (Time 2)	TSS on-duty
Traumatic events off-duty (Time 2)	TSS off-duty
Physical health	Health T1; T2
IES (traumatic stress)	IES T1; T2
HSCL-21 (psychological distress)	HSCL-21 T1; T2
PANAS positive affect	PANAS PA T1; T2
PANAS negative affect	PANAS NA T1; T2
Hassles Scale (Time 2)	Hassles
Uplifts Scale (Time 2)	Uplifts
Post Traumatic Growth Inventory (Time 2)	PTGI

The individual TSS T1 variables were described by name: military combat, robbery, assault, sexual assault, fire, disaster, accident, motor vehicle, and other.

The same procedure was followed for the TSS T2, in which six additional questions targeted specific police experiences. These variables were described as follows:

- Police death (death of a police officer by accident, homicide, or suicide).
- Police killed (present when an officer was accidentally or deliberately killed).
- Public killed (present when a member of the public was killed or seriously injured by police).
- Child (work with particularly disturbing homicides, e.g., children or the elderly).
- Multiple victims (accidents with multiple victims or severe mutilation of bodies).
- DVI (involved in a Disaster Victim Identification).

Demographic Profiles of the Police Samples

A total of 693 recruits entered Police College in eight intakes over one year. Of those recruits, 512 completed the Recruit Questionnaire at Time 1 (Group One). At Time 2, one year later, a subset of 314 recruits (Group Two) completed the Officer Questionnaire (a diagram of this process is presented in the Method; Figure 7.1, p.74). Biographical information was obtained from the recruits at Time 1 (see Table 8.2).

Table 8.2

Demographic Profiles of Group One (N = 512) and Group Two (N = 314)

Variable	Group One N = 512	Group Two N = 314	Group One Percentage	Group Two Percentage
Age (Years):				
<21	8	5	1.56	1.59
21-25	230	136	44.92	43.31
26-30	166	98	32.42	31.21
31-35	65	42	12.70	13.38
36-40	32	25	6.25	7.96
>40	11	8	2.15	2.55
Gender:				
Males	375	227	73.24	72.29
Females	137	87	26.76	27.71
Marital status:				
Never married	257	155	50.29	49.52
Married/defacto	223	139	43.64	44.41
Separated	31	19	6.07	6.07
Widowed	0	0	0	0
Ethnicity:				
Maori	45	26	8.79	8.28
NZ European	423	263	82.62	83.76
Pacific Islander	11	8	2.15	2.55
Other	33	17	6.45	5.41
Education:				
No school qualif.	12	6	2.35	1.91
School Certificate	105	61	20.59	19.43
UE and above	134	76	26.27	24.20
Certificate/diploma	138	93	27.06	29.62
University qualif.	121	78	23.73	24.84

Summary of the Study Measures

Data were provided from Group One (512 recruits who completed the Recruit Questionnaire), and from Group Two (the subset of 314 recruits who completed both questionnaires). Group Two data were presented at Time 1 (data from the Recruit Questionnaire) and Time 2 (data from the Officer Questionnaire). For descriptive analyses missing values were left as missing. The number of cases (N) involved in each analysis was therefore reported (see Table 8.3).

Table 8.3

Study Measures Summary: Results for all the Recruits who completed the Recruit Questionnaire (Group One, N = 512), and the Time 1 (T1) and Time 2 (T2) Study Sample (Group Two, N = 314)

Variable	Group	Valid N	M	SD	Range
TSS T1	One (T1)	509	1.79	1.39	0 - 7
	Two (T1)	312	1.82	0.75	0 - 7
TSS T2	Two (T2)	312	1.37	1.15	0 - 6
Health	One (T1)	510	6.13	0.77	3 - 7
	Two (T1)	313	6.14	0.75	4 - 7
	Two (T2)	309	5.62	0.96	1 - 7
IES	One (T1)	425	10.82	14.77	0 - 69
	Two (T1)	263	10.90	15.07	0 - 59
	Two (T2)	267	10.07	12.56	0 - 50
HSCL-21	One (T1)	484	33.72	7.53	15 - 62
	Two (T1)	295	33.96	7.68	15 - 62
	Two (T2)	301	31.50	7.83	21 - 78
PANAS PA	One (T1)	499	40.04	4.72	10 - 33
	Two (T1)	309	39.98	4.63	21 - 50
	Two (T2)	303	34.63	6.87	10 - 50
PANAS NA	One (T1)	499	17.03	4.86	10 - 33
	Two (T1)	309	17.26	5.10	10 - 32
	Two (T2)	306	14.65	4.40	10 - 36
Hassles	Two (T2)	283	83.91	43.47	0 - 233
Uplifts	Two (T2)	280	162.61	38.40	28 - 255
PTGI	Two (T2)	233	44.91	20.07	21 - 112

Following this point data analysis was restricted to the study sample; Group Two recruits who completed both questionnaires ($N = 314$). Data from the Group One sample on the Time 1 study measures is provided (see Appendix N; Table 1). The Group Two sample provided data at Time 1 and Time 2 allowing comparisons to be made regarding changes

to the study measures. The recruits entered the Police College in eight intakes, and ANOVAs were performed grouping the intake number with the Time 1 study measures. Only the PANAS NA T1 outcomes were differentiated by intake.

Part Two Traumatic Events Results

Overview: the impact of traumatic event exposure is a focus of hypotheses one to four, and six and eight consequently this is the first study measure to be described. Relationships between traumatic event variables and the other study measures are described at Time 1 and Time 2. Chi-square tests were used to determine the significance of gender regarding the nature and frequencies of individual traumatic events. Independent t tests and Kruskal-Wallis median tests examine the significance of traumatic event exposure regarding the study measure outcomes.

Measures of traumatic events were obtained when training started (prior traumatic events; TSS T1), and one year later (police traumatic events; TSS T2). The measure was the Traumatic Stress Schedule (TSS) (Norris, 1990). At Time 2 the TSS was extended to include additional questions that targeted specific police experiences, consequently the Time 1 and Time 2 measures were not comparable. Descriptive statistics on the TSS are reported at Time 1 and Time 2. Significant differences between males and females on the traumatic events variables are described. Significant relationships between the traumatic events variables and the study variables (IES, HSCL-21, health, and PANAS) were described at Time 1 and Time 2; significant relationships with hassles and uplifts (the police organizational variables), and the PTGI are described only at Time 2.

Prior Traumatic Events (TSS T1)

Overview: prior traumatic event exposure is determined at Time 1 with the Traumatic Stress Schedule (Norris, 1990). Results from this schedule are described. Results from the worst experience question are presented. Chi-square tests are used to determine the

significance of gender regarding the nature and frequencies of individual traumatic events (TSS T1). Relationships between prior traumatic events and the study variables (IES T1, HSCL-21 T1, Health T1, PANAS PA T1, and PANAS NA T1) are assessed with Pearson's r tests for significant relationships. Independent t tests and Kruskal-Wallis median tests examine the significance of prior traumatic event exposure regarding the study measure outcomes. All t -tests are two-tailed, and $\alpha = .05$ unless stated otherwise.

Prior to joining the police the recruits had experienced, on average, fewer than two traumatic events ($M = 1.82$, $SD = 0.75$, $N = 314$). Scores ranged from 0 - 7. The possible range was 0 - 9. At Time 1, 14.74% ($N = 46$) of recruits had no prior traumatic events, 85.26% ($N = 266$) had experienced at least one prior traumatic event, 54.16% ($N = 169$) had experienced two different traumatic events, and 26.92% ($N = 84$) had experienced three or more. The recruits' prior traumatic event exposure is described by the nature of the event, and gender frequency (see Table 8.4).

Table 8.4

Recruits ($N = 312$) Prior Exposure to Traumatic Events (TSS T1)

Event	Recruits ($N = 312$)		Males ($N = 226$)		Females ($N = 86$)	
	N	%	N	%	N	%
Military combat	10	3.21	10	4.42	0	0
Robbery	34	10.90	30	13.27	4	4.65
Assault	127	40.71	106	46.90	21	24.42
Sexual assault	17	5.45	4	1.77	13	15.12
Fire	30	9.62	19	8.41	11	12.79
Disaster	33	10.58	26	11.50	7	8.14
Death	139	44.55	98	43.36	41	47.67
Motor vehicle	70	22.44	54	23.89	16	18.60
Other	108	34.62	84	37.17	24	27.91

Descriptions of the individual traumatic event categories are presented in the Method (see p.82) and in the Traumatic Stress Schedule (see Appendix A; Recruit

Questionnaire). Over 40% of the respondents had prior experience of death. This traumatic experience concerned the death of a close friend or family member by accident, homicide, or suicide. Over 20% of the respondents had been assaulted, injured, or had their life placed under threat by another person. Over 20% had prior experience of a motor vehicle crash serious enough to cause injury to one or more passengers.

Responses to the Recruit Questionnaire worst experience question

The Recruit Questionnaire traumatic events section concluded with a question: *what is the worst thing that has ever happened to you?* Responses to this question were coded (see Table 8.5).

Table 8.5

Responses to the item: What is the worst thing that has ever happened to you?

(*N* = 214)

Response	<i>N</i>	Percentage
Natural death	46	21.50
Death	46	21.50
Relationship difficulties	33	15.42
Accident	19	8.88
Health problems	13	6.07
Assaulted	13	6.07
Motor vehicle crash	11	5.14
Sexual assault	7	3.27
Other	26	12.15

Prior traumatic events and gender

At Time 1 the numbers of males and females who experienced the individual TSS T1 traumatic events were determined (see Table 8.6). *Chi-square* tests determined whether there were significant gender differences regarding the nature and frequencies of individual traumatic events.

Table 8.6

Significant Gender Differences for Individual TSS T1 Traumatic Events (Chi-square)

Variable	<i>df</i>	<i>N</i>	<i>Chi-square</i>	Males (<i>N</i> = 226)	Females (<i>N</i> = 86)
Military combat	1	312	3.93*	10	0
Robbery	1	312	4.77*	30	4
Assault	1	312	3.01**	106	21
Sexual assault	1	312	21.54***	4	13

* $p < .05$ ** $p < .01$ *** $p < .001$

There were significant gender differences for four of the individual traumatic events:

- No females had experienced military combat.
- More males (13.27%) had experienced robbery than females (4.65%).
- More males (46.90%) were assaulted than females (24.42%).
- More females (15.12%) were sexually assaulted than males (1.77%).

There were no significant *chi-square* gender differences (all $p > .05$) for the events: fire, disaster, death, motor vehicle, and other.

Relationships Between Prior Traumatic Events and the Time 1 Variables***Prior traumatic events and the Time 1 IES***

Pearsons *r* tests were performed to investigate possible relationships between TSS T1 total and individual variables, and the IES T1. The IES T1 was not related to the TSS T1. Of the individual TSS T1 variables only sexual assault and the IES T1 were correlated, $r = .17$, $p < .05$, $N = 262$. The mean IES T1 score for sexually assaulted recruits was 21.53 ($N = 15$), for those not sexually assaulted the mean was 10.30 ($N = 247$). Independent *t* tests found the difference significant for the group as a whole, and for females (sexually assaulted females $M = 24.55$, $N = 11$, versus non sexually assaulted females $M = 11.48$, $N = 61$), but not for males. These outcomes were not confirmed by Kruskal-Wallis median tests. There were no significant correlations (all $p > .05$) between

the TSS T1 and the events: military combat, robbery, assault, fire, disaster, death, motor vehicle, and other.

Prior traumatic events and the other Time 1 variables

There were no significant correlations (all $p > .05$) between the TSS T1, and HSCL-21 T1, Health T1, PANAS PA T1, and PANAS NA T1.

Police Traumatic Events (TSS T2)

Over view: the recruits' police traumatic event exposure is assessed at Time 2 with an adapted Traumatic Stress Schedule. Results from this schedule are described. Results from the worst experience item are presented. Chi-square tests determine whether there were gender differences regarding the nature and frequencies of individual traumatic events (TSS T2). Independent t tests and Kruskal-Wallis median tests examine the significance of police traumatic event exposure regarding the IES T2 outcomes. Relationships between police traumatic events and the study variables (IES T2, HSCL-21 T2, Health T2, PANAS PA T2, PANAS NA T2, and the PTGI) are assessed with Pearsons r tests. All t tests are two-tailed, and alpha = .05 unless stated otherwise. Data from hassles, uplifts, and the PTGI variables were obtained at Time 2 only. Pearsons r tests were performed to check for significant relationships between these variables and the traumatic events variables.

During their first year with the police the recruits, on average, experienced less than two different traumatic events ($M = 1.37$, $SD = 1.15$, $N = 312$). Scores ranged from 0 - 6. The possible range was 0 - 13. During their first year with the police only 26.28% ($N = 82$) of the recruits had *not* experienced a traumatic event. While 73.72% ($N = 230$) had experienced at least one traumatic event, 41.99% ($N = 131$) had experienced two different traumatic events, and 5.13% ($N = 16$) had experienced three or more. The recruits' police traumatic event exposure was described by the nature of the event, and gender frequency (see Table 8.7).

Table 8.7

Recruits' Police Traumatic Events Data from the Individual TSS T2 Variables

Event	Total (N = 312)		Males (N = 225)		Females (N = 87)	
	N	%	N	%	N	%
Robbery	2	0.64	2	0.88	0	0
Assault	135	43.27	102	45.33	33	37.93
Fire	4	1.28	3	1.33	1	1.15
Disaster	7	2.24	6	2.67	1	1.15
Death	21	6.73	16	7.11	5	5.75
Motor vehicle	15	4.80	12	5.33	3	3.45
Police death	1	0.32	1	0.44	0	0
Police killed	1	0.32	1	0.44	0	0
Public killed	25	8.01	16	7.11	9	10.34
Child	24	7.69	19	8.44	5	5.75
Multiple	89	28.53	69	30.67	20	22.99
DVI	2	0.64	1	0.44	1	1.15
Other	100	32.05	70	31.11	30	34.48

The event categories above are fully described in the Method (see p.82) and in the Traumatic Stress Schedule (see Appendix C; Officer Questionnaire). There were no reported sexual assaults. Mean results on the TSS T2 were significantly higher for recruits who scored above 20 on the IES T2 ($M = 1.93$, $N = 56$), compared to those who scored less than or equal to 20 ($M = 1.40$, $N = 210$), t test separate variance estimate(81.53) = -3.25 , $p < .01$, $N = 266$, *Kruskal-Wallis* median test *chi-square*(1, $N = 266$) = 5.07 , $p < .05$.

Responses to the TSS T2 worst experience item (N = 187)

The Time 2 TSS instructed the officers to nominate the number of the traumatic event that they considered to have been their worst experience. This also had an other category that allowed the officers to specify an event not listed in the TSS.

The responses ($N = 187$) were listed in descending order of frequency and, in addition, the percentage of respondents for each event were listed:

- Other ($N = 70, 37.43\%$).
- Attending accidents with multiple victims or severe mutilations ($N = 48, 25.67\%$).
- Assaulted, injured, or life under threat ($N = 29, 15.50\%$).
- Member of the public killed or seriously injured by the police ($N = 14, 7.49\%$).
- Death of a close friend or family member by accident, homicide, or suicide ($N = 8, 4.28\%$).
- Work with victims of multiple or particularly disturbing homicides, e.g., children or elderly victims ($N = 7, 3.74\%$).
- Motor vehicle crash ($N = 6, 3.21\%$).
- Robbery ($N = 2, 1.07\%$).
- Death of a police officer ($N = 2, 1.07\%$).
- Fire ($N = 1, 0.53\%$).

Responses to the TSS T2 worst experience other item ($N = 70$)

Responses from the other category were coded using the schedule developed for the Recruit Questionnaire worst experience item. Many officers described events that had been listed in the schedule. Examples in the recruits' own words follow. One response was selected above all others:

- Sixty one percent ($N = 43$) of the respondents described the experience of death by accident, homicide, or suicide. Examples, "Death by burning"; "Receiving bodies of twin children burnt in fire"; "Suicide on sisters birthday"; "Cot death"; "Death of a boy cyclist, contents of his head left on the road".
- A further 9% of respondents described assaults. For example, "Attempted murder, head bludgeoned with a hammer".
- Another 9% described accidents to others. For example, "18 month child hit by a car, serious head/facial injuries".
- Relationship difficulties and natural death were each nominated by only one officer.

Eighty-three percent ($N = 58$) of responses to the other category were traumatic events as defined by the *DSM-IV* (1994). Seven recruits did not describe their other experience.

Police traumatic events and gender

The numbers of males and females that experienced each of the individual TSS T2 traumatic events were determined. There were no significant gender differences (all *chi-square* $p > .05$) regarding the nature and frequencies of the individual police traumatic events. These were: robbery, assault, fire, disaster, death, motor vehicle, police death, police killed, public killed, child, multiple, DVI, and other.

Relationships Between Police Traumatic Events and the Time 2 Variables

Police traumatic events and the Time 2 IES

Pearsons *r* tests were performed to check for significant relationships between TSS T2 variables and the IES T2. Significant relationships were found between four of the individual TSS T2 variables and the IES T2. These were for the traumatic events: assault $r = .24$, $p < .05$, $N = 135$; robbery, $r = .19$, $p < .05$, $N = 2$; other $r = .18$, $p < .05$, $N = 100$; and multiple victims $r = .13$, $p < .05$, $N = 89$. There were no significant correlations (all $p > .05$) between the IES T2, and the TSS T2 individual variables: fire, disaster, death, motor vehicle, police death, police killed, public killed, child, multiple, and DVI. The TSS T2 variable significantly correlated with the IES T2, $r = .30$, $p < .05$, $N = 266$.

Only two recruits had experienced robbery therefore analysis did not proceed further for this variable. Significant outcomes were further examined with independent separate variance *t* tests and *Kruskal-Wallis* median tests grouping the individual TSS T2 variables with the IES T2. The *t* tests tested for significance the difference between the mean IES scores of those recruits who had experienced the traumatic events: assault; multiple victims; or some other trauma, versus those who had not. Only assault produced significant differences to IES T2 outcomes for both the independent *t* tests, and the *Kruskal-Wallis* median tests (see Table 8.8). An independent *t* test found that the traumatic event multiple victims was related to significantly higher IES T2 results, *t*

test separate variance estimate(149.83) = 2.00, $p < .05$. The mean IES T2 score for recruits who had experienced multiple victims was $M = 12.43$, $N = 87$, for those who had not experienced this event the mean was $M = 8.99$, $N = 179$. This difference was not confirmed by non-parametric analysis.

Table 8.8

Analyses of Group Differences on the IES T2 by Independent t tests with Separate Variance Estimates and Kruskal-Wallis Median Tests. Mean Results on the IES T2 are reported for Group One (those who had experienced assault) and for Group Two (those who had not)

Variable	Sample	df	t sep. var.	Chi-square	df	Group One M	Group Two M
Assault	Total	235.12	3.99***	15.29***	1	13.34 (N=125)	7.26 (N=141)
Assault	Males	178.81	3.17**	9.17**	1	13.31 (N=95)	7.73 (N=97)
Assault	Females	51.22	2.31*	8.07**	1	13.43 (N=30)	6.20 (N=44)
* $p < .05$		** $p < .01$		*** $p < .001$		(two-tailed)	

Significantly higher IES T2 outcomes occurred for those recruits who had experienced any traumatic event ($M = 11.44$, $N = 218$), than for those who had not experienced any traumatic events ($M = 4.10$, $N = 48$), t test separate variance estimate(94.86) = 4.69, $p < .001$, *Kruskal-Wallis* median test *chi-square*(1, $N = 266$) = 18.43, $p < .001$.

Recruits who had experienced two or more different traumatic events ($M = 13.28$, $N = 126$) had significantly higher IES T2 results compared to those who had experienced one or none ($M = 7.26$, $N = 140$), t test separate variance estimate(244.45) = -3.97, $p < .001$, *Kruskal-Wallis* median test *chi-square*(1, $N = 266$) = 20.48, $p < .001$.

The mean number of different traumatic events experienced on-duty (TSS on-duty) over the 12 months of this study was 1.24, SD 1.10, $N = 311$. The range was from 0 - 6. The mean police traumatic events was 1.37, SD 1.15, $N = 312$. The range was from 0 - 6. Most of the traumatic events (80.88%) occurred while on-duty (385 different events on-

duty versus 91 off-duty). The recruits who experienced traumatic events on-duty scored significantly higher on the IES T2 than recruits whose traumatic events were off-duty, t test separate variance estimate(114.84) = 4.68, $p < .00$, *Kruskal-Wallis* median test *chi-square*(1, $N = 265$) = 11.37, $p < .001$. The mean IES T2 scores of TSS on-duty were $M = 11.58$, $N = 209$ versus TSS off-duty $M = 4.75$, $N = 56$.

Police traumatic events and the other Time 2 variables

Pearsons r tests for significant relationships were performed between the police traumatic events variable (TSS T2) and the other study measures (see Table 8.9).

Table 8.9

Pearsons r tests between TSS T2 and HSCL-21 T2, PANAS NA T2, and PTGI

Variable	HSCL-21 T2	PANAS NA T2	PTGI
TSS T2	.15*	.20*	.16*
	$N = 299$	$N = 304$	$N = 232$

* $p < .05$ (two-tailed)

All the HSCL-21 subscales had slightly weaker significant correlations with the TSS T2: performance difficulty $r = .12$, $p < .05$, $N = 300$; general feelings of distress $r = .12$, $p < .05$, $N = 301$; and somatic distress $r = .14$, $p < .05$, $N = 300$.

At Time 2 there was not a significant correlation (p was $> .05$) between TSS T2 and Health T2. The TSS T2 correlated with the PTGI, and the PTGI factors: relating to others, personal strength, and appreciation of life (see Table 8.10). There were no significant correlations between the TSS T2 and the PTGI factors: new possibilities; and spiritual change (all $p > .05$).

Table 8.10

Pearsons r Tests between TSS T2 and PTGI Factors and Total

Variable	<i>PTGI 1</i>	<i>PTGI 2</i>	<i>PTGI 3</i>	<i>PTGI 4</i>	<i>PTGI 5</i>	<i>PTGI</i>
	<i>New Poss.</i>	<i>Relating to Others</i>	<i>Personal Strength</i>	<i>Apprec. of Life</i>	<i>Spiritual Change</i>	<i>Total</i>
	<i>N = 243</i>	<i>N = 238</i>	<i>N = 240</i>	<i>N = 245</i>	<i>N = 242</i>	<i>N = 232</i>
TSS T2	.09	.14*	.19**	.17**	0	.16*
	* $p < .05$	** $p < .01$	(two-tailed)			

Significant correlations (see p.108, and Tables 8.9 & 8.10) indicated that traumatic events could be possible predictors of outcome effects for the IES T2, HSCL-21 T2, and the PTGI Time 2 variables. This was investigated with hierarchical regression analyses.

The PTGI total and factor scores were compared for those who had not experienced traumatic events against those who had experienced any traumatic events. Independent separate variance estimate t tests (two-tailed) and *Kruskal-Wallis* median tests on these variables for males, females, and the total group showed no significant differences (all $p > .05$). Whether or not the recruits had experienced traumatic events made no significant differences to their PTGI total or factor scores.

Those who had experienced traumatic events $M = 89.77$, $N = 204$ experienced significantly more hassles, compared to those who had not experienced traumatic events $M = 68.57$, $N = 77$, t test separate variance estimate(154.29) = 3.94, $p < .001$, *Kruskal-Wallis* median test $chi-square(1, N = 281) = 16.29$, $p < .001$. There were no significant differences on the t tests and median tests for these groups regarding mean scores on Health T2, HSCL-21 T2, and uplifts (all $p > .05$).

Part Three Results of Health, IES, HSCL-21, PANAS, Hassles, Uplifts, and PTGI Measures

Overview: the results from the Health, IES, HSCL-21, PANAS PA, and PANAS NA measures are described at Time 1 and Time 2. Dependent t tests and non-parametric Sign tests determine whether there are significant differences between Time 1 and Time 2 outcomes for each measure. Significant outcomes are assessed with dependent t tests and Sign tests, to evaluate gender differences. The results from the variables assessed only at Time 2 (hassles, uplifts, and the PTGI) are reported. Pearsons r tests of significance are examined to determine whether these variables correlate with the other study measures. Part Three will begin by describing the results of the measures assessed on two occasions. The results of the measures assessed only at Time 2 (hassles, uplifts, and the PTGI) are presented later in this section.

Self-rated Health (Physical Health Outcomes)

Overview: physical health is assessed by the self-rated health question (Idler & Kasl, 1991) at Time 1 and Time 2. Dependent t tests and non-parametric Sign tests show that significant changes to this measure have taken place over the one-year period of this study. The significant outcomes are examined with gender-sorted dependent t tests and Sign tests and find significant reductions in health for both males and females.

Physical health Time 1

The recruits entered Police College with a high mean self-rated physical health rating ($M = 6.14$, $SD = 0.75$, $N = 313$). Scores ranged from 4 - 7. The possible range was 1 - 7. The recruits indicated that, on average, compared to the person in excellent health they felt their health to be *very good*. No recruits described their health as either *terrible*, *very poor*, or *poor*. The bulk of the respondents ($N = 151$) chose *very good* and *excellent* was chosen by a further 107 recruits.

Physical health Time 2

One year later the recruits' mean physical health rating had decreased by 8.47% ($M = 5.62$, $SD = 0.96$, $N = 309$). Scores ranged from 1 - 7. The decreased health rating indicates the recruits were feeling less positive about their health, on average health was rated as *good*. Scores encompassed all the available ratings. One recruit (0.3%) felt *terrible*, 6 (2.00%) felt *poor*, and a further 28 (9.06%) described their health as only *fair*.

The Time 1 and Time 2 health variables were correlated, $r = .40$, $p < .001$, $N = 308$. A dependent t test and a non-parametric *Sign* test found that the difference between Time 1 and Time 2 mean scores was significant. Dependent t tests and *Sign* tests with gender-sorted variables found that there was a significant difference for the total group and for both males and females, between Health T1 and Health T2 (see Table 8.11).

Table 8.11

Analyses of Mean Differences between Health T1 and Health T2 for the Total (N = 308), Males (N = 224), and Females (N = 84)

Variable	Sample	df	t	z	M Time 1	M Time 2
Health T1, T2	Total	307	9.50**	6.98***	6.14	5.63
	Females	83	5.52**	4.49***	6.21	5.60
	Males	223	7.75**	6.12***	6.12	5.64

** $p < .01$ *** $p < .001$ (two-tailed)

Health T2 significantly correlated with the HSCL-21 T2 ($r = -.32$, $p < .001$, $N = 296$), the PANAS PA T2 ($r = .46$, $p < .001$, $N = 228$), and the PANAS NA T2 ($r = -.36$, $p < .001$, $N = 302$). There were no significant correlations between Health T2 and the IES T2, and Health T2 and the PTGI (all $p > .05$).

Impact of Event Scale (Traumatic Stress Outcomes)

Overview: traumatic stress symptoms (intrusion/avoidance) are assessed with the IES (Horowitz et al., 1979) at Time 1 and Time 2. Non-parametric Sign tests and dependent t tests confirm that this measure has not changed significantly over the one-year study period for the total group or for males. However, a significant, although not reliable, result is indicated for females.

IES Time 1

The mean score on the IES T1 was 10.90 ($SD = 15.07$, $N = 263$). Scores ranged from 0 - 59.00. The possible range was 0 - 75. On average, this group of recruits had low IES scores. There were, however, recruits who scored at the upper end of the scale. At Time 1, 41.06% of the recruits had a zero total, and a further 19.40% did not complete the scale. Of the recruits who completed the scale 24.33% gave a score less than or equal to 10, and a further 14.07% scored over 10 but less than or equal to 20. Forty-four recruits scored over 20 on the IES T1 ($N = 263$), a result that indicated clinical significance. The IES T1 mean on the intrusion subscale was 5.39 ($SD = 7.56$, $N = 263$); on the avoidance subscale it was 5.60 ($SD 8.37$, $N = 264$).

IES Time 2

One year later the IES T2 mean had decreased to 10.07 ($SD = 12.56$, $N = 267$). Scores ranged from 0 - 50. Fifty-six recruits scored over 20 on the IES T2 ($N = 267$). The mean TSS T2 score for this group was 1.93. This was 27.46% higher than the mean TSS T2 score ($M = 1.40$, $N = 210$) for the group who scored ≤ 20 . The IES T2 mean on the Intrusion subscale was 5.05 ($SD = 6.31$, $N = 270$), on the avoidance subscale it was 5.04 ($SD = 7.08$, $N = 267$). The Time 1 and Time 2 IES variables were correlated, $r = .15$, $p < .05$, $N = 225$. Non-parametric *Sign* tests found no differences between the Time 1 and Time 2 mean scores for the total group or for males. For females there was a significant difference; at Time 2 mean IES scores for females were 32.21% lower, *Sign* test $z = 22.12$, $p < .05$. However, this result was not significant when examined with a dependent *t* test (p was $> .05$). The mean IES T1 score for females was 13.47 ($N = 72$),

for males it was 9.94 ($N = 163$), the mean IES T2 score for females was 9.13 ($N = 74$), for males it was 10.79 ($N = 163$).

The IES T2 significantly correlated with the HSCL-21 T2 ($r = .43, p < .001, N = 263$), the PTGI ($r = .37, p < .001, N = 228$), and the PANAS NA T2 ($r = .35, p < .001, N = 261$). There were no significant correlations between the IES T2 and Health T2, and the IES T2 and PANAS PA T2 (all $p > .05$).

HSCL-21 (Psychological Distress Outcomes)

Overview: psychological distress symptoms are assessed with the HSCL-21 (Green et al., 1988) at Time 1 and Time 2. Dependent t tests confirm that significant changes to this measure (and two subscales) have occurred over the one-year period of the study. The significant results are found for the total group, males, and females.

HSCL-21 Time 1

At Time 1 the recruits had a mean HSCL-21 T1 score of 33.96 ($SD = 7.68, N = 295$). Scores ranged from 15 - 62. The maximum possible score was 84. The scale comprises three subscales: general feelings of distress (GFD); somatic distress (SD); and performance difficulty (PD). Mean scores for the subscales were 10.81, 9.92, and 13.28 respectively ($N = 295$).

HSCL-21 Time 2

At Time 2 the mean HSCL-21 scores had reduced by 7.24% to 31.50 ($SD = 7.83, N = 301$). Scores ranged from 21-78. The mean scores ($N = 301$) for the subscales were GFD 10.46, SD 9.03, PD 12.05. The Time 1 and Time 2 HSCL-21 variables were correlated, $r = .43, p < .001, N = 284$. The difference between HSCL-21 T1 and HSCL-21 T2 mean scores was significant, $t(283) = 5.46, p < .01$. Differences between Time 1 and Time 2 mean scores had significantly reduced for two of the three subscales: SD and PD (see Table 8.12). Results for GFD had not significantly changed ($p > .05$).

Table 8.12

Analyses of the Mean Differences Between Time 1 and Time 2 HSCL-21, Somatic Distress (SD), and Performance Difficulty (PD) Scores

Variable	Sample	df	t	z	M Time 1	M Time 2
HSCL-21	Total	283	5.46**	3.04**	33.96 (N = 284)	31.31 (N = 284)
SD	Total	287	5.24**	2.99**	9.93 (N = 288)	9.00 (N = 288)
PD	Total	286	5.88**	2.99**	13.28 (N = 287)	11.97 (N = 286)
HSCL-21	Females	79	2.75**	3.04**	35.19 (N = 80)	32.28 (N = 80)
	Males	203	4.77**	4.39***	33.48 (N = 204)	30.93 (N = 204)
SD	Females	80	3.66**	2.98**	10.54 (N = 81)	9.17 (N = 81)
	Males	206	3.83**	4.31***	9.70 (N = 207)	8.93 (N = 207)
PD	Females	80	2.94**	3.56***	13.20 (N = 81)	11.90 (N = 81)
	Males	205	5.10**	4.75***	13.32 (N = 206)	12.01 (N = 206)

** $p < .01$ *** $p < .001$ (two-tailed)

The HSCL-21 T2 significantly correlated with Health T2 ($r = -.32, p < .001, N = 296$), the IES T2 ($r = .43, p < .001, N = 263$), the PTGI ($r = .37, p < .001, N = 230$), the PANAS PA T2 ($r = -.26, p < .001, N = 291$), and the PANAS NA T2 ($r = .54, p < .001, N = 294$).

PANAS (Positive and Negative Mood Outcomes)

Overview: positive and negative mood states are assessed with the Positive Affect Negative Affect Schedule (Watson et al., 1988). The PANAS PA Scale and the PANAS NA Scale are assessed at Time 1 and Time 2. Dependent t tests and Sign tests confirmed that significant changes to levels of mood have occurred over the one-year period of the study. Significant results on both scales (PA and NA) are reported for males and females.

PANAS PA Time 1

The mean score on the PANAS PA T1 was 39.98 ($SD = 4.63$, $N = 309$). Scores ranged from 21 - 50. Possible scores ranged from 10 - 50. The highest scoring items were *interested* ($M = 4.50$, $N = 313$), *determined* ($M = 4.38$, $N = 313$), *enthusiastic* ($M = 4.19$, $N = 313$), and *active* ($M = 4.13$, $N = 313$).

PANAS PA Time 2

One year later the PANAS PA T2 mean score had decreased by 13.38% to 34.63 ($SD = 6.87$, $N = 303$). Independent t tests and *Sign* tests confirmed that the differences between the Time 1 and Time 2 scores were significant for the total group, for males, and for females (see Table 8.13). The Time 1 and Time 2 PANAS PA variables were correlated, $r = .41$, $p < .001$, $N = 299$. Scores on the PANAS PA T2 ranged from 10 - 50. The recruits gave their highest ratings to the same items as before, but the rankings were considerably lower. The highest scoring items were *interested* ($M = 3.80$, $N = 307$), *determined* ($M = 3.68$, $N = 305$), *enthusiastic* ($M = 3.60$, $N = 307$), and *active* ($M = 3.58$, $N = 306$).

The PANAS PA T2 significantly correlated with Health T2 ($r = .47$, $p < .001$, $N = 299$), the HSCL-21 T2 ($r = -.26$, $p < .001$, $N = 291$), the PTGI ($r = .14$, $p < .001$, $N = 228$), and the PANAS NA T2 ($r = -.23$, $p < .001$, $N = 303$). There was not a significant correlation between the PANAS PA T2 and the IES T2 (p was $> .05$).

PANAS NA Time 1

At Time 1 the PANAS NA mean score was 17.26 ($SD = 4.86$, $N = 309$). Scores ranged from 10.00 - 32.00. Possible scores ranged from 10 - 50. The only negative item with a high mean ranking for the recruits was *nervous* ($M = 3.07$, $N = 312$). The next highest mean ranking was for *scared* ($M = 2.00$, $N = 313$), followed by *distressed* ($M = 1.97$, $N = 313$).

PANAS NA Time 2

One year later the PANAS NA mean score had decreased by 15.12% to 14.65 ($SD = 4.40$, $N = 306$). Independent t tests and *Sign* tests confirmed that the differences between the Time 1 and Time 2 scores were significant for the total group, for males, and for females (see Table 8.13). The Time 1 and Time 2 PANAS NA variables were significantly correlated, $r = .28$, $p < .001$, $N = 301$. Scores on the PANAS NA T2 ranged from 10 - 36. The most common negative feelings were: *irritable* ($M = 2.08$, $N = 307$); then *nervous* ($M = 1.75$, $N = 306$); then *distressed* ($M = 1.53$, $N = 307$). See Table 8.13 for these results.

Table 8.13

Analyses of the Mean Differences Between Time 1 and Time 2 PANAS PA and PANAS NA Scores

Variable	Sample	<i>df</i>	<i>t</i>	<i>z</i>	<i>M</i> Time 1	<i>M</i> Time2
PANAS PA	Total	299	13.93**	10.82**	40.09 (<i>N</i> = 300)	34.74 (<i>N</i> = 300)
	Females	82	7.90**	7.06***	39.84 (<i>N</i> = 82)	32.87 (<i>N</i> = 82)
	Males	217	11.62**	8.30***	40.18 (<i>N</i> = 218)	35.45 (<i>N</i> = 218)
PANAS NA	Total	301	7.41**	7.76***	17.24 (<i>N</i> = 302)	14.73 (<i>N</i> = 302)
	Females	80	3.54**	4.61***	17.88 (<i>N</i> = 81)	15.16 (<i>N</i> = 81)
	Males	220	6.65**	6.20***	16.68 (<i>N</i> = 221)	14.57 (<i>N</i> = 221)

** $p < .01$ *** $p < .001$ (two-tailed)

The PANAS NA T2 significantly correlated with Health T2 ($r = -.36$, $p < .001$, $N = 302$), the IES T2 ($r = .35$, $p < .001$, $N = 261$), the HSCL-21 T2 ($r = .54$, $p < .001$, $N = 294$), and the PANAS PA ($r = -.23$, $p < .001$, $N = 303$). There was not a significant correlation between the PANAS NA T2 and the PTGI (p was $> .05$).

The Hassles Scale

Organizational stressors were measured at Time 2 with the Police Daily Hassles and Uplifts Scale (Hart, 1996). The total hassles mean score ($N = 283$) was 83.91, $SD = 43.47$. Scores ranged from 0 - 233. The highest mean scores for the individual hassles were the two other items ($M = 3.93$, $N = 56$; and $M = 3.39$, $N = 23$ respectively). The other spaces allowed the recruits to specify any other hassles that they wanted to list.

Hassles Scale other responses

The recruits listed 79 hassles in the two other spaces. The responses were coded using the operational and organizational factors of the Police Daily Hassles Scale as a guide. This resulted in 60 organizational responses and 19 operational responses. These were listed in order of frequency under factor headings and examples follow in the recruits' own words.

Organizational responses:

- *Activity* ($N = 11$). Examples, "Unrealistic roster 7 on 2 off"; "Shift work affecting the body (sleep)"; "Lack of sleep"; "Shift work interfering with sports activities".
- *Administration* ($N = 10$). Examples, "Lack of understanding about rural policing by police management"; "Lack of training"; "Treated like a number not a person by police management".
- *Resources* ($N = 10$). Examples, "Unreliable computers"; "Lack of manpower"; "Definite lack of resources"; "Disbelief about new staffing numbers"; "Budget cuts for resources".
- *Coworkers* ($N = 9$). Examples, "Seniority 1st; ability 2nd"; "Working with only males"; "Pressure from other staff to fit into the police social scene"; "Working with people six months out of college who think they should be acting sergeants".
- *Work and Home Life* ($N = 6$). Examples, "Strain from low income"; "Switching off outside work"; "Hard to take holidays".
- *Communication* ($N = 5$). Examples, "Not being told what is expected of me"; "Not being listened to".

- *Workload* ($N = 5$). Examples, “Having to work six months in watch house”; “Long work hours”.
- *Personality Clashes* ($N = 3$). For example, “Pervasive aggressive attitude towards offenders and to a lesser extent coworkers”.
- *Career Opportunities* ($N = 1$). For example, “Lack of career opportunities”.

Operational responses:

- *External/Court* ($N = 10$). Examples, “Occupation affecting the way friends view appropriate off-duty behaviour”; “NZ court system; hard work down the drain”; “Fear of appearing in Court”.
- *Complaints/Public* ($N = 7$). Examples, “Unthankful public”; “Public demanding you do things for them now”; “Dealing with members of the public who think you have a magic wand to wave to fix their lives”.
- *Victims* ($N = 2$). For example, “Advising next of kin that family member had been killed”.

Hassles individual items

Highest mean scores for individual items were for the following:

- Excessive Paperwork, $M = 2.98$, (possible range 0 - 5), $N = 310$.
- Irregular Meal Times, $M = 2.84$, (possible range 0 - 5), $N = 310$.
- Insufficient Resources, $M = 2.52$, (possible range 0 - 5), $N = 308$.
- Unnecessary Forms, $M = 2.46$, (possible range 0 - 5), $N = 307$.
- Insufficient Finance or Resources to Work With, $M = 2.40$, (possible range 0 - 5), $N = 308$.

Hassles factors

The individual items were combined into 13 factors (see Table 8.14). Means were scaled to 100 (by computing the percentage of the mean score divided by the maximum possible range) to facilitate comparisons.

Table 8.14

The Hassles Factors: Means, Number of Items, Possible Range, Scaled Means, and Number of Respondents

Factor #	Factor	# of Items	Possible Range	<i>M</i>	<i>M</i> Scaled to 100	<i>N</i>
1	Communication	6	0-30	8.47	23.23	308
2	Workload	4	0-20	6.74	33.70	305
3	Coworkers	6	0-30	5.84	19.47	304
4	Outside Support	3	0-15	2.63	17.53	307
5	Administration	9	0-45	15.07	33.49	305
6	Job Insecurity	2	0-10	0.71	7.10	309
7	Resources	4	0-20	9.29	46.45	305
8	Dual Careers	2	0-10	2.39	23.90	305
9	Work & Home Life	5	0-25	7.72	30.88	307
10	Career Opportunities	4	0-20	2.78	13.90	303
11	Personality Clashes	4	0-20	3.96	19.80	308
12	Activity	6	0-30	11.72	39.07	301
13	Supervision	6	0-30	6.85	22.83	306

Pearsons *r* tests were performed between the hassles variables and other study measures (see Table 8.15).

Table 8.15

*Pearsons r Tests between the Hassles Total and Factors and the Study Measures:
Health T2, IES T2, HSCL-21 T2, and PTGI*

Variable	Health T2	IES T2	HSCL-21 T2	PTGI
H1 Communication	-.04 N = 303	.22** N = 263	.23*** N = 298	.22** N = 232
H2 Workload	-.18** N = 300	.19** N = 260	.44*** N = 295	.21** N = 230
H3 Coworkers	-.01 N = 299	.26*** N = 259	.25*** N = 293	.11 N = 228
H4 Outside Support	-.10 N = 302	.13* N = 262	.38*** N = 297	.20** N = 231
H5 Administration	-.08 N = 300	.24*** N = 261	.36*** N = 295	.19** N = 230
H6 Job Insecurity	-.17** N = 304	.12 N = 263	.24*** N = 298	.15* N = 232
H7 Resources	-.05 N = 300	.12 N = 260	.26*** N = 295	.14* N = 229
H8 Dual Careers	-.11 N = 300	.15* N = 260	.23*** N = 295	.12 N = 230
H9 Work and Home	-.20*** N = 302	.26*** N = 261	.46*** N = 296	.28*** N = 230
H10 Career Opportunities	-.16** N = 298	.22*** N = 258	.30*** N = 293	.12 N = 228
H11 Personality Clashes	-.11 N = 303	.27*** N = 262	.39*** N = 297	.17* N = 231
H12 Activity	-.09 N = 296	.18** N = 259	.36*** N = 291	.33*** N = 226
H13 Supervision	-.09 N = 301	.23*** N = 261	.35*** N = 295	.21** N = 229
Total Hassles	-.18** N = 278	.36*** N = 242	.48*** N = 274	.30*** N = 213

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed)

There were no gender differences on the *Kruskal-Wallis* median tests for the hassles factors or for the total hassles variable (all $p > .05$).

The Uplifts Scale

Organizational uplifts were measured at Time 2 with the Police Daily Hassles and Uplifts Scale (Hart, 1996). The total uplifts mean score ($N = 280$) was 162.61, $SD = 38.40$. Scores ranged from 28 – 255. The highest individual mean score was generated from the other response ($M = 4.19$, $N = 16$). The other spaces allowed the recruits to specify any other uplifts that they wanted to list.

Uplifts Scale other responses

Recruits listed 22 uplifts in the two other spaces. Responses were coded using the operational and organizational factors of the Uplifts Scale as a guide. Many of the recruits took the opportunity to describe events already listed in the Uplifts Scale and their responses were all organizational items. These were listed in descending numerical order, and actual examples in the recruits' own words were listed (personal communications, 1999).

- *The Job Itself* ($N = 8$). Examples, "Fun at work"; "I enjoy my work"; "Enjoying everything".
- *Coworkers* ($N = 6$). Examples, "Being able to trust workmates under pressure"; "Knowing your workmates will back you"; "Support from the police family".
- *Customer Satisfaction* ($N = 4$). Examples, "Seeing people with shit lives smile"; "People contact".
- *Workplace Management* ($N = 3$). Examples, "Working in a team environment with Section"; "Working behind a desk".
- *Work Schedule* ($N = 1$). For example, "Flexibility within work hours".

Uplifts individual items

Of the individual items, the highest mean scores were from the following items:

- Doing challenging work $M = 3.97$, (possible range 0 - 5), $N = 306$.
- Having variety in my work $M = 3.96$, (possible range 0 - 5), $N = 307$.
- Doing interesting work $M = 3.90$, (possible range 0 - 5), $N = 307$.
- Getting along with other staff $M = 3.88$, (possible range 0 - 5), $N = 307$.

Uplifts factors

The individual items were combined into 11 uplifts factors (see Table 8.16). Means were scaled to 100 (by computing the percentage of the mean score divided by the maximum possible range) to facilitate comparisons.

Table 8.16

The Uplifts Factors: Means, Scaled Means, Number of Items, Possible Range, and Number of Respondents

Factor #	Factor	# of Items	Possible Range	M	M Scaled to 100	N
1	The Job Itself	5	0 - 25	18.96	75.84	306
2	Customer Satisfaction	2	0 - 10	7.22	72.20	302
3	Workload	4	0 - 20	13.53	67.65	301
4	Work Schedule	2	0 - 10	5.26	52.60	304
5	Administration	3	0 - 15	8.30	55.33	298
6	Workplace Management	9	0 - 45	30.15	67.00	297
7	Amenities	4	0 - 20	11.14	55.70	301
8	Equipment/Resources	4	0 - 20	9.88	49.40	301
9	Coworkers	8	0 - 40	28.26	70.65	301
10	Decision Making	6	0 - 30	18.91	63.03	298
11	Family	4	0 - 20	11.08	55.40	297

Pearsons r tests were performed between the uplifts variables and other study measures (see Table 8.17).

Table 8.17

Pearsons r Tests Between the Uplifts Total and Factors and the Study Measures: Health T2, IES T2, HSCL-21 T2, and PTGI

Variable	Health T2	IES T2	HSCL-21 T2	PTGI
<i>1 The Job Itself</i>	.23*** N = 301	-.03 N = 261	-.17** N = 295	.09 N = 231
<i>2 Customer Satisfaction</i>	.13* N = 297	-.04 N = 258	-.07 N = 291	.13* N = 228
<i>3 Workload</i>	.17** N = 296	-.00 N = 258	-.13* N = 291	.13* N = 227
<i>4 Work Schedule</i>	.19** N = 299	-.14* N = 260	-.20** N = 293	-.00 N = 229
<i>5 Administration</i>	.19** N = 293	-.05 N = 254	-.14* N = 287	.12 N = 225
<i>6 Workplace Management</i>	.20** N = 292	-.14* N = 254	-.14* N = 286	.12 N = 225
<i>7 Amenities</i>	.18** N = 296	-.10 N = 257	-.13* N = 290	.09 N = 227
<i>8 Equipment/Resources</i>	.13* N = 296	-.05 N = 257	-.15* N = 291	-.00 N = 230
<i>9 Coworkers</i>	.25*** N = 296	.02 N = 258	-.09 N = 290	.22** N = 227
<i>10 Decision Making</i>	.21*** N = 293	.00 N = 256	-.20** N = 287	.13 N = 225
<i>11 Family</i>	.13* N = 292	-.09 N = 254	-.20** N = 286	.13 N = 224
<i>Uplifts Total</i>	.24*** N = 275	-.09 N = 239	-.22*** N = 270	.11 N = 214

* $p < .05$ ** $p < .01$ *** $p < .001$

(two-tailed)

Kruskal-Wallis median tests on the hassles factors and total found one significant gender difference. This was for Factor 11 family, $\chi^2(1, N = 297) = 5.59, p < .05$. The family mean for females ($M = 10.36, N = 83$) was significantly lower than the mean for males ($M = 11.36, N = 214$). There were no gender differences on the *Kruskal-Wallis* median tests for the rest of the uplifts factors or for the total uplifts variable (all $p > .05$).

The Posttraumatic Growth Inventory

The Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996) assessed symptoms of posttraumatic growth at Time 2 only. The mean score on the PTGI was 44.91, $SD = 20.07, N = 233$. Scores ranged from 21 - 122. The possible range was 21 - 126. Eighty-one recruits did not complete the PTGI. Of the recruits ($N = 233$) who completed this scale 49.35% scored <40, 43.78% scored 40 to 60, and 6.87% scored over 60.

PTGI factors

The PTGI has five factors

- *New Possibilities* (5 items) $M = 8.76, SD = 5.09, N = 244$. Scores ranged from 5 - 27 (the highest possible score was 30), 88.54% of the respondents scored from 5 - 15.
- *Relating to Others* (7 items) $M = 15.23, SD = 7.56, N = 239$. Scores ranged from 7 - 36 (the highest possible score was 42), 88.70% of the respondents scored from 7 - 25.
- *Personal Strength* (4 items) $M = 10.32, SD = 4.77, N = 241$. Scores ranged from 4 - 2 (the highest possible score was 24), 82.98% of the respondents scored from 4 - 15.
- *Appreciation of Life* (3 items) $M = 7.61, SD = 3.90, N = 246$. Scores ranged from 3 - 18 (the highest possible score was 18), 89.21% of the respondents scored from 3 - 12.
- *Spiritual Change* (2 items) $M = 3.03, SD = 2.04, N = 243$. Scores ranged from 2 - 12 (the highest possible score was 12), 83.95% of the respondents scored from 2 - 4.

The PTGI correlated with the IES T2, $r = .37$, $p < .001$, the HSCL-21 T2, $r = .37$, $p < .001$, and the PANAS PA T2, $r = .14$, $p < .05$. There were no significant correlations between the PTGI and Health T2, and the PTGI and PANAS PA T2 (all $p > .05$).

Part Four Multiple Regression Analyses and Hypotheses

Testing

Overview: the data is examined and organized for multiple regression analyses; possible control variables are evaluated; the variables are checked for multicollinearity; the predictor variables are centered; and the moderating variables created. Lastly, the variables are transformed to meet the requirements of statistical assumptions (normality, linearity, and homoscedasticity). Four hierarchical regressions are performed to test the research hypotheses, and additional post-hoc analyses are reported.

Data Screening and Transformations for Multiple Regression Analyses

For multivariate analysis the deletion of cases with missing values would have resulted in serious loss of data. Missing data was therefore replaced by the mean of the relevant variable for each response set (mean substitution). This allowed all the regressions to be performed on the response set of 314 cases. Means substitution is an established procedure for dealing with missing data (Hair, Anderson et al., 1998; Tabachnick & Fidell, 1989). To check the effects of this procedure the regressions were repeated with non-mean substituted data and this made very little difference to the outcomes of the analyses. Preliminary regressions were run to check for outliers using the Mahalanobis distance criteria for elimination. No cases met the $p < .001$ criteria for Mahalanobis distance elimination (Tabachnick & Fidell, 1989).

Pearsons r tests were performed between the biographical variables and the dependent variables to check for possible control variables. The nominal biographical variables (education, ethnicity, and marital status) were dichotomized to allow the use of the Pearsons r tests. The variables were checked for multicollinearity, and the predictor variables (the independent variables) were centered. The moderating variables (the product terms) were then created. Lastly the variables were transformed to meet the requirements of statistical assumptions.

Hierarchical regression (stepwise regression in blocks) was selected to evaluate the hypotheses. This type of multiple regression allowed the entry of the variables to be controlled, whether entered singularly or in blocks (steps). This allowed the proportion of the variance explained by the variables entered at each consecutive stage, to be determined after variance due to other independent variables (IVs) or blocks of IVs was accounted for (Tabachnick & Fidell, 1989). The terms *regression/multiple regression* will from now on refer to *hierarchical regression* unless specified otherwise. A possible limitation to multiple regression analysis concerns the ratio of the number of cases to the number of independent variables, unless this ratio is substantial Tabachnick and Fidell (1989) consider the outcomes will be perfect but meaningless. These authors recommend at the bare minimum to have at least 5 times more cases than IVs, and ideally to have 20 more cases than IVs. For the present study the ratio of cases to IVs was over 50 to one. Tabachnick and Fidell (1989) recommend for statistical analyses variables are not split into measures that contain less than 10% of their constituent cases. The biographical variables in this study were either naturally dichotomous (gender), or were combined into dichotomous variables (educational qualifications, ethnicity, and marital status) to satisfy this recommendation.

Dependent and independent variables

In this study the dependent variables (DVs) were psychological and physical health constructs. These were: traumatic stress (IES T2); psychological distress (HSCL-21 T2); self-rated physical health (Health T2); and posttraumatic growth (PTGI). The independent variables were entered as possible predictors of DV variance. These were: police traumatic events (TSS T2); and the organizational variables (hassles and uplifts).

Baseline scores on the DVs were entered at Step 1 as controls, these were: IES T1; HSCL-21 T1; and Health T1. There was no Time 1 measure for posttraumatic growth.

Control variables

Education was dichotomized by creating the categories *no school qualifications + any school qualifications* versus *tertiary*. This reduced the five available responses to two categories. It was not possible to dichotomize the responses into *no school* versus *any school qualifications* as *no school* had only 6 responses. This was insufficient to reach the prerequisite 10/90% split for statistical analysis as recommended by Tabachnick and Fidell (1989). The four responses to the ethnicity question raised the same issue: as 83% respondents were *European*; 8% were *Maori*; 2% were *Pacific Islander*; and 5% were *Other*. The data was therefore dichotomized as *European* versus *the rest*. Similarly for the responses to the marital status question: 50% were *never married*; 44% were *married*; 6% were *separated or divorced*; and none were *widowed*. The procedure to dichotomize this variable was to compare *never married* with *married*. No significant outcomes resulted from the Pearsons *r* tests between the biographical variables (age, gender, marital status, ethnicity, and educational qualifications) and the DVs. Thus, only the Time 1 scores on the DVs were entered as control variables for the regression analyses.

The TSS T2 variable was entered into each regression equation as an IV, to assess the impact of police traumatic events. This variable summed the different individual traumatic events described in the Time 2 Traumatic Stress Schedule. This variable significantly correlated with all the DVs used in this study (see Table 8.18). The variable MTSS T2, which multiplied by two the score for traumatic events that had been experienced more than once, did not result in higher correlations. The on-duty traumatic events variable (TSS on-duty) produced lower correlations. The variable TSS T1 (prior different total traumatic events) was not significantly related to any of the baseline measures of the DVs.

Table 8.18

Pearsons r Tests between Traumatic Events Variables and the Study Variables: IES T1, HSCL-21 T1, and Health T1

Variable	IES T1	HSCL-21 T1	Health T1	
<i>TSS T1</i>	.01 <i>N</i> = 262	-.02 <i>N</i> = 293	-.10 <i>N</i> = 311	
<i>Variable</i>	<i>IES T2</i>	<i>HSCL-21 T2</i>	<i>Health T2</i>	<i>PTGI</i>
<i>TSS T2</i>	.30*** <i>N</i> = 266	.15* <i>N</i> = 299	-.00 <i>N</i> = 307	.16* <i>N</i> = 232
<i>MTSS T2</i>	.30*** <i>N</i> = 266	.16** <i>N</i> = 299	-.00 <i>N</i> = 307	.15* <i>N</i> = 232
<i>TSS on-duty</i>	.28*** <i>N</i> = 265	.13* <i>N</i> = 298	-.01 <i>N</i> = 306	.14* <i>N</i> = 231
* <i>p</i> < .05	** <i>p</i> < .01	*** <i>p</i> < .001	(two-tailed)	

Multicollinearity

Highly correlated variables ($r = .90$ and above) would be a problem for a correlation matrix, as these variables would measure very similar constructs (Tabachnick & Fidell, 1989). To test for potential multicollinearity Pearson's r tests were performed between the IVs. As $r = .35$ was the highest correlation multicollinearity was not a concern (see Table 8.19).

Table 8.19

Pearsons r Tests Between the Independent Variables

Variable	TSS T2	Hassles	Uplifts
<i>TSS T2</i>	1.00 <i>N</i> = 312	.35** <i>N</i> = 281	-.06 <i>N</i> = 278
<i>Hassles</i>	.35** <i>N</i> = 281	1.00 <i>N</i> = 283	-.16* <i>N</i> = 263
<i>Uplifts</i>	-.06 <i>N</i> = 278	-.16* <i>N</i> = 263	1.00 <i>N</i> = 280
* <i>p</i> < .05	** <i>p</i> < .01	(two-tailed)	

Moderating variables

Prior to the formation of the moderating variables, the relevant individual independent variables were centered. Centering the variables created a mean of zero, and this reduced potential multicollinearity problems for these product terms. Researchers have indicated that multicollinearity can be of particular concern if the response sets contain large numbers (Jaccard et al., 1990; Statsoft, 1994). Three variables were centered: these were TSS T2, hassles, and uplifts. The moderating variables were created by multiplying TSS T2 x Hassles, and TSS T2 x Uplifts. These variables assessed the moderating effects of daily organizational hassles and uplifts on the relationship between traumatic events and the DVs.

Transformations

The variables were examined to ensure they did not violate statistical assumptions. All the variables apart from hassles were found to have non-normal distributions. The ratios of skewness to the standard error of skewness were scrutinized for each variable. Variables with skewness ratios above three were transformed to normality (see Table 8.20). This procedure is recommend by Tabachnick and Fidell (1989).

Table 8.20

Transformations of the Multiple Regression Variables with the Ratio of Skewness/Standard Error of Skewness Reported Prior to and Following Transformation

Variables	Ratio	Transformation			
		Moderate Pos. Skewness = $\log_{10}(vx+1)^{##}$	Substantial Pos. Skewness = $\log_{10}(vx)^{\#}$ or $\log_{10}(vx+1)^{##}$	Severe Pos. Skewness = $1/vx$ (reflect + inverse)	Mod. Neg. Skewness = $\sqrt{k^{\alpha}-vx}$ reflect+sqrt
Health T1	-4.07				1.30
TSS T1	5.25	1.11 ^{##}			
IES T1	9.99		1.61 [#]		
HSCL-21 T1	6.72		1.73 [#]		
Health T2	-5.68				1.07
TSS T2	5.26		-1.45 ^{##}		
IES T2	8.52		-0.43 ^{##}		
HSCL-21 T2	10.03			0.07	
PTGI	5.37		0.84 [#]		
Uplifts	-3.40				-2.19
Hassles	2.37				
	(normal)				

Note. [#] Data set without zero.

^{##} Data set had a zero, therefore 1 was added to each score.

^α $k =$ a constant from which each score was subtracted so that the smallest score was 1; for these data sets it was equal to the largest score + 1.

Transformations enabled the data to be analyzed with quantitative statistical procedures; however, they generated difficulties with interpretation. For example, the interpretation of a reflected variable becomes counterintuitive; a positive *Beta* requires a negative interpretation. All the regressions were repeated with non-transformed variables, and there were no changes in the significant results.

Hierarchical Multiple Regression

Four hierarchical regressions were performed to test the research hypotheses with the DVs: IES T2 (traumatic stress); HSCL-21 T2 (psychological distress); Health T2 (physical health); and the PTGI (posttraumatic growth).

Regression One: Regression of IES T2

Three hypotheses concerned IES outcomes and were tested by this hierarchical regression equation. These were hypotheses one, four, and six:

- Hypothesis one: traumatic events are positively related to traumatic stress outcomes as measured by the IES.
- Hypothesis four: organizational stressors moderate the relationship between traumatic events and traumatic stress outcomes, as measured by the IES, such that the higher the number of organizational stressors reported, the stronger the relationship between traumatic events and IES outcomes.
- Hypothesis six: organizational uplifts moderate the relationship between traumatic events and traumatic stress outcomes, as measured by the IES, such that the higher the number of organizational uplifts reported, the weaker the relationship between traumatic events and IES outcomes.

To test these hypotheses the IVs were entered into the regression equation in four steps. Step 1 controlled for baseline traumatic stress effects on the DV (IES T2) variance by entering IES T1. Step 2 assessed the contribution of TSS T2 (police total traumatic events) on the DV variance, while controlling for the IES T1. Step 3 assessed the contribution to the DV variance of the police organizational IVs (hassles and uplifts), while controlling for the previous blocks of variables. At Step 4 the moderating variables (TSS T2 x Hassles and TSS T2 x Uplifts) were entered. This tested the moderating effects of hassles and uplifts on the relationship between traumatic events and the DV while controlling for the previous blocks of IVs (see Table 8.21).

The Standardized Regression Coefficients (*Beta*) for each variable within the steps were reported. The total variance explained by each step of the equation was provided (R^2 and Adjusted R^2). The added variance explained by each block of variables while controlling for the previous blocks (R^2 Change) was reported. The unique contribution that each variable made to the total DV variance (sr^2) was reported at the final step of the regression.

Table 8.21

Hierarchical Multiple Regression of IES T2 Scores on IES T1, TSS T2, Hassles and Uplifts, TSS T2 x Hassles and TSS T2 x Uplifts, Showing Standardized Regression Coefficients (Beta), Multiple R, R², Adjusted R², R² Change, and Step 4 Squared Semi-partial Correlations (sr²) N = 314

Predictors	Step 1	Step 2	Step 3	Step 4	Step 4 sr ²
<i>Step 1: Control</i>					
IES T1	.08	.08	.05	.05	.00
<i>Step 2: Traumatic Events Variable</i>					
TSS T2		.23 ^{***}	.16 ^{**}	.16 ^{**}	.02 ^{**}
<i>Step 3: Organizational Variables</i>					
Hassles			.24 ^{***}	.23 ^{***}	.05 ^{***}
Uplifts			.02	.02	.00
<i>Step 4: Moderating Variables</i>					
TSS T2 x Hassles				.04	.00
TSS T2 x Uplifts				-.05	.00
Multiple R	.08	.24	.33	.34	
Total R ²	.01	.06	.11	.12	
Adjusted R ²	.00	.05 ^{***}	.10 ^{***}	.10 ^{***}	
R ² Change		.05 ^{***}	.05 ^{***}	.00	

** $p < .01$ *** $p < .001$

At Step 1 the baseline IES variable was not significant in accounting for variance on the DV. IES T1 was not a predictor of the DV variance when the other variables were controlled, even although there was a small but significant correlation of $r = .15, p < .05, N = 225$ between the IES T1 and the IES T2. At Step 2 the addition of TSS T2 explained 5% of the total DV variance (Adjusted $R^2 = .05, F(2, 311) = 9.66, p < .001$). A significant amount of the DV variance was explained by the addition of this variable (R^2 Change = .05, $p < .001$). At Step 3 with the inclusion of the organizational variables total variance explained increased to 10% (Adjusted $R^2 = .10, F(4, 309) = 9.74, p < .001$). The R^2 Change of .05 was significant, $p < .001$. The addition of the Step 4 moderating variables did not result in a significant R^2 Change and the total variance accounted for remained at 10% (Adjusted $R^2 = .10, F(6, 307) = 6.69, p < .001$).

An examination of the *Beta* and sr^2 values determined the impact of the individual IVs on the DV variance. The prediction in hypothesis one that traumatic events are positively related to traumatic stress outcomes was supported. When entered at Step 2 TSS T2 was significant ($Beta = .23, p < .001$), and remained so through all subsequent stages when other variables were entered. This effect was in the positive direction as predicted by hypothesis one.

Hassles did not moderate the relationship between traumatic events and traumatic stress outcomes in a positive direction as predicted by hypothesis four. When the moderating variable TSS T2 x Hassles entered the regression its *Beta* was not significant. This variable did not affect the R^2 Change, and the sr^2 for this moderating variable was zero. Hypothesis four was therefore not supported. Although not looked for as a research prediction, this regression indicated that hassles had a direct impact upon the DV. This was indicated by significant *Betas* at Steps Three and Four and a final significant sr^2 of .05. Of all the IVs, hassles produced the biggest positive direct effect on the IES T2 scores, but this variable was not significant as a predictor of DV variance when assessed as a moderating variable when other variables were controlled.

The prediction in hypothesis six that uplifts would moderate the relationship between traumatic events and traumatic stress outcomes in a negative direction was not supported. The moderating variable TSS T2 x Uplifts had an insignificant *Beta* and the

sr^2 at the final step was zero. Uplifts did not effect the IES T2 variance in any way when other variables were controlled.

The regression was repeated using non-transformed variables and the same pattern of significant variables occurred. The signs of the *Betas* also followed the same pattern.

Regression Two: Regression of HSCL-21 T2

Four hypotheses were concerned with psychological distress outcomes and were tested by this hierarchical regression equation. These were hypotheses three, five, seven, and eight:

- Hypothesis three: traumatic events are positively related to psychological distress outcomes, as measured by the HSCL-21, and negatively related to physical health outcomes.
- Hypothesis five: organizational stressors are positively related to psychological distress outcomes, as measured by the HSCL-21, and negatively related to physical health outcomes.
- Hypothesis seven: organizational uplifts are negatively related to psychological distress outcomes, as measured by the HSCL-21, and positively related to physical health outcomes.
- Hypothesis eight: organizational stressors are more positively related to psychological distress outcomes, as measured by the HSCL-21, than are traumatic events.

To test the four hypotheses the independent variables were entered into the regression equation in four steps. Step 1 controlled for baseline psychological distress effects on the DV (IES T2) variance by entering HSCL-21 T1 at Step 1. Step 2 assessed the contribution of TSS T2 (total police traumatic events), while controlling for the HSCL-21 T1. Step 3 added the contribution to the DV variance of the organizational IVs (hassles and uplifts), while controlling for the previous blocks of variables. At Step 4 the moderating variables (TSS T2 x Hassles, and TSS T2 x Uplifts) were entered. This

tested the moderating effects of hassles and uplifts on the relationship between traumatic events and the DV while controlling for the previous blocks of IVs (see Table 8.22).

The Standardized Regression Coefficients (*Beta*) for each variable within the steps were reported. The total variance explained by each step of the equations was provided (R^2 and Adjusted R^2). The added variance explained by each block of variables while controlling for the previous blocks (R^2 Change) was reported. The unique contribution that each variable made to the total DV variance (sr^2) was reported at the final step of the regression.

Table 8.22

Hierarchical Multiple Regression of HSCL-21 T2 Scores on HSCL-21 T1, TSS T2, Hassles and Uplifts, TSS T2 x Hassles and TSS T2 x Uplifts, Showing Standardized Regression Coefficients (Beta), Multiple R, R², Adjusted R², R² Change, and Step 4 Squared Semi-partial Correlations (sr²) (N = 314)

Predictors	Step 1	Step 2	Step 3	Step 4	Step 4 sr ²
<i>Step 1: Control</i>					
HSCL-21 T1	-.23 ^{***}	-.23 ^{***}	-.17 ^{**}	-.18 ^{**}	.03 ^{**}
<i>Step 2: Traumatic Events Variable</i>					
TSS T2		-.08	-.01	-.01	.00
<i>Step 3: Organizational Variables</i>					
Hassles			-.23 ^{***}	-.22 ^{***}	.04 ^{***}
Uplifts			-.04	-.04	.00
<i>Step 4: Moderating Variables</i>					
TSS T2 x Hassles				-.04	.00
TSS T2 x Uplifts				.02	.00
Multiple R	.23	.24	.33	.33	
Total R ²	.05	.06	.11	.11	
Adjusted R ²	.05 ^{***}	.05 ^{***}	.09 ^{***}	.09 ^{***}	
R ² Change		.01	.05 ^{***}	.00	

** $p < .01$

*** $p < .001$

At Step 1 5% of the variance (Adjusted $R^2 = .05$, $F(1, 312) = 16.88$, $p < .001$) was explained by the HSCL-21 T1. At Step 2 the addition of TSS T2 into the regression equation did not alter the amount of DV variance explained, this remained at 5% and the R^2 Change was not significant. This result indicated that TSS T2 did not influence DV variance when the time one psychological distress score was accounted for. At Step 3 with the inclusion of the organizational variables total variance explained increased by a significant jump (4%) up to 9% (Adjusted $R^2 = .09$, $F(4, 309) = 9.20$, $p < .001$). The R^2 Change of .05 was significant ($p < .001$). The organizational variables were significant in explaining total DV variance even after the entry of the other independent variables (HSCL-21 T1 and TSS T2). The addition of the Step 4 moderating variables did not result in any significant change. Adjusted R^2 remained at .09 and there was no R^2 Change.

An examination of the *Beta* and sr^2 values determined the impact of the individual IVs on the DV variance. The *Beta* for HSCL-21 T1 was significant when entered and remained so throughout the subsequent steps of the regression. This was not surprising given a correlation of $r = .43$, $p < .001$, $N = 284$ between the HSCL-21 T1 and T2 scores. The effect of this variable upon the variance did slightly lessen with the inclusion of subsequent variables, reducing from -.23 at Step 1 to -.18 at Step 4. The prediction in hypothesis three that traumatic events were positively related to psychological distress outcomes was not supported. No significant *Betas* occurred for TSS T2 and its sr^2 at the final step was zero. Traumatic events did not explain psychological distress outcomes at all when other variables were controlled.

Hypothesis five predicted that organizational stressors are positively related to psychological distress outcomes. Hassles entered at Step 3 with a significant *Beta* of -.23 and remained significant at Step 4 with a *Beta* of -.22. Hassles generated negative *Betas* because the DV had been transformed using an inverse transformation. Because of this a positive interpretation of direction of the *Betas* was required. Examining the sr^2 results indicated that hassles made a significant contribution to the DV variance even after the other independent variables had entered the regression. The hassles variable

had a significant sr^2 of .04 and had the strongest impact of all the IVs on psychological distress outcomes. The prediction in hypothesis five that hassles are positively related to psychological distress outcomes was supported.

Hypothesis seven predicted that organizational uplifts are negatively related to psychological distress outcomes. This prediction was not supported. Uplifts had a negligible effect on psychological distress outcomes. The *Beta* for uplifts was not significant. TSS T2 x Uplifts generated a *Beta* of -.02 and a sr^2 of zero, neither result was significant. Uplifts did not contribute to the variance of the DV when other variables were controlled.

Hypothesis eight predicted that organizational stressors are more positively related to psychological distress than are traumatic events. This hypothesis was supported. Traumatic events had a negligible impact on recruits' psychological distress outcomes. Traumatic events neither significantly increased nor decreased HSCL-21 T2 outcomes. TSS T2 generated a *Beta* of .08 that was not significant, and its sr^2 was zero. Hassles, as discussed in relation to hypothesis eight, had the strongest significant effect of all the IVs on the DV variance when other variables were controlled.

The regression was repeated using non-transformed variables and the same pattern of significant variables occurred. All the signs of the significant *Betas* were positive; this indicated that HSCL-21 T1 and hassles did predict higher HSCL-21 T2 scores, even after the other variables (TSS T2 and uplifts) had entered the regression.

Regression Three: Regression of Health T2

Three hypotheses were concerned with physical health outcomes, and were tested by this hierarchical regression equation. These were hypotheses three, five, and seven:

- Hypothesis three: traumatic events are positively related to psychological distress outcomes, as measured by the HSCL-21, and negatively related to physical health outcomes.

- Hypothesis five: organizational stressors are positively related to psychological distress outcomes, as measured by the HSCL-21, and negatively related to physical health outcomes.
- Hypothesis seven: organizational uplifts are negatively related to psychological distress outcomes, as measured by the HSCL-21, and positively related to physical health outcomes.

To test the three hypotheses the independent variables were entered into the regression equation in four steps. Step 1 controlled for baseline psychological health effects on the DV (IES T2) variance by entering Health T1 first. Step 2 assessed the contribution of TSS T2 (total police traumatic events), while controlling for Health T1. Step 3 added the contribution to the DV variance of the organizational IVs (hassles and uplifts) while controlling for the previous blocks of variables. At Step 4 the moderating variables (TSS T2 x Hassles, and TSS T2 x Uplifts) were entered. This tested the moderating effects of hassles and uplifts on the relationship between traumatic events and the DV while controlling for the previous blocks of IVs (see Table 8.23).

The Standardized Regression Coefficients (*Beta*) for each variable within the steps were reported. Total variance explained by each step of the equation was provided (R^2 and Adjusted R^2). The added variance explained by each block of variables while controlling for the previous blocks (R^2 Change) was reported. The unique contribution that each variable makes to the total DV variance (sr^2) was reported at the final step of the regression.

Table 8.23

Hierarchical Multiple Regression of Health T2 Scores on Health T1, TSS T2, Hassles and Uplifts, TSS T2 x Hassles and TSS T2 x Uplifts Showing Standardized Regression Coefficients (Beta), Multiple R, R², Adjusted R², R² Change, and Step 4 Squared Semi-partial Correlations (sr²) N = 314

Predictors	Step 1	Step 2	Step 3	Step 4	Step 4 sr ²
<i>Step 1: Control</i>					
Health T1	.41 ^{***}	.41 ^{***}	.38 ^{***}	.38 ^{***}	.14 ^{***}
<i>Step 2: Traumatic Events Variable</i>					
TSS T2		.03	.00	.01	.00
<i>Step 3: Organizational Variables</i>					
Hassles			.07	.06	.00
Uplifts			.15 ^{**}	.14 ^{**}	.02 ^{**}
<i>Step 4: Moderating Variables</i>					
TSS T2 x Hassles				.01	.00
TSS T2 x Uplifts				.05	.00
Multiple R	.41	.41	.44	.44	
Total R ²	.17	.17	.20	.20	
Adjusted R ²	.16 ^{***}	.16 ^{***}	.19 ^{***}	.18 ^{***}	
R ² Change		.00	.03 ^{**}	.00	

** $p < .01$

*** $p < .001$

At Step 1 the control variable Health T1 was found to explain 16% of the variance of Health T2. This was significant (Adjusted $R^2 = .16$, $F(1, 312) = 62.05$, $p < .001$). TSS T2 then entered the regression equation. The Adjusted R^2 did not change, and the *Beta* of .03 was not significant. At Step 3 the inclusion of the organizational variables explained a significant amount of the DV variance. Total variance accounted for increased to 19% (Adjusted $R^2 = .19$, $F(4, 309) = 18.84$, $p < .001$). The R^2 Change was significant at this step ($p < .05$); this confirmed the importance of the organizational uplifts in explaining Health T2 variance after the Step 1 and Step 2 variables (Health T1, TSS T2, and organizational stressors) were controlled. The addition of the Step 4 moderating variables did not result in a significant R^2 Change and the total variance accounted for reduced slightly to 18% (Adjusted $R^2 = .18$, $F(6, 307) = 12.70$, $p < .001$).

An examination of the *Beta* and sr^2 values determined the impact of the individual IVs on the DV variance. Health T1 was the strongest predictor for the DV variance. Health T1 entered with a positive *Beta* of .41, and the Health T1 *Betas* remained significant throughout all the regression steps when the other variables were controlled. This was not surprising given the significant correlation between Health T1 and Health T2 variables of $r = .40$, $p < .001$, $N = 308$. At the final Step Health T1 had the largest sr^2 of .14, $p < .001$, this indicated that it was the most significant predictor of all the IVs.

Hypothesis three predicted that traumatic events are negatively related to health. This was not supported by the regression. TSS T2 did not have a significant impact on the variance of Health T2 after Health T1 was controlled.

Hypothesis five predicted that organizational hassles are negatively related to health. This prediction was not supported. The *Betas* for hassles at Steps Three and Four were not significant. The sr^2 for hassles was zero; this variable did not contribute to the variance of the DV after the other variables (Health T1, TSS T2, and uplifts) were controlled.

Hypothesis seven predicted that uplifts are positively related to health. This was confirmed by the regression. Uplifts were the only IV (other than the control) to have any effect on Health T2. Uplifts entered with a significant *Beta* of .15, and the uplifts

Betas remained significant throughout all the subsequent steps even after the entry of Health T1, TSS T2, and hassles. At Step 4 of the regression uplifts had a significant positive *Beta* of .14, $p < .01$ and a sr^2 of .02, $p < .01$.

The regression was repeated using non-transformed variables, and the same variables reached significance. The signs of the *Betas* for the significant IVs were positive; this indicated that these IVs predicted increased Health T2 scores.

Regression Four: Regression of PTGI

Hypothesis two was the only hypothesis related to PTGI outcomes, and was tested by this hierarchical regression equation:

- Hypothesis two: traumatic events are positively related to posttraumatic growth, as measured by the PTGI.

To test this hypothesis the IVs were entered into the regression equation in three steps. Step 1 assessed the contribution of TSS T2 (total police traumatic events) on the DV variance. Step 2 added the contribution of the organizational IVs (hassles and uplifts) while controlling for the previous variable. At Step 3 the moderating variables (TSS T2 x Hassles, and TSS T2 x Uplifts) were entered. This tested the moderating effects of hassles and uplifts on the relationship between traumatic events and the DV while controlling for the previous blocks of IVs (see Table 8.24).

The Standardized Regression Coefficients (*Beta*) for each variable within the steps were reported. Total variance explained by each step of the equation was provided (R^2 and Adjusted R^2). The added variance explained by each block of variables while controlling for the previous blocks (R^2 Change) was reported. The unique contribution that each variable made to the total DV variance (sr^2) was reported at the final step of the regression.

Table 8.24

Hierarchical Multiple Regression of Posttraumatic Growth Inventory Scores on TSS T2, Hassles and Uplifts, TSS T2 x Hassles and TSS T2 x Uplifts Showing Standardized Regression Coefficients (Beta), Multiple R, R², Adjusted R², R² Change, and Step 3 Squared Semi-partial Correlations (sr²) N = 314

Predictors	Step 1	Step 2	Step 3	Step 3 sr ²
<i>Step 1: Traumatic Events Variable</i>				
TSS T2	.13*	.07	.08	.01
<i>Step 2: Organizational Variables</i>				
Hassles		.24***	.23***	.04***
Uplifts		.17**	.18***	.03***
<i>Step 3: Moderating Variables</i>				
TSS T2 x Hassles			.02	.00
TSS T2 x Uplifts			.14**	.02**
Multiple R	.13	.29	.33	
Total R ²	.02	.09	.12	
Adjusted R ²	.01*	.08***	.09***	
R ² Change		.07***	.02*	

* $p < .05$ ** $p < .01$ *** $p < .001$

The entry of the variable TSS T2 into the regression equation had a significant impact upon the variance for posttraumatic growth. The Adjusted R² of .01 was significant in accounting for 1% of the DV variance. At Step 2 the organizational variables were

entered and this resulted in a weak but statistically significant increase in the Adjusted R^2 , which reached .08, $F(3, 310) = 9.71, p < .001$ and a significant R^2 Change of .07, $p < .001$. A weak moderating effect was determined at Step 3 with the introduction of the moderating variable TSS T2 x Uplifts. This resulted in the Adjusted R^2 increasing to .09, $F(5, 308) = 7.31, p < .001$. The R^2 Change of .02 was significant in accounting for 2% of DV variance.

An examination of the *Beta* and sr^2 values determined the impact of the individual IVs on the DV variance. Hypothesis two predicted that traumatic events are positively related to posttraumatic growth. This was supported only at Step 1 of this regression, as the TSS T2 *Beta* of .13 was significant at this point. TSS T2 had a direct impact on posttraumatic growth at Step 1, however, TSS T2 was not significant when the organizational variables were entered at Step 2. A weak positive moderating effect by uplifts on the relationship between traumatic events and posttraumatic growth could be determined at the final step after the other variables (TSS T2 and hassles) were controlled. This was indicated by a significant *Beta* of .14, $p < .01$ for TSS T2 x Uplifts and a significant sr^2 of .02, $p < .01$.

Posttraumatic Growth Moderating Effects

When the previous regression (regression four) was repeated using non-transformed variables the same pattern of significant variables occurred. All the signs for the *Betas* were positive and this indicated that uplifts increased posttraumatic growth, both directly, and as a moderator variable affecting the relationship between police traumatic event exposure and posttraumatic growth outcomes. The form of the moderating interaction was explored by splitting each variable at the median to form a dichotomy of high and low non-transformed scores (see Table 8.25), and the mean PTGI score of each group was plotted. Figure 1 shows the form of the interaction.

Table 8.25

Moderating effect of High and Low Uplifts Scores on the Relationship between Posttraumatic Growth Factor Scores and Traumatic Events High and Low Scores. Mean Scores for the PTGI (N = 233) are reported

	Low TSS T2 High Uplifts	Low TSS T2 Low Uplifts	High TSS T2 Low Uplifts	High TSS T2 High Uplifts
<i>PTGI</i>	43.20	44.30	42.50	49.80

Note. Median scores determined the high and low groups.

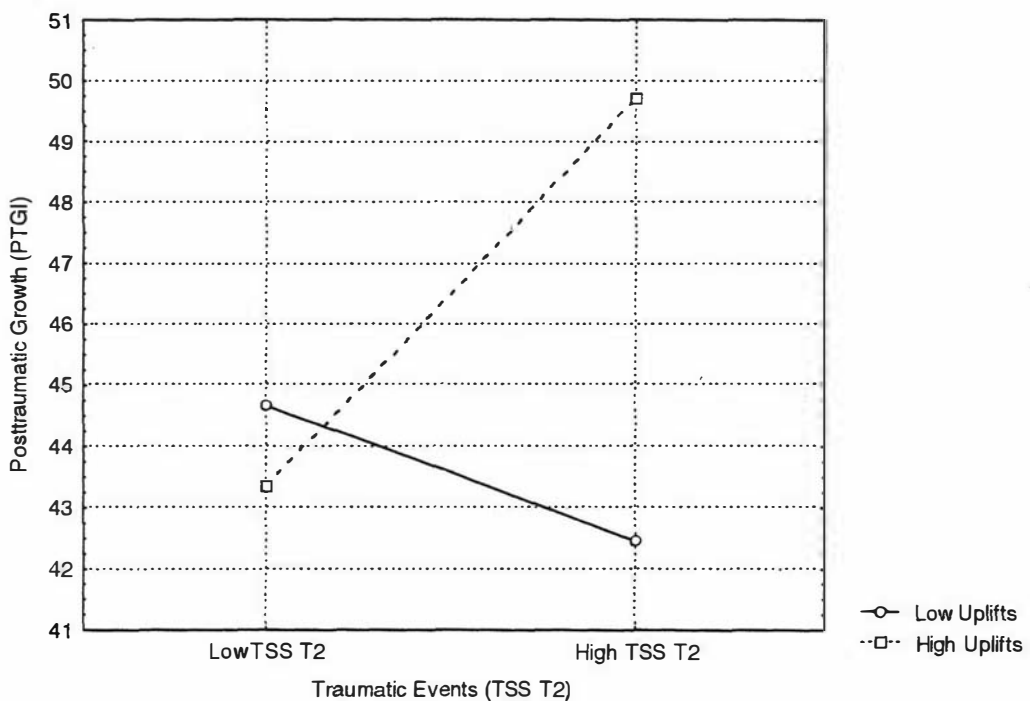


Figure 8.1. Moderating Effect of Uplifts on the Relationship between Traumatic Events and Posttraumatic Growth.

Posttraumatic growth was positively related to traumatic events if uplifts were high. If uplifts were low posttraumatic growth weakened and the relationship between posttraumatic growth and traumatic events was negative. Moderating effects were identified at the factor level, with uplifts influencing the relationship between TSS T2 and the DVs: new possibilities, relating to others, and appreciation of life. For these variables if traumatic events (TSS T2) were high, then the Posttraumatic Growth Inventory scores were significantly higher if uplifts were also high. Mean PTGI factor scores were determined for the non-transformed variables. These showed the moderating effect of uplifts on the relationship between traumatic events and three PTGI factors (see Table 8.26).

Table 8.26

Moderating effect of High and Low Uplifts Scores on the Relationship between Posttraumatic Growth Factor Scores and Traumatic Events High and Low Scores. Mean Scores for PTGI Factors are reported

<i>PTGI Factors:</i>	Low TSS T2 High Uplifts	Low TSS T2 Low Uplifts	High TSS T2 Low Uplifts	High TSS T2 High Uplifts
<i>New Possibilities</i> (<i>N</i> = 244)	9.90	9.90	8.10	9.33
<i>Relating to Others</i> (<i>N</i> = 329)	14.60	14.60	14.00	17.44
<i>Appreciation of Life</i> (<i>N</i> = 246)	6.60	6.70	7.40	8.45

Note. Median scores determined the high and low groups.

Figures 8.2 to 8.4 show the significant moderating effect of uplifts on the relationship between TSS T2 and the Posttraumatic Growth factors; new possibilities, relating to others, and appreciation of life.

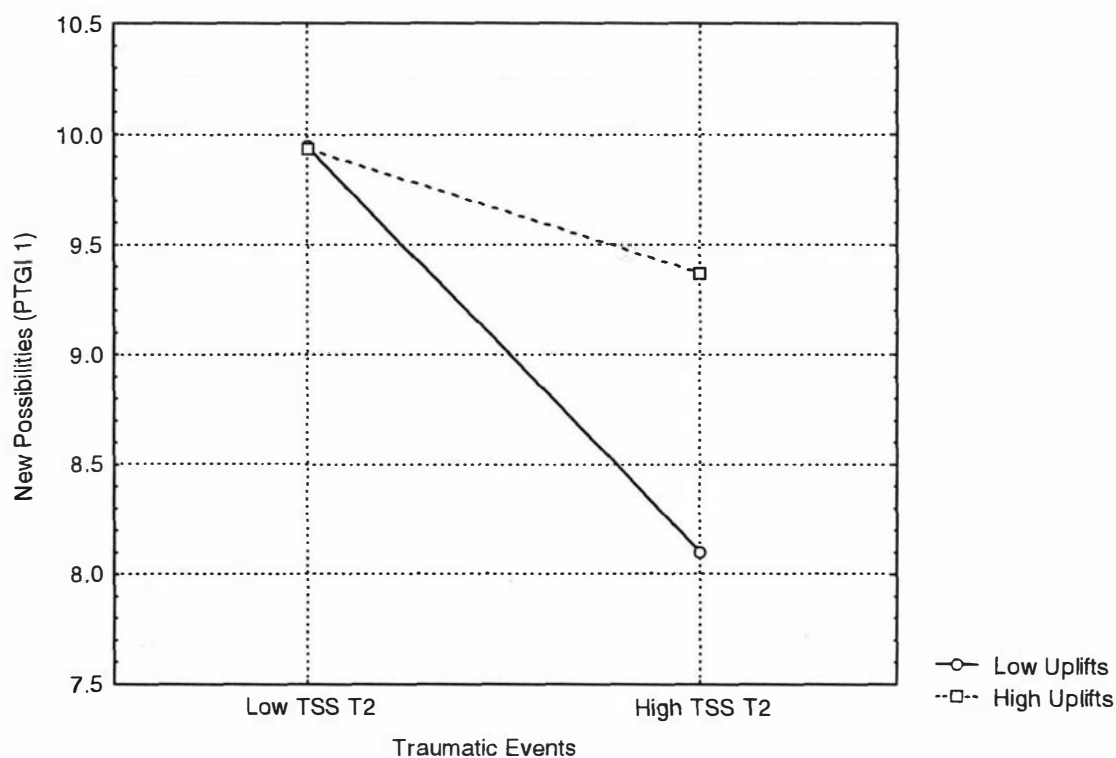


Figure 8.2. Moderating Effect of Uplifts on the Relationship between Traumatic Events and New Possibilities.

High numbers of traumatic events were negatively related to the posttraumatic growth factor new possibilities scores if numbers of uplifts were low. However, this relationship became significantly weaker if numbers of uplifts were high. This indicated comparatively higher amounts of posttraumatic growth for this factor when there were high numbers of uplifts.

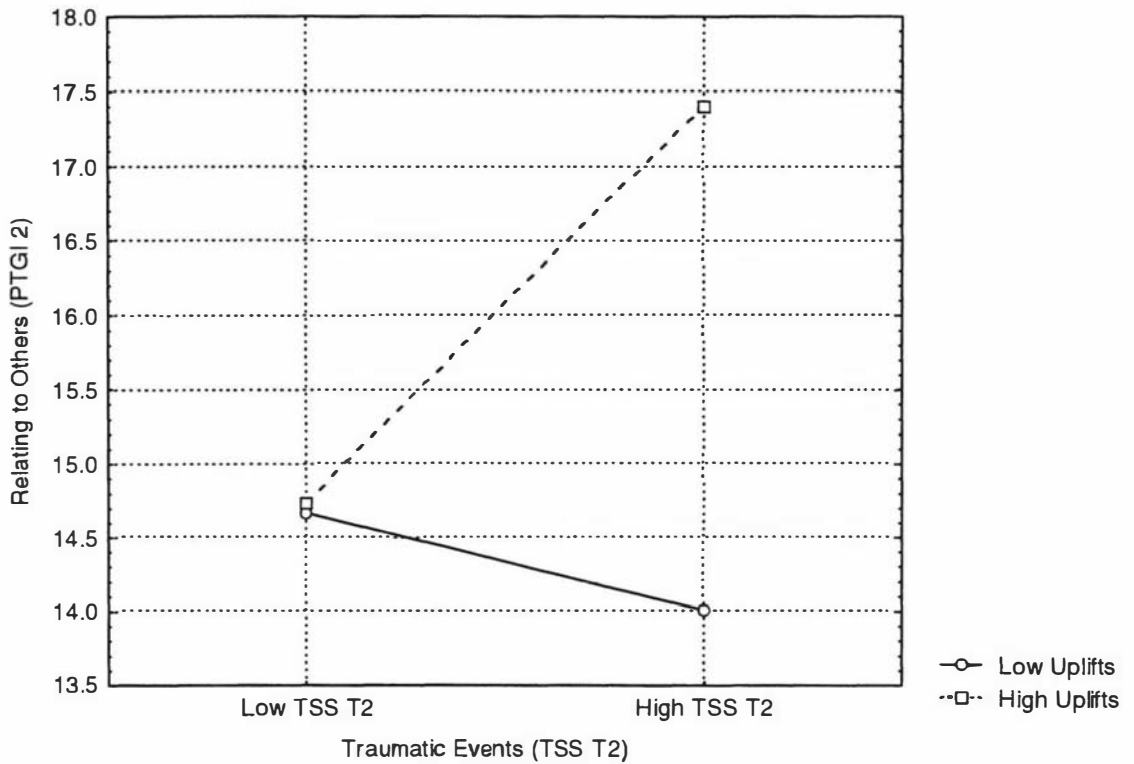


Figure 8.3. Moderating Effect of Uplifts on the Relationship between Traumatic Events and Relating to Others.

High numbers of traumatic events were negatively related to the posttraumatic growth factor relating to others scores if uplifts were low. However, if uplifts were high traumatic events were strongly and positively related to the posttraumatic growth factor relating to others scores. High numbers of uplift altered the direction of the relationship, and higher amounts of posttraumatic growth occurred for this factor when traumatic events were high.

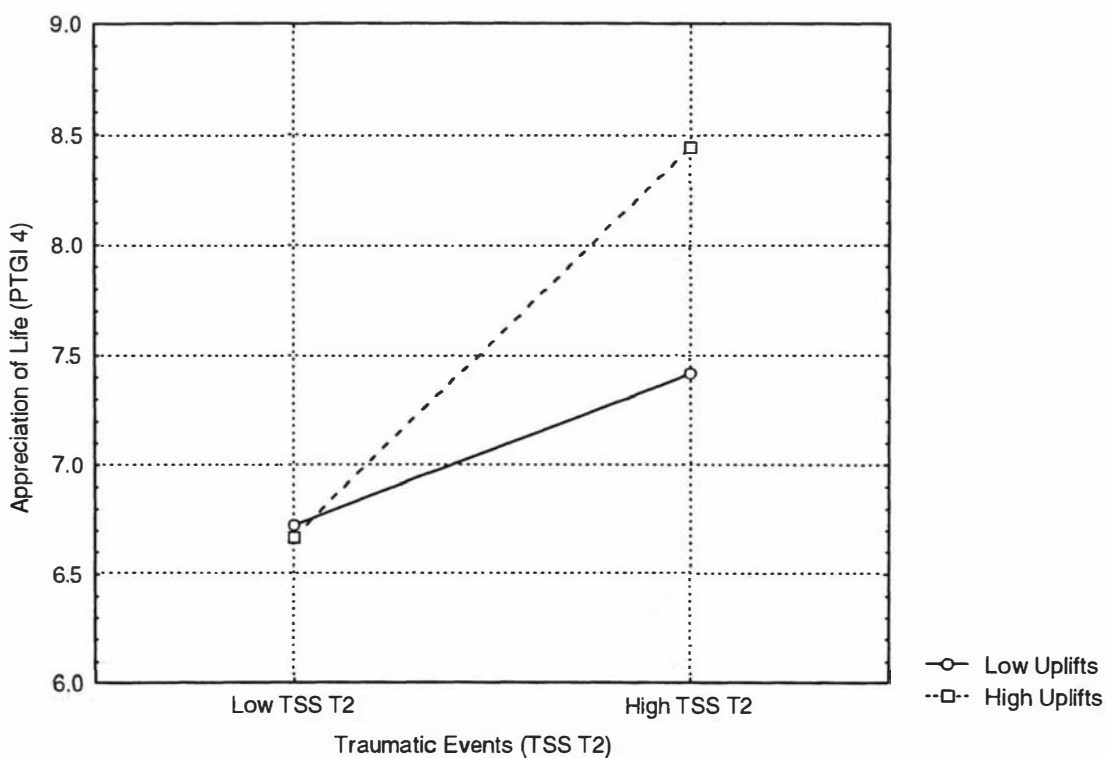


Figure 8.4. Moderating Effect of Uplifts on the Relationship between Traumatic Events and Appreciation of Life.

Traumatic events were positively related to the posttraumatic growth factor appreciation of life scores, and this relationship was significantly stronger if uplifts were high.

Summary of Hypotheses Results

The first hypothesis predicted traumatic events are positively related to traumatic stress outcomes, as measured by the IES. This was supported.

The second hypothesis predicted traumatic events are positively related to posttraumatic growth, as measured by the PTGI. This was supported with a small but significant result.

The third hypothesis made two predictions. Firstly, that traumatic events are positively related to psychological distress outcomes, as measured by the HSCL-21. This prediction was not supported. Secondly, this hypothesis predicted that traumatic events are negatively related to physical health outcomes. This prediction was not supported.

The fourth hypothesis predicted that organizational stressors would moderate the relationship between traumatic events and traumatic stress outcomes, as measured by the IES, such that the higher the number of organizational stressors reported, the stronger the relationship between traumatic events and IES outcomes. This hypothesis was not supported. Hassles directly predicted traumatic stress outcomes, but did not moderate the relationship between traumatic events and traumatic stress outcomes.

The fifth hypothesis made two predictions. Firstly, that organizational stressors are positively related to psychological distress outcomes, as measured by the HSCL-21. This prediction was supported. Secondly, this hypothesis predicted that organizational stressors are negatively related to physical health outcomes. This prediction was not supported.

The sixth hypothesis predicted that organizational uplifts would moderate the relationship between traumatic events and traumatic stress outcomes, as measured by the IES, such that the higher the number of organizational uplifts reported, the weaker the relationship between traumatic events and traumatic stress outcomes. This hypothesis was not supported.

The seventh hypothesis made two predictions. Firstly, that organizational uplifts are negatively related to psychological distress outcomes, as measured by the HSCL-21. This prediction was not supported. Secondly, this hypothesis predicted that organizational uplifts are positively related to physical health outcomes. This prediction was supported.

The eighth hypothesis predicted that organizational stressors are more positively related to psychological distress, as measured by the HSCL-21, than traumatic events. This hypothesis was supported.

Summary of the Hypotheses by Dependent Variables Outcomes

Traumatic stress outcomes

- Supported: traumatic events were positively related to traumatic stress outcomes.
- Not supported: organizational stressors did not moderate the relationship between traumatic events and traumatic stress outcomes in a positive direction.
- Not supported: uplifts did not moderate the relationship between traumatic events and traumatic stress outcomes in a negative direction.

Psychological distress outcomes

- Supported: organizational stressors were positively related to psychological distress outcomes.
- Supported: organizational stressors were more positively related to psychological distress outcomes than traumatic events.
- Not supported: traumatic events were not positively related to psychological distress outcomes.
- Not supported: uplifts were not negatively related to psychological distress outcomes.

Physical health outcomes

- Supported: organizational uplifts were positively related to health.
- Not supported: traumatic events were not negatively related to health.
- Not supported: organizational stressors were not negatively related to health.

Posttraumatic growth outcomes

- Supported: traumatic events were weakly positively related to posttraumatic growth.

Summary of Moderating Effects

High numbers of uplifts moderated (to strengthen) the relationship between high numbers of traumatic events and posttraumatic growth, in a positive direction, for the total Posttraumatic Growth Inventory and two factors: relating to others and appreciation of life. For a third factor: new possibilities, uplifts moderated (to weaken) the negative relationship between high numbers of traumatic events and posttraumatic growth. All these post-hoc analyses indicated the *beneficial* effect of uplifts on the development of posttraumatic growth when traumatic events were high.

The results of this study are interpreted and discussed in the following chapter.

Chapter Nine

DISCUSSION

Overview

This chapter will discuss the results from the study that has examined a sample of New Zealand police recruits' traumatic and organizational experiences, and the relationships these have to health, traumatic stress symptoms, psychological distress symptoms, and posttraumatic growth.

The chapter begins by discussing the relationships posited in the research hypotheses. These are examined in regard to the outcomes of the hierarchical regressions. The results are discussed under four headings corresponding to the hierarchical regression dependent variables: traumatic stress outcomes, psychological distress outcomes, health outcomes, and posttraumatic growth outcomes. This section concludes with a summary of the supported research predictions.

Next the results of the study measures are discussed. Firstly, the recruits' prior and police traumatic event experiences are described, and relationships between traumatic exposure and the psychological and physical health measures are evaluated. Secondly, the results of the pre- and post-test measures of self-reported health, traumatic stress, psychological distress, and positive and negative affect are assessed and the results are evaluated against norms for similar populations. The measures assessed only at time two are then discussed. These are the measures for organizational stressors and uplifts, and posttraumatic growth. The section concludes with a discussion of gender-differentiated outcomes.

The discussion moves to issues related to the study. Measurement, validity, and generalizability issues are considered. Biographical information for the total cohort was obtained from New Zealand Police National Headquarters, and these data are compared with the study respondents' biographical data. Limitations of the study are considered, as well as unmeasured variables. This section concludes with a discussion of issues for future research. Implications for the Police Organization as a consequence of the results are considered, and suggestions are made for post-trauma interventions. Implications regarding gender-differentiated outcomes are also considered. In the concluding section of the study, the procedures and main findings of the study are summarized.

Results of Hypotheses Testing

This study has examined the impact of police recruits' traumatic and organizational experiences on their psychological and physical health. Traumatic stressors and organizational stressors were expected to have a negative impact upon psychological and physical health, whereas organizational uplifts were expected to have a beneficial impact. It was also expected that organizational stressors and uplifts would moderate the relationship between traumatic exposure and traumatic stress outcomes. The predicted relationships were described as eight research hypotheses. These hypotheses predicted the impact of the traumatic and organizational variables on four health outcomes: traumatic stress, psychological distress, physical health, and posttraumatic growth. Predicted relationships were tested for statistical significance using hierarchical multiple regression analyses. All the variables, with the exception of hassles, were transformed. While this enabled the hypothesized relationships to be evaluated for statistical significance, it limited the quantification of predictor effects.

Traumatic Stress Outcomes

Hypothesis one predicted that traumatic events would be positively related to traumatic stress outcomes. This relationship was supported by a moderate significant positive

correlation ($r = .30, p < .05$) between the time two traumatic events and time two traumatic stress variables, and by independent t tests that determined that significantly higher traumatic stress outcomes were associated with multiple traumatic experiences. Hypothesis one was supported. Regression analysis indicated that police traumatic event exposure predicted traumatic stress when other variables (time one traumatic stress, and the organizational variables) were controlled.

Hypothesis four predicted that organizational stressors would moderate the relationship between traumatic events and traumatic stress. However, a moderating effect was not shown in the results therefore hypothesis four was not supported. Possibly the measurement of organizational stressors occurred too early for these variables to have been experienced long enough to affect traumatic stress reactivity, or there may not have been enough organizational stressors to adversely affect these recruits. The recruits had only seven months of organizational experiences at the time of re-assessment consequently this may not have been long enough for the impact of organizational variables on traumatic stress reactions to be felt. Around 75% of the recruits had experienced at least one traumatic event; this leaves one quarter of the sample without a police traumatic experience. Obviously for these recruits a moderating effect on the relationship between police traumatic events and traumatic stress reactions will not be detected. In the long-term, however, it is likely that organizational stressors will affect this relationship as more and more of the recruits will have experience of one, or multiple traumatic events.

Hypothesis six predicted that organizational uplifts would moderate the relationship between traumatic events and traumatic stress. However, a moderating effect was not shown in the results therefore hypothesis six was not supported. However, past work has indicated that good organizational and managerial issues can have a beneficial role in curtailing the development of post-trauma reactions. This was demonstrated in a Scottish study of police rescue workers involved in body retrieval duties (Alexander, 1993; Alexander & Wells, 1991). In the present study, uplifts did not appear to be traumatic stress moderators. However, again this may be due to the lack of time these recruits had spent on the job, or there may have not been enough uplifts to make a significant impact.

While it was not possible to demonstrate the moderating effects of either organizational stressors or uplifts, it is likely that these occurred but were simply not detected. In this case the failure to detect a moderating effect could be considered a Type II error. Hills and Norvell (1991) commented that single occupational groups (e.g., the police) are homogenous populations with lowered variance and therefore less likely to show moderating effects. McClelland and Judd (1993) argued that it is difficult for researchers to detect moderating effects due to the loss of variance through non-optimal distributions of the variables. This may have been a factor in the present study, as only the organizational stressors variable was normally distributed.

Post-hoc analysis determined that organizational stressors exerted a direct and significant impact upon traumatic stress. Organizational stressors predicted more of the traumatic stress variance than traumatic exposure. While this was not predicted as a study hypothesis this was a significant and interesting finding. The respondents in this study have indicated that traumatic stress outcomes were associated not only with traumatic events, but also with organizational stressors. However, this needs to be considered in regard to the definition of traumatic stress. Traumatic stress follows from a traumatic incident, and the measure for traumatic stress, the IES, is based upon the respondent's worst traumatic experience. A traumatic experience, by the *DSM-IV* (1994) criteria, involves actual or threatened death or serious injury and a threat to the integrity of that person or others that resulted in a response of intense fear, helplessness, or horror (APA, 1994).

Daily organizational stressors do not involve actual or threatened death or serious injury, although it is possible that they could be perceived as providing a threat to the integrity of the person or others. Therefore, an organizational stressor can only satisfy part of these traumatic event criteria at most. While a frustrating and non-supportive work environment could possibly engender feelings of helplessness, it is not likely that the reactions of intense fear or horror would be associated with daily work stressors. The present study has indicated that organizational stressors predicted more of the variance of traumatic stress outcomes than did traumatic stressors when other variables were controlled. However, it needs to be emphasized that the police work environment

exposes recruits to *both* types of stressor. The effect of the experience of organizational stressors on traumatic stress outcomes is confounded by the experience of traumatic stressors in the police work environment. The traumatic stress score had to be directly related to a particular traumatic experience, as the respondents were asked to recall their most upsetting traumatic event when completing the IES. It is likely that the organizational stressors generated traumatic reactivity because they were experienced in a work environment in which traumatic and organizational stressors interacted; the recruits' traumatic stress score had to be based upon prior experience of a traumatic event.

Smith and Paton (1997) have commented that in work-related contexts traumatic stress reactions may reflect causal influences that have emanated from the interaction between a specific traumatic event and organizational, professional, and cultural influences rather than being a direct consequence of having experienced a traumatic event. The present study has provided additional support regarding the importance of organizational influences. Other researchers have suggested that organizational stressors are *the* major source of stress among police officers (Brown & Campbell, 1990; Kroes, 1986; Martelli et al., 1989). Results from the present study have indicated that organizational stressors apparently were more strongly implicated in traumatic stress outcomes than traumatic exposure, and therefore, this provides some support for this view. However, Violanti (1996a; 1996b) argues that it is unlikely that PTSD symptoms originate solely from organizational events as the residual effects of traumatic stress are still present during retirement when the effects of organizational stressors are minimal. The present study does provide evidence that there is a complex interrelationship between traumatic and organizational stressors and that *both* need to be taken into account when determining traumatic stress reactivity in New Zealand police recruits.

The present study has indicated that the experience of traumatic events is not a rare occurrence for early career police officers. Even during their first year on the job, during which five months were spent in training, these recruits experienced high levels of traumatic exposure. Almost half of the sample was physically assaulted; 45% of the male recruits and 38% of the females. These experiences were associated with significantly higher levels of traumatic stress. Higher levels of traumatic stress were associated with

on-duty traumatic events, and with multiple traumatic event experiences. Occupational traumatic experiences do affect these recruits. However, this study has indicated that over and above the effects of traumatic events exposure the experiences that are the most harmful to the recruits' well-being are those resulting from the organizational stressors of the day-to-day police working environment. Previous studies have suggested that organizational stressors may exacerbate traumatic stress (Brown & Fielding, 1993; Evans & Coman, 1993; Smith & Paton, 1997; Stephens, 1996b). This was indicated by the present study which showed organizational stressors had a greater impact on psychological distress and traumatic stress levels when other variables were controlled for than did traumatic events exposure alone. While this is obviously a concern to the Police Organization it could also be considered as important news. There exists the real possibility of positive health benefits for police officers if organizational management procedures and resources can be improved.

Psychological Distress Outcomes

Hypothesis three predicted that traumatic events are positively related to psychological distress outcomes. This was supported by a significant, albeit weak, positive correlation ($r = .15, p < .05$) between traumatic events and psychological distress outcomes at time two. However, this research prediction was not supported; when other variables were controlled for (time one psychological distress scores, and the organizational variables) the relationship between traumatic events and psychological distress symptoms disappeared. At this stage in their police careers, there is no evidence of ^{that} co-morbidity ~~between~~ traumatic events ^{experiences predicted} and psychological distress symptoms. It may be that psychological distress results more from the accumulation of frequent smaller stressors than from infrequent acute traumatic experiences.

Hypothesis five predicted that organizational stressors are positively related to psychological distress outcomes. This was supported by a moderately strong significant positive correlation ($r = .48, p < .001$). This prediction was supported as regression analysis indicated that organizational stressors were positive predictors of the variance for psychological distress scores even after other variables (HSCL-21 T1, TSS T2, and uplifts) were controlled. Organizational stressors had a greater impact than traumatic

stressors on both the recruits' psychological distress and traumatic stress symptoms. This indicates that organizational stressors are related to increased, and worsened, stress outcome levels. Encountering negative and unsupportive aspects of the job on a daily basis is apparently distressing.

Hypothesis seven predicted that uplifts are negatively related to psychological distress outcomes. This was supported by a significant, albeit weak, negative correlation ($r = -.22, p < .001$) between the uplifts variable and time two psychological distress. The total uplifts score, and nine uplifts factors (all the factors apart from customer satisfaction, and coworkers) all negatively correlated with psychological distress symptoms. These results indicated a relationship between higher uplifts and reduced psychological distress symptoms. However, when other variables (time one psychological distress, traumatic events, and organizational stressors) were controlled, daily positive organizational events did not predict reduced levels of psychological distress symptoms. The impact of daily positive work events had less effect on psychological distress than the impact of daily negative work events. In terms of increased and stronger stress symptoms, these recruits appeared to be reacting more strongly to negative aspects of the job. At this early stage in their police careers, the recruits' levels of daily uplifts were not directly related to decreased psychological distress outcomes. Possibly there had not been high enough levels of uplifts, or enough elapsed time, for uplifts to directly affect psychological distress levels.

Hypothesis eight predicted that organizational stressors would be more positively related to psychological distress outcomes than traumatic events. Both these types of stressors correlated with traumatic stress outcomes. However, the relationship between organizational stressors and traumatic stress was slightly stronger. When other variables were controlled (time one psychological distress, traumatic events, and uplifts) organizational stressors appeared to be more positively related to psychological distress outcomes than police traumatic event exposure. Police traumatic event exposure had a negligible impact regarding psychological distress outcomes; organizational stressors, however, significantly contributed to increased psychological distress symptoms. This indicated that, at this early stage of the recruits' careers, daily negative organizational stressors (such as resource complaints, workload difficulties, and problems with

coworkers) contributed to symptoms of psychological distress whereas acute, but infrequently encountered, traumatic events did not. These results supported past work that has suggested that organizational stressors are *the* major sources of stress among police officers (Brown & Campbell, 1990; Kroes, 1986; Martelli et al., 1989). A similar finding was also reported from a recent study of 233 police officers from a mid-sized city in the northeastern United States (Patterson, 1999), which reported that exposure to stressful organizational events resulted in higher levels of psychological distress symptoms.

Physical Health Outcomes

The experience of police traumatic events was not related to physical health outcomes at time two. The prediction in hypothesis three that traumatic events would be negatively related to health outcomes was therefore not supported. The recruits had only seven months experience of active duties at the time their police traumatic exposure was assessed. Physical assaults were their most common traumatic event experiences, most of which were minor. Possibly traumatic events failed to predict poor health outcomes because there had not been enough time for the recruits to encounter many of the most upsetting traumatic experiences (e.g., death of a fellow officer, being involved in a shooting, or serious assaults). Time two health was moderately negatively correlated with the time two psychological distress symptoms ($r = -.32, p < .001$) and in future health may be detrimentally affected by this relationship. Mean health scores significantly declined over the period of this study. Therefore, the result that traumatic events failed to predict poor health outcomes, should be regarded with caution, and the recruits' health status should be monitored on an ongoing basis.

Hypothesis five predicted that organizational stressors would be negatively related to physical health. This was supported by a significant, albeit weak, negative correlation ($r = -.18, p < .01$) between the organizational stressor variable and time two health. However, this prediction was not supported when other variables were controlled for (time one health, police traumatic events, and organizational uplifts). Experiencing daily organizational stressors was not found to be a significant predictor of the variance for physical health. This may be due to the lack of time that the recruits had spent in the

police; they were reassessed only seven months out of Police College. Possibly physical health is more resilient than psychological health to the effects of organizational stressors. However, as previously reviewed studies have indicated (e.g. Alexander et al. 1991; Brown & Campbell, 1994; Brunet et al. 2001) co-morbidity will occur in future with the passing of sufficient time.

Hypothesis seven predicted that organizational uplifts would be positively associated with physical health, and this was supported by a moderate positive correlation between organizational uplifts and the time two health variable ($r = .24, p < .001$). All of the 11 uplifts factors positively correlated with time two physical health outcomes. This prediction was supported; uplifts were significant, albeit weak, positive predictors of physical health variance when other variables (baseline health, police traumatic events, and organizational stressors) were controlled. This indicated that a positive daily work environment did impact beneficially upon police recruits' physical health. Although this was only a slight effect, it was important. *Physical* health was affected more quickly by organizational uplifts than by organizational stressors (but *psychological* health was only affected by stressors, not by uplifts). However, it may be that good health allows people to report more uplifts. Therefore, this finding, although initially encouraging for the Police Organization, needs more time and further assessment with longitudinal analyses before it can be regarded as reliable.

Posttraumatic Growth Outcomes

Hypothesis two predicted that traumatic events would be positively related to posttraumatic growth. This prediction was supported by a significant, albeit weak, positive correlation ($r = .16, p < .05$) between the time two traumatic events and the posttraumatic growth scores. Three of the five posttraumatic growth factors were positively related to traumatic events. These included: relating to others, personal strength, and appreciation of life. This hypothesis was only weakly supported; traumatic events were significant, albeit weak, predictors of total posttraumatic growth until the organizational variables were controlled for; then traumatic events no longer predicted posttraumatic growth.

As the measurement of posttraumatic growth involved prior experience of a traumatic event, it was not surprising to find an initial significant relationship between these constructs. However, that the impact of traumatic events on posttraumatic growth was so weak at this stage may be related to the lack of elapsed time. The resolution of a traumatic experience and the subsequent development of posttraumatic growth, are processes that may take considerable time (Calhoun & Tedeschi, 1998; Finkel, 1975). However, as mentioned above, when organizational variables were controlled traumatic events were found not to predict posttraumatic growth scores, whereas both organizational variables did so. While it appears intuitively acceptable that a supportive work environment could aid the development of posttraumatic growth, it is unclear why experiencing organizational stressors also had that effect. Hart (1996) found a moderate positive relationship between police hassles and well-being, and suggested that this arose due to problems associated with the measurement of well-being. Hart also found that instead of an increase in hassles being associated with a decrease in uplifts, the opposite occurred, and vice-versa. While this contrasted with common-sense expectations, Hart suggested that hassles and uplifts would both simultaneously either increase or decrease, and that both depended on the extent to which officers were engaged in operational police work (Hart, 1996, p.238).

Hart (1996) and this study, found that both organizational stressors and uplifts predicted positive outcome measures. These positive outcomes were the measure of well-being in the Hart study, and posttraumatic growth in the present study. Hart suggested, regarding his study, that this could have occurred because police officers work in an environment in which both operational and organizational experiences interact. Indeed, in the present study the measurement of posttraumatic growth was related to police operational traumatic duties as the recruits who completed the Posttraumatic Growth Inventory were instructed to complete this inventory in relation to a prior traumatic experience. However, when the impact of the traumatic events themselves was controlled for in the regression analysis, organizational stressors were related to posttraumatic growth. *But PTG was measured in relation to traumatic event* This tested Hart's explanation and failed to confirm it. Therefore, the relationship between organizational hassles and uplifts, and positive outcome measures, needs further explanation. It may be that Hart's Police Daily Hassles and Uplifts Scales need further refinement.

Post-hoc analyses determined that uplifts exerted a weak moderating effect on the relationship between traumatic event exposure and the development of posttraumatic growth when other variables were controlled. When traumatic events were high, increased posttraumatic growth occurred for the recruits who had also experienced high numbers of organizational uplifts. This was a significant outcome for the total posttraumatic growth score and for the factors: new possibilities, relating to others, and appreciation of life. While this moderating effect was not predicted as a study hypothesis, this was an interesting finding on two counts: moderating effects are notoriously difficult to detect in real life studies as opposed to experimental manipulations (McClelland & Judd, 1993); and posttraumatic growth is a construct that may require time to develop (Calhoun & Tedeschi, 1998). This finding supports the assertion by Alexander and Wells (1991) that police officers can emerge from potentially horrific duties with little evidence of pathology. In contrast, they may in fact exhibit indications of personal or professional growth given sufficient organizational support and preparation. Organizational uplifts do appear to have a salutogenic impact on the development of posttraumatic growth, even after other variables are controlled.

Results from the present study would indicate that, at this stage of their careers, these recruits are deriving some feelings of personal growth and development in association with potentially traumatizing events. These include feelings of new possibilities, relating better to others, and increased appreciation of life. Apparently the police organizational context is allowing the officers to experience opportunities to personally develop within their chosen profession. While this study has supported the finding that psychological trauma is predicted by traumatic events, it has also supported a finding of positive resolution. As Calhoun and Tedeschi (1998) have commented, the study of negative and often disastrous major life stressors should not be discontinued. Rather, the perspective should be expanded to also include the possibility of posttraumatic growth consequences. The pathological paradigm need not be dismantled, but simply widened to include salutogenic outcomes, so that both negative and positive consequences are investigated. Paradoxically as it may appear, the positive does not preclude the negative, and vice-versa (Hart et al., 1993, 1995; Tedeschi & Calhoun, 1995, 2002; Watson et al., 1998).

The Study Results in Relation to Models of Organizational Stressors

The supported research hypotheses have indicated that organizational stressors were significantly related to posttraumatic growth, traumatic events were significantly related to traumatic stress and posttraumatic growth outcomes, and uplifts were significantly related to improved health outcomes. That these predictions were supported in the directions predicted by the hypotheses indicates that the methodology utilized in this study did provide an appropriate framework for the investigation of organizational stressor impacts and outcomes.

Investigators of occupational and organizational stressors (e.g. Cooper, 1986; Evans & Coman, 1983, 1993; Hart et al, 1993; Kroes, et al, 1974; Reiser, 1974; Stratton, 1978) have predicted that organizational stressors would have a negative impact regarding an individual's stress outcomes. In this study stress was assessed in terms of symptoms of psychological distress, and the regression analysis indicated that, even after other variables were controlled for (time one distress and traumatic event experiences), the organizational stressors variable was the one that was significantly associated with increased levels of psychological distress.

The Hart et al (1993) model also allowed for an investigation of the impact of organizational uplifts. Outcomes from the present study supported this as an important research tenet. Although uplifts did not *per se* influence psychological distress or traumatic stress outcomes, the uplift variable was found to significantly predict improved physical health outcomes. This indicated that a significant and important outcome could be determined when the frame of reference allowed for the impact of daily beneficial organizational work events.

This study encompassed a methodology that synthesized both pathogenic and salutogenic research methodologies. This was supported as a valid approach towards a more balanced investigation in regard to the impact of positive and negative external work events, and in regard to the internal positive and negative outcomes that these experiences may engender. Traumatic events did appear to increase feelings of traumatic

stress, and organizational stressors were related directly to increased psychological distress outcomes, and were implicated (possibly as moderating variables that were undetected) in traumatic stress outcomes. Therefore, a pathogenic orientation was appropriate regarding the relevant research hypotheses. However, as mentioned, organizational uplifts did appear to be associated with beneficial physical health outcomes, and a small amount of posttraumatic growth was associated with traumatic event experiences. Post-hoc findings also indicated that uplifts significantly, and beneficially, influenced the relationship between traumatic event experiences and posttraumatic growth outcomes. This supports recently developed methodologies (e.g. Tedeschi & Calhoun, 1995, 2002; Watson et al, 1998) that have advocated a widening of the established pathogenic approach to also include salutogenic research variables.

Study Results for Traumatic Events

Traumatic Events Prior to Joining the Police

The recruits' prior history of traumatic event exposure, in association with measures of psychological and physical health, was assessed at entry to Police College. This allowed their subsequent experiences as police officers to be evaluated against the baseline data. When training commenced, 85% of the recruits had already experienced at least one traumatic event; 54% had experienced two traumatic events; and 26% had experienced three or more. Norris (1992), who developed the Traumatic Stress Schedule (TSS) used in the present study, found a lifetime exposure rate to traumatic events of 69%. The present study found over 40% of the respondents had already experienced the death of a close friend or family member by accident, homicide, or suicide. This is higher than the 30.2% identified by Norris (1992) on the same item. Over 20% of the present study respondents had been assaulted, injured, or had their life paced under threat by another person (15% in Norris' sample). Over 20% had prior experience of a motor vehicle crash serious enough to cause injury to one or more passengers (23.4% in Norris' sample). The present study has found a higher rate of traumatic event exposure than did Norris. This is notable given that her 1,000 respondents were evenly divided among

young, middle-aged, and older adults, and therefore included many older participants than the present study.

Comparable populations of *young adults* have reported exposure rates ranging from 39% to 84%. Breslau et al. (1991) found a lifetime prevalence of exposure to traumatic events of 39%. Vrana and Lauterbach (1994), in a sample of 440 American college students, found an exposure rate of 84%. Compared to these American samples, the study sample recruits have a high rate of previous exposure to traumatic events. Buchanan et al. (2001) studied 187 New Zealand police recruits and found that 70.6% reported prior experience of traumatic events. The present study has found a higher rate of prior exposure; higher than this comparable New Zealand study and higher than that reported in any of the comparable civilian populations.

Worst prior traumatic event

The most frequently nominated worst traumatic event was death. This referred to death by accident, homicide or suicide, and included seeing or handling a dead body. An interesting finding was that many recruits targeted the events of natural death, relationship difficulties, or health problems as the worst event that had ever happened to them. Forty-three percent of the 125 respondents chose these events as the worst thing that ever happened to them (see Table 8.5). These events would not be categorized as 'traumatic' by *DSM-IV* (1994) guidelines, nor were they itemized in the TSS. Norris (1992) commented that relatively low levels of trauma effects were associated with the TSS traumatic events:

‘With regard to overall levels of perceived stress, these events appear to be only one of many sources of stress in people’s lives. Interpersonal relationships, financial problems, and the like entail little drama but much stress’ (Norris, 1992, p.416).

For the recruits in the present study this should probably be rephrased: ‘*entail much drama and much stress*’. While the further assessment of chronic stressors was beyond the scope of this research, undoubtedly demands such as poor health and relationship difficulties do contribute to peoples’ perceptions of stress, in complex and interconnected ways.

Prior traumatic events and health effects

Stephens, Long, & Flett (1999) have suggested that police work may attract individuals who have high levels of previous traumatic exposure, particularly violent exposure. This may be of concern, given preliminary evidence that police recruits who enter the service with higher levels of traumatic experience may retire as unfit (Stephens et al., 1999; Stephens & Miller, 1998). In the present study, data was available on prior traumatic exposure for seven recruits who left during their first year. This group had a mean traumatic event score of 2.29 at entry compared to the group average of 1.82. This provided tentative support for the suggestion that those who have high prior traumas may retire as unfit. Possibly 'unresolved issues' from previous traumatic experiences interfered with police work and the police culture to have deleterious effects upon these seven recruits. However, because so few recruits resigned, comparisons between these recruits and the study sample could not be statistically evaluated.

The recruits' high rate of traumatic events exposure may also be of concern regarding their future risk status as high or repetitive prior exposure to traumatic events may increase their subsequent risk status (Stephens et al., 1999). The recruits who resigned from the police during the course of the present study were evaluated for traumatic stress symptoms as they entered the police, but not as they exited, having left before the one-year reassessment period was up. At time of entry the mean traumatic stress score for the seven recruits that subsequently resigned was 23.00 (the mean for the study sample was 10.90). As scores above 20 on the IES are of concern for PTSD pathology (McCammon, 1996), and as these recruits' scores were over 50% higher than the mean score for the study sample, this may indicate a high-risk status for traumatic stress reactivity. However, the low number of recruits who left precluded statistical analyses therefore conclusive outcomes could not be drawn at this stage. In future, however, recruits who enter the police with high rates of prior traumatic exposure should be monitored for traumatic stress reactivity and assisted with post-trauma support if necessary.

For the study sample as a whole, the high rate of prior exposure to traumatic events was generally not associated with adverse health effects. The prior traumatic events variable was not associated with increased traumatic stress or psychological distress outcomes, nor was it related to physical health or mood. Only one traumatic event was associated with adverse traumatic stress results; this was the experience of sexual assault. Mean IES scores were significantly higher for the recruits who had been sexually assaulted, however, this difference was not significant for males. The mean time one IES score for sexually assaulted females was 24.55 ($N = 11$), versus 11.47 for females not sexually assaulted ($N = 61$). The group of sexually assaulted females scored, on average, 53% higher on the IES than non-sexually assaulted females. This is an interesting result. However, because of the small sample it cannot be regarded as reliable.

As mentioned above, the few recruits who left the police during the course of this study reported high levels of prior exposure to traumatic events, and possibly had higher than average symptoms of traumatic reactivity. However, as so few left, these results could not be analyzed for statistical significance. Suggestions that prior high exposure to traumatic events (Buchanan et al., 2001; Stephens et al., 1999; Vrana & Lauterbach, 1994) may result in psychological pathology were not supported at time of entry to Police College. Previous exposure to traumatic events may have implications for subsequent psychological status, with the possibilities ranging from psychological pathology to personal growth and development. This study found high levels of prior traumatic event exposure, and it was possible to determine the implications of this exposure on the recruits' psychological health before they encountered further emotionally distressing and possibly repetitive traumatic events within a demanding organizational culture. This ensured that the effects of on the job experiences were accurately assessed (Paton & Smith, 1999).

Police Traumatic Events

The recruits' exposure to traumatic events, as well as their traumatic stress and psychological distress reactivity, were assessed at one year into their police career. This longitudinal sampling procedure allowed on the job traumatic and organizational experiences, and associated psychological reactivity to be assessed, with baseline scores taken into account. It was not assumed that all the Police Organizational experiences would be negative; the impact of organizational uplifts (positive, beneficial to well-being events) on the recruits' physical and psychological health was also a major focus of this study. The police traumatic event measure used in this study did not account for traumatic stress outcomes that may have been caused by repeated experiences of the same traumatic event. A correlation between a measure of traumatic events that was weighted to include this factor and the time two traumatic stress score remained at the same strength as the correlation between police traumatic events and time two traumatic stress score ($r = .30$). The rather weak correlation between traumatic event exposure and traumatic stress effects was not unexpected. Although a traumatic event is a requirement for a diagnosis of PTSD, the experience does not automatically mandate the development of the syndrome (Stephens, 1996a).

Of concern with police officers is the possible cumulative effect of multiple traumatic event experiences (Carlier, 1999). In the past, it had been assumed that coping with repeated traumatic events would increase the ability of the individual to withstand the effects of subsequent exposure, that the individual would be 'inoculated' to avoid severe post-traumatic stress reactions. However, recently an opposing view has suggested that exposure to pain, death or suffering may lead to officers becoming psychologically debilitated (Green, 1994; Moran & Britton, 1994; Violanti 1996a). This latter finding was supported following a cross-sectional study of 527 New Zealand police officers (Stephens & Miller, 1998). Results of that study indicated that increased numbers of different traumatic events positively correlated with the intensity of PTSD symptoms, and that repeated experience of the same event predicted higher scores.

During their first year in the police, 74% of the recruits experienced at least one traumatic event. Of those recruits, 42% experienced two events and 5% experienced

three or more. The numbers of traumatic events experienced ranged from zero to six. The most frequently encountered traumatic events were: assault, which was experienced by 43% of recruits (45% of the male recruits, and 38% of the females); attending accidents where there were multiple victims or severe mutilations of bodies, which was experienced by 29% of the recruits (32 % of males, and 23% of the females); and witnessing a member of the public being killed, which was experienced by 8% of the recruits (7% of the males, and 10% of the females). A further 32% of the recruits had experienced some other traumatic event. Most often these were experiences of death by accident, homicide or suicide (14% of recruits), or assaults (another 9% of recruits). The impact of traumatic event exposure on the recruits' psychological and physical health measures is discussed in the next section.

Relationships between police traumatic events and the study measures

Traumatic event exposure prior to joining the police did not correlate with traumatic stress symptoms, apart from an indication that sexually assaulted females may have had higher traumatic reactivity. However, police traumatic event exposure was correlated with higher traumatic stress scores ($r = .30, p < .05$). Police traumatic event exposure was significantly related to traumatic reactivity (at time two), whereas earlier prior traumatic exposure (at time one) was not. It appeared that the recruits were more distressed, in terms of PTSD symptoms, by their police traumatic event experiences. There were weak positive correlations between police traumatic event exposure, and total posttraumatic growth ($r = .16, p < .05$). Three posttraumatic growth subscales; relating to others, personal strength, and appreciation of life. This indicated that some feelings of personal growth and development were associated with traumatic exposure. There were weak positive correlations between police traumatic events and psychological distress ($r = .15, p < .05$), and negative affect ($r = .20, p < .05$). These indicated that there were weak relationships between increased police traumatic event exposure, and increased feelings of both psychological distress and negative affect. Police traumatic events and physical health were not related. The relationships between police traumatic events and the health measures were investigated with regression analyses, as each of the health measures, except for mood, was a DV for a regression.

The regression analyses indicated that police traumatic event exposure significantly predicted traumatic stress and posttraumatic growth symptoms; this was indicated for traumatic events after other variables (time one traumatic stress, hassles, and uplifts) were controlled. Physical health and symptoms of psychological distress were not predicted by traumatic event exposure when other variables were taken into account.

Significant relationships were found between four of the individual traumatic events variables (assault, robbery, other, and multiple victims) and time two traumatic stress scores. Only two recruits had experienced robbery, therefore analysis did not proceed further on this event. The recruits who were assaulted during their first police year had, on average, 46% higher traumatic stress outcomes; with a mean time two IES score of 13.34 versus a mean of 7.26 for those who were not assaulted. This was both a statistically significant and important result, and was confirmed by both parametric and non-parametric analyses.

The recruits who worked at accidents where there were multiple victims or severe mutilation of bodies also scored significantly higher on the time two IES, with mean scores of 12.43 versus 8.99 for those who did not. The recruits who experienced some other traumatic experience also scored significantly higher with mean time two IES of 13.31 (versus 8.39). However, these latter traumatic experiences (multiple victims and other experiences) can only tentatively be linked with higher traumatic stress outcomes, as these results were not confirmed by non-parametric analyses. These results indicated that being assaulted, working with multiple victims, and other experiences, were related to increased traumatic stress symptoms of avoidance and intrusion.

On-duty and off-duty traumatic events

This study found that traumatic events experienced while on-duty significantly related to higher traumatic stress symptoms than traumatic events experienced off-duty. The recruits who had experienced one or more police traumatic events, and the recruits who experienced traumatic events on-duty, had equivalent traumatic stress levels with means of 11.44 and 11.58 respectively. Conversely, the recruits who had not experienced any police traumatic events, and recruits who experienced traumatic events off-duty, had

equivalent traumatic stress levels with means of 4.10 and 4.75 respectively. Therefore, in terms of traumatic stress outcomes, traumatic events experienced on-duty equated to experiencing one or more police traumatic events, and traumatic events experienced off-duty equated with no police traumatic experiences. Possibly the police traumatic events are more personally demanding, and therefore upsetting, than their off-duty experiences.

An important and statistically significant finding was that recruits who experienced on-duty traumatic events had traumatic stress levels 59% higher than recruits who experienced off-duty traumatic events. Most of the police traumatic events (80.88%) occurred to *on-duty* recruits. Overall, recruits experienced high numbers of traumatic events during their first year in the police. However, it was their on-duty experiences that were the most upsetting (not their off-duty experiences). Stephens (1996a) also reported his finding.

Police multiple traumatic events

Significantly higher traumatic stress outcomes occurred for those recruits who had experienced two or more police traumatic events ($M = 13.28$), compared to those who had experienced one or none ($M = 7.26$). Recruits who had not experienced any traumatic events over their first year with the police had the lowest mean traumatic stress scores ($M = 4.10$). Recruits who experienced one or more police traumatic events had mean traumatic stress levels ($M = 11.44$) that were 64% higher than recruits who had not experienced any police traumatic events. Recruits who had experienced two or more police traumatic events had traumatic stress levels ($M = 13.28$) that were 69% higher than those recruits who had not experienced any traumatic events. At time two, fifty-six recruits scored over 20 on the IES, and these scores indicate clinical concern (Hyttén & Hasle; McCammon, 1996). These recruits also had significantly higher mean numbers of traumatic events; on average 27% higher than recruits who scored 20 or less on the IES. Stephens (1996a) reported similar findings in her New Zealand police study, so to did Vrana and Lauterbach (1994). As with the present study, the highest rates of PTSD symptoms were associated with the respondents who had suffered multiple traumas.

Police worst traumatic events

Traumatic events (experienced by on-duty recruits) were most often nominated in answer to the item; *of all the experiences please give the number of the one that was the worst for you*. This section referred to Traumatic Stress Schedule traumatic events and included the other response category. When all 187 responses to this worst event question were coded two responses predominated, these were; attending accidents with multiple victims or severe mutilations ($N = 48$); and experiences of death by accident, homicide, or suicide ($N = 43$). Next in frequency came the experience of being assaulted, injured, or having your life under threat ($N = 29$).

At time two the Traumatic Stress Schedule provided space at the end of each traumatic experience for the recruits to describe the event in their own words. This was particularly helpful with the other category as this enabled the 70 responses to be coded, and it could be determined whether the responses were traumatic or non-traumatic using the *DSM-IV* (1994) criteria. Eighty-three percent of responses to the other category were traumatic events as defined by APA (1994) guidelines. Seven recruits did not describe their other experiences. At time two relationship difficulties and natural death were each nominated by only one officer. At time one many of the worst experience responses were non-traumatic experiences (e.g., relationship difficulties, health problems) whereas at time two traumatic experiences were clearly predominant. Possible explanations may be that at time two the more current traumatic experiences had eclipsed the prior traumas. However, another explanation may be that the recruits simply answered the time two worst experience question by specifying a number (rather than writing an answer in the other category). This was not an option at time one, as the Recruit Questionnaire worst experience item required a written answer.

The eleven women recruits who had been sexually assaulted scored higher on the traumatic stress measure at time one than the recruits who had not experienced that type of traumatic event. One year later, however, these women were no different regarding traumatic reactivity to the study sample mean. Therefore, traumatic events scores at time of entry into the police did not predict subsequent traumatic stress reactivity one year later.

***Results of the Measures for Health, Traumatic Stress
Symptoms, Psychological Distress Symptoms, Mood,
Organizational Stressors, Organizational Uplifts, and
Posttraumatic Growth***

Health

The recruits entered Police College with a high mean self-assigned health rating ($M = 6.14$). They indicated that, on average, compared to a person of excellent health their health was very good. This high health ranking was not surprising given that these recruits had very recently satisfied the vigorous pre-requisite health and fitness levels required for entry into Police College. This was likely to have been still fresh in their minds, making them unlikely to admit to feeling poorly, even if that had been the case. One year later their physical health ratings had significantly dropped ($M = 5.62$), on average being one point lower (this represented an 8% reduction). At time two the recruits, on average, felt their health was good.

Considering similar populations in the community this result still compares favorably. A study of 163 university psychology undergraduates found a mean health score of 4.91 (a fair rating) (Lyons & Chamberlain, 1994). A study of 525 New Zealand police sworn officers by Stephens (1996a) found a mean health score of 5.31 (a good rating). This was very similar to the time two outcome for the present study ($M = 5.62$). Lithgow (2001) also found similar results. Her prospective study of 187 New Zealand police recruits, found mean pre-and-post scores of 5.99 and 5.66 respectively. The present study found a small downward trend in health rankings over the one-year period of this study. Even so, the latter health ranking still compared favorably to officers' health ranking at all career stages, and was higher than that provided by the undergraduate psychology students.

Relationships between health and the other study measures

At time two health was moderately negatively correlated with both psychological distress symptoms ($r = -.32, p < .001$) and negative affect ($r = -.36, p < .001$). Health was moderately positively correlated with positive affect ($r = .46, p < .001$). These correlations indicated that there was a positive relationship between health and positive mood, and negative relationships between health, psychological distress and negative mood. Regression analyses found that organizational uplifts were indicated as predictors of improved physical health when other variables (time one health, traumatic events, and organizational stressors) were controlled. Traumatic event exposure was not a significant predictor of detrimental health effects at this early stage of the recruits' careers.

Traumatic Stress Symptoms

At time one the study sample had a mean traumatic stress score equitable to comparative non-clinical populations. A considerable number of the recruits produced a zero total for the scale (41.06%), and nearly 20% of the sample did not complete it (19.40%). At time two there was no significance difference between the time one ($M = 10.90$) and time two ($M = 10.07$) mean scores for the total group. However, a difference emerged when the females' scores were examined separately. Over the police year their mean traumatic stress scores had reduced by 32%, from a mean of 13.47 to a mean of 9.13.

The Impact of Event Scale has been tested with a population of 110 medical students during their first year at medical school. At the time they performed their first dissection mean total IES scores were 12.7 for females, and 6.9 for males (Horowitz et al., 1979). At time two the police recruits' mean total scores were 9.3 for females, and 10.79 for males. The female recruits were less stressed compared to the student population, whereas the male recruits had comparable traumatic stress symptom levels. The Horowitz et al. (1979) study also reported mean scores from 66 stress clinic patients with mean scores 42.1 for females and 35.3 for males. At time two the recruits scored very comparatively to a group of 16 firefighters involved in disaster and rescue work ($M = 10.95$), a study reported by Paton (1994b), and to a group of 290 volunteer

firefighters, involved in unfamiliar duties, 11 months post-event ($M = 10.5$) (McFarlane, 1992). The study sample had traumatic stress levels at time two that were comparable to those of medical students and firefighters, and were well below those of stress clinic patients.

Mean traumatic stress levels had not significantly altered for the recruits over the year; however, there was some evidence that female recruits had reduced traumatic stress levels. This does not mean that no recruits were upset. As discussed earlier in this chapter, the recruits who encountered multiple traumatic events, and those who experienced on-duty traumatic events, scored significantly higher on the IES.

Relationships between the study measures and traumatic stress

At time two traumatic stress scores significantly correlated with psychological distress symptoms ($r = .43, p < .001$), posttraumatic growth ($r = .37, p < .001$), and negative affect ($r = .35, p < .001$). These relationships were all moderate and positive. This indicated that increased traumatic reactivity was related to increased psychological distress symptoms, posttraumatic growth, and negative mood symptoms.

Summary of traumatic stress outcomes

Prior to joining the police, 85% of the recruits had already experienced at least one traumatic event. However, this high exposure rate to traumatic events was not associated with adverse health effects for the study sample as a whole. Women recruits who had been sexually assaulted indicated that they had higher rates of traumatic stress symptoms. One year later, however, that group of women no longer scored significantly differently on the traumatic stress measure. Only nine recruits left during the first year. There were indications that this group may have had higher than average levels of prior traumatic events and traumatic stress symptoms at entry. Unfortunately for this study (but luckily for the police) their numbers were too few to statistically evaluate this.

During their first year in the police 74% of the recruits experienced at least one traumatic event. This is a high rate of traumatic events exposure. Of the individual traumatic

events assessed by the TSS, the most frequently experienced were: being assaulted (experienced by 43% of recruits); and attending accidents where there were multiple victims or severe mutilation of bodies (experienced by 28% of recruits). The study sample reported that their worst traumatic experiences were: attending accidents with multiple victims or severe mutilations; experiences of death by accident, homicide, or suicide; and being assaulted. Being physically assaulted was particularly upsetting and was associated with significantly higher outcomes on the traumatic stress measure. Attending accidents where there were multiple victims and the other nominated traumatic experiences also resulted in higher mean traumatic stress scores, but not as high as those for the assaulted recruits.

For these early career police officers, therefore, the risk of exposure to potentially traumatic events was substantial. While this is of concern, at this time these experiences did not translate into increased traumatic stress for the group as a whole. The measure for traumatic stress (the IES) remained at a relatively low level, and female recruits, on average, showed significantly lower traumatic stress outcomes than at entry. However, higher traumatic stress symptoms were associated with the recruits who experienced on-duty traumatic events and those who encountered multiple different traumatic events. The relationship between traumatic event exposure and traumatic stress symptoms was investigated with regression analysis. Traumatic events were found to be positive predictors of traumatic stress, even after other variables (time one traumatic stress, organizational stressors, and uplifts) were controlled.

Psychological Distress Symptoms

Levels of psychological distress symptoms reduced over the period of this study. However, while this was a statistically significant result, it was not a large percentage change; mean results being only 7% lower at time two. The time one mean score on the total scale was 33.96, the time two mean score was 31.50. The results from one subscale had not significantly changed (general feelings of distress). However, for the total measure, and for the other two subscales (somatic distress and performance difficulty), mean scores had significantly reduced. This indicated that, on average, the study sample was feeling less psychological distress. Possibly as the recruits have

become more familiar with their job, and more immersed in the police culture (as compared to point of entry) they became less nervous and less distressed. This outcome was significant for the total group, and for males and females separately. Lithgow (2001) found a similar result in her study of 187 police recruits. That study reported a mean time two result of 29.06 for the total scale.

A study of peacekeeping Defense Force personnel over a two-year period also found that levels of stress and anxiety, which were measured by the Mental Health Inventory and a Hassles Scale, significantly reduced during early deployment when compared to pre-deployment levels. However, after returning home and upon follow-up, levels on both measures increased (MacDonald, Chamberlain, Long, Pereira-Laird, & Mirfin, 1998). Contrary to expectations, the deployment period itself appeared to have had little effect on the mental health of personnel. The psychological distress outcomes at time two for the study sample were very similar to those found in a study of 224 New Zealand registered nurses (Green, 1989). This indicated that both populations had similar levels of psychological distress.

Relationships between the study measures and psychological distress

At time two psychological distress symptoms weakly negatively correlated with health ($r = -.32, p < .001$), and to a lesser extent with reduced positive affect ($r = -.26, p < .001$). Psychological distress symptoms moderately positively correlated with traumatic stress ($r = .43, p < .001$), posttraumatic growth ($r = .37, p < .001$), and negative affect ($r = .37, p < .001$). This indicated that there was a relationship between increased psychological distress symptoms and decreased health and positive mood. Increased psychological distress symptoms were also related to increased traumatic stress symptoms, posttraumatic growth, and negative mood. Regression analyses found that psychological distress symptoms were predicted by organizational stressors, even after other variables (time one psychological distress, police traumatic events, and uplifts) were controlled for, but this was not the case for traumatic events: when other variables were controlled for, traumatic events were not significant predictors of the variance for psychological distress.

Positive and Negative Mood

Positive mood states were assessed at entry and follow-up. At time one the items that generated the highest scores were interested, determined, enthusiastic, and active. These findings were not surprising given that the recruits had recently gained entry to the police and had just satisfied the vigorous physical, personality, and psychological requirements. One year later mean positive affect scores had significantly decreased by five points on average; from 39.98 to 34.63, a drop of 13 %. This indicated that after one year in the police the recruits felt less positive. They gave their highest ratings to the same items as before, although in comparison the second set of rankings were considerably lower. The recruits had possibly established an equilibrium level of positive affect that no longer reflected the euphoria of having just been accepted as a police officer. This scale has been administered to 1,002 university psychology students (Watson et al., 1988). At time two the study sample and university students had very similar mean scores.

Negative mood states were also assessed at entry and follow-up. At time one the recruits and students had very similar negative affect scores. These were, on average, low scores for negative mood. The only negative item with a high mean ranking for the recruits was nervous. The next highest mean rankings were for scared, then distressed. These results were not surprising given the new demands of Police College, and the changes in personal circumstances that the recruits had to cope with (living on campus, apart from family and friends etc.). One year later mean negative affect scores had reduced from 17.26 to 14.65; an average 15% reduction. This suggested that the recruits' negative mood had, on average, lightened. The highest ranked negative items were irritable, nervous, and distressed.

At entry the recruits were, on average, in a buoyant positive mood, scoring well above the student norm population. Feeling so positive did not preclude all negative feelings, for these schedules tap two different constructs that are not on a continuum (Nemanick, & Munz, 1994; Watson et al., 1988). The recruits, on average, also tended to be nervous, a little scared and distressed, but overall were no worse than the average university psychology student. At follow-up, positive and negative mood scores had

significantly dropped for both males and females. Positive affect for the male recruits was a little more resilient than for the females. Regarding negative affect, the mean before-and-after scores for both genders were virtually indistinguishable. Overall, the recruits were feeling less negative affect than at entry. It would appear that their familiarity with the profession had reduced their nervous mood. However, their positive mood had also reduced over the time. A prospective study of 187 New Zealand recruits over a one-year period (Lithgow, 2001) closely replicated these results.

At the commencement of this study negative affect (NA) was believed to be a variable that could significantly influence self-reported measures of job stressors and job strains. Research indicated that when negative affect was accounted for, the stressor/strain correlation considerably reduced (Brief et al., 1988). However, subsequent research that examined the impact of negative affect on the stressor strain relationship failed to find correlation reductions as large as first indicated (Chen & Spector, 1991; Jex & Spector, 1996). These studies found that the partialling-out of both trait anxiety and disposition optimism resulted in very little reduction to the magnitude of the stressor/strain correlation. The issue of the importance of negative affect is currently generating considerable debate. Spector et al. (2000) have argued strongly against partialling-out negative affect. They discussed the role of NA as both a bias and causal factor in job stressors and strain, and concluded with a recommendation that it is imperative that partialling-out is not done to control biases that do not exist. That partialling-out should not be done was also supported by Payne (2000) who argued that as the partialling effect is typically small the issue is not particularly important anyway. All these job-stress researchers commented that the issue is complex, and that further research is warranted to understand the role of NA in the job stress process. Cooper (2000) reported that the growing use of statistical controls for NA has not been endorsed as an effective strategy for enhancing the interpretability of job stress research.

In view of the current re-evaluation in the literature regarding the importance of NA, it was decided not to partial-out this variable for the regression analyses. The PANAS variables were only moderately related to the other study measures and, as positive and negative affect were not a focus of any of the research predictions; the PANAS data were not further utilized.

Organizational Stressors

The incidence of organizational stressors (the hassles variables) was assessed at time two only; by this time the recruits had worked in the police for one year. The other items received the highest scores (of all the individual items). The recruits either felt strongly about the negative aspects of the work that had not already been listed, or took the opportunity to reiterate an experience already listed. When these were coded it was apparent that the respondents nominated organizational stressors over operational stressors by a factor of three to one. This was interesting as the other items gave the recruits the opportunity to describe any negative aspects of their work that the Hassles Scale had not already listed. No recruits nominated exposure to traumatic events.

The data from the other items indicated that the recruits were most upset about activity items: especially the roster system, shift work, and lack of sleep. Administrative stressors were also of concern and respondents singled out: lack of training; lack of understanding about rural policing; and feelings of being treated like a number not a person. Resource issues were also raised with lack of manpower, lack of resources, and budget cuts all mentioned. Only one officer nominated unreliable computers, this was surprising, given the furor at that time concerning the police Integrated National Crime Information System (INCIS). This computerized nationwide database was in the process of being abandoned at the time of this study (McFadyen, 1997; Prime Minister, 1999). Coworkers also generated negative reaction with concerns that seniority was ranked above ability. Women were also concerned about working only with men.

The other operational responses largely concerned the courts, and complaint procedures. Recruits commented that hard work went down the drain because of the court system, and one recruit remarked on a fear of appearing in court. The public was described as unthankful and demanding. Advising the next-of-kin that a family member had been killed was also singled out as upsetting. After the other responses, the next highest ranked individual stressors were: excessive paperwork; irregular mealtimes; insufficient resources; unnecessary forms; and insufficient finance or resources to work with.

The individual stressor items were combined into factors, and the means were scaled to 100, to allow the factors to be ranked and compared. Overall, the recruits were most concerned by resource, activity, workload, and administration issues. Resource concerns targeted: insufficient resources; unreliable equipment; budget complaints; and insufficient finance or resources to work with. Activity issues ranked as the second highest area of concern. Activity concerns targeted: irregular meal times; quick changeovers; rushed eating; and shift work interfering with other activities. Irregular meal times had the second highest mean score of the individual items. Workload issues were the third ranked concern. Recruits targeted: insufficient time to complete jobs; far too much work to do; having to meet deadlines; and having too much expected of them. The fourth ranked concern was administration. This factor comprised nine items and targeted: excessive paperwork; unnecessary forms; too much red tape; and inconsistent rules and policy. Excessive paperwork was the highest scoring individual stressor.

Australian Police and Education Sector norms for the Hassles Scale

Norms were available for the Police Daily Hassles and Uplifts Scales, as used in the present study, from the researcher who developed the scales: P.M. Hart (personal communication, June 01, 1998). The scale has been utilized in a large Australian Police Organization (Australian police, $N = 1936$), and to individuals from over 100 public schools in two Australian states (education sector, $N = 4164$). Both the Australian and New Zealand Police Organizations ranked resources as the highest scoring hassle factor. The Australian norm for this was 59 (compared to 46 for this study). Concerns with career opportunities ranked second for the Australian police scoring 56. This factor ranked low for this study sample (scoring only 14) which was not surprising given that the recruits were new to their profession, whereas the Australian officers were at all career stages. The second ranked factor from this study was workload (Australia 46, New Zealand 34). Both the police organizations ranked administration as the third highest ranked factor (Australia 54, New Zealand 33). The one factor that ranked in the top three across all the samples was resources. Regardless of organizational or cultural context resource concerns predominated.

Overall, the present study sample showed lower organizational stressor factor scores than the Australian police and the Australian education sector. Hart et al. (1993) have questioned the assertion that policing is highly stressful, and have suggested that, compared to population norms, police officers reported higher levels of perceived quality of life. The New Zealand police recruits in this study sample have reported fewer daily organizational stressors than either the Australian police, or the Australian education sector, which could indicate tentative support for Hart's suggestion. However, this should be interpreted cautiously regarding the present sample, as this may reflect the fact that these recruits are relatively new to the job, and have not yet reached the stage where career opportunities, or lack of, impact negatively.

Relationships between organizational stressors and the study measures

Organizational stressors moderately and positively correlated with increased traumatic stress reactions ($r = .36, p < .001$) and strongly correlated with psychological distress symptoms ($r = .48, p < .001$). They were weakly and negatively correlated with physical health outcomes ($r = -.18, p < .01$). Personality-clashes, hassles with coworkers, and work and home stressors had moderate to strong positive correlations with traumatic stress and psychological distress symptoms. Work and home stressors were also weakly related to lower physical health ratings. There was a strong positive relationship between workload and psychological distress symptoms. No differences arose to the organizational factor scores dependent upon gender. These results indicated that organizational stressors were possible predictors of symptoms of psychological distress and traumatic stress outcomes. Multiple regression analyses indicated that organizational stressors predicted increased symptoms of traumatic stress and psychological distress, after other variables (time one results of the DVs, police traumatic events, and organizational uplifts) were controlled.

Organizational Uplifts

This study assessed the incidence and effect of daily uplifts (positive work events). As with organizational stressors, the highest mean score for an individual item was generated by the first other space. Many recruits took the opportunity to describe events already listed in the Uplifts Scale, and their responses were all organizational items. The most frequently nominated uplifts were: the job itself; having fun at work; and enjoying work. Coworkers were also frequently nominated. This was also a popular nomination for the other organizational stressors. Coworkers appeared to be associated with both positive and negative daily issues. The recruits' responses included: being able to trust work-mates under pressure; and getting support from the police family. The next highest mean scores were from the items: doing challenging and interesting work; having variety in the work; and getting along and working with fellow coworkers.

The uplifts items were combined into factors, and the means were scaled to 100 to allow the factors to be ranked and compared. The factor with the highest mean rank was the job itself. This factor related to positive elements of the work environment, such as having variety in the work, doing worthwhile interesting and challenging work, and having responsibility. Items in this arena were also nominated most often in the other spaces. Three of these items generated the highest individual mean scores (challenging, interesting, and varied work). The second ranked factor was customer satisfaction. This related to providing quality service, and helping clients/customers. This was also selected as the third ranked other response. The third ranked factor was coworkers. Items in this factor related to issues such as, working with considerate people who listen know what they are doing and are likeable. Coworkers was also the second most common other response, and two of the coworkers items were the in the top five most frequent individual responses. The data from the individual items, the factors, and the other spaces, all reiterated that aspects of the job itself are, on a daily basis, generating the most positive reactions from the recruits. Next in importance being the issues of customer satisfaction and support from coworkers.

Australian Police and Education Sector norms for the Uplifts Scale

Data from the Australian Police ($N = 1936$), and the Australian education sector ($N = 4164$) were compared with study sample data. The three organizations produced very similar mean results for the Uplifts Scale. The same factors ranked the top four for these organizations, although not in the identical order, these were: the job itself; customer satisfaction; workload; and coworkers. These uplifts were indicated as daily sources of enthusiasm, peace, satisfaction, or joy, irrespective of the respondents' occupation or cultural context. Whereas the reported levels of organizational stressors were considerably lower for the study sample, levels of uplifts were very equitable across all the samples. Both the organizational stressors and uplifts results were encouraging for the New Zealand Police Organization.

Relationships between organizational uplifts and the study measures

Uplifts moderately positively correlated with higher health scores ($r = .24, p < .001$) and moderately negatively correlated with psychological distress scores ($r = -.22, p < .001$). All the uplifts factors were weakly to moderately positively correlated with health scores; coworkers produced the highest correlation ($r = .25, p < .001$). Two factors weakly and negatively correlated with decreased traumatic stress scores, these were: work schedule; and workplace management. All the uplifts factors, apart from customer satisfaction and coworkers, were weakly to moderately negatively correlated with reduced psychological distress scores. A gender difference was determined regarding the family uplifts factor; the mean uplifts score for family was significantly lower for females ($M = 10.36$) than males ($M = 11.36$). This indicated that female recruits felt less positive about home and work issues than their male counterparts.

The relationships between organizational uplifts and physical health, and organizational uplifts and psychological distress symptoms, were investigated with multiple regression analyses. The uplifts variable was a possible predictor of physical health after the variables for time one health, police traumatic events, and organizational stressors were

controlled. However, the uplifts variable was not a significant predictor of the variance for psychological distress when other variables were controlled.

Posttraumatic Growth

These recruits indicated that they had low levels of posttraumatic growth when they were assessed at time two. Their mean score was 44.91 and 90% of the recruits scored less than 60 on this scale (out of a possible 126). Scores for males and females were not significantly different. The recruits gave low mean scores for: new possibilities, relating to others, and spiritual change, and moderate scores for: personal strength, and appreciation of life. The recruits had relatively low levels of posttraumatic growth compared to a sample tested by the authors of the scale. The researchers who developed this scale, Tedeschi and Calhoun (1995), reported a mean score for females of 75.18 and a mean score for males of 67.77. For respondents who had experienced severe trauma they reported a mean score of 90.26 for females and a mean of 73.48 for males. Although the present study respondents reported a high rate of traumatic event exposure, this was not associated with a high rate of posttraumatic growth. However, the possibility that traumatic exposure was positively related to posttraumatic growth was indicated in the present study. The traumatic events variable was weakly, but positively, correlated with the PTGI total ($r = .16, p < .05$) and three subscales: relating to others, appreciation of life, and personal strength. New possibilities and spiritual change were not correlated with traumatic event exposure. Possibly religion is a less salient construct for New Zealand police recruits compared to the American population from whom this scale was derived. Regression analyses indicated that traumatic event exposure was a weak, but significant, positive predictor of posttraumatic growth. However, this relationship disappeared when the organizational variables were controlled.

These recruits were still relatively new to their active duties when they were assessed for posttraumatic growth, having had only seven months on the job following their five-month training period. The authors of the inventory have commented that it is not the traumatic event per se that causes the posttraumatic growth to spontaneously occur, but rather it arises as a result of the struggle to impose meaning on the negative experience. Time is a factor in this process, as most people do not experience posttraumatic growth

immediately following a traumatic event (Calhoun & Tedeschi, 1998). Finkel reported that his study participants took between two weeks and four months after the event to develop feelings of posttraumatic growth. Even participants who rapidly found posttraumatic growth stated that they needed to be:

“Removed enough from the agony of the time to gain a new perspective” (Finkel, 1975, p.176).

The recruits who participated in this study provided a baseline measure of posttraumatic growth one year into their profession. Possibly this measurement occurred too early to allow for their processing and rumination about their traumatic events to have developed sufficiently to translate into large amounts of posttraumatic growth for these early career officers.

The Study Measures and Gender

In 1990 only 6.9% of New Zealand police officers were women, however, by 1997 this had increased to 14.75% (Disengagement Summit, 1998). By June 1998 the percentage of women officers was 15.68% (Minister of Police, 1998). The ratio of 25% females to 75% males who entered New Zealand Police College over the period of this study (1997 to 1998) does not represent a gender balance, however, it is greater than it was previously. This trend is likely to continue given police initiatives to increase numbers of female officers (Disengagement Summit, 1998). Previous studies of New Zealand police officers throughout all stages of their careers, (McDowell, 1997; Stephens, 1996a), have not been able to examine differences in traumatic stress effects between males and females due to insufficient numbers of females. In the present study the percentage of female respondents reflected the gender balance of the total cohort for the same year, and numbers were sufficient to satisfy the criteria for statistical analyses. This, therefore, allowed gender effects to be examined.

At time one significant gender differences were associated with the frequency of experiencing several of the Traumatic Stress Schedule events. Significantly more males were robbed and assaulted than females, and more females were sexually assaulted than males. However only one traumatic event correlated with increased traumatic stress results, and this was the experience of being sexually assaulted. Norris (1992) also found

a significantly higher percentage of women (12%) had PTSD symptoms associated with robbery, physical assault, and sexual assault, that was twice the rate for men. It has been suggested that women are exposed to different types of trauma than men (e.g., women report substantially higher rates of sexual assault than men) and that they may have a differential risk for developing PTSD in response to different types of traumatic stressors (Norris, 1992). At time one the present study found that the mean traumatic stress score for sexually assaulted women was twice the rate for that of non-sexually assaulted recruits. However, as only 11 women had experienced this event, this outcome cannot be regarded as a reliable finding. At time two no gender differences were associated with individual Traumatic Stress Schedule traumatic events.

The present study made no specific predictions regarding the role of gender, and statistical analyses indicated that gender did not make much of a difference to the health outcomes, although there was an indication that women may have had reduced levels of traumatic stress symptoms. On average, females indicated reduced levels of traumatic stress (intrusion/avoidance symptoms). The difference was not sufficient to make the overall study sample register a significant drop, which was not surprising given that males outnumbered females three to one. Past work has indicated that in comparison to men, women may be more at risk for developing PTSD (Breslau et al., 1991). However this was not indicated in the present study, for these women recruits one year into their profession. The measures for physical health, psychological distress symptoms, mood, organizational stressors and uplifts, and posttraumatic growth were also evaluated for gender differences.

Regarding health there was no significant gender difference; both males and females gave significantly lower health rankings at time two. A recent study of the effects of PTSD on physical health, also found that there no differences between men and women on the degree to which PTSD predicted reported health problems (Wagner et al., 2000). Both genders showed significantly reduced levels of psychological distress symptoms at time two. Previous studies have indicated that women officers may experience more self-perceived stress (Brown & Fielding, 1993) and task related stressors (Bartol, Bergen, Volckens, & Knoras, 1992) than their male counterparts. The present study did not find women reporting higher levels of psychological distress, nor were there any gender

differences on the organizational stressor factors. Both genders reported significantly less positive and negative affect at time two.

Inwald and Shusman (1984) reported that female officers were more anxious than male officers. In terms of the negative affect items (irritable, distressed, afraid, ashamed, upset, nervous, hostile, guilty, jittery, and scared), on average, both male and female recruits felt less negative compared to when they commenced their training, and both genders felt less positive. Anxiety is not one of the items in the negative affect PANAS scales. Only one gender difference emerged regarding the organizational factors. This was the finding that females felt less positive than males regarding family issues; it was more difficult for females to integrate work and family demands, and the balance of family to work was perceived less positively for females.

Issues Related to the Study; Measurement, Generalizability, and Internal Validity

The Measurement of Traumatic Events

In the present study the impact of positive and negative organizational factors was assessed using the Police Daily Hassles and Uplifts Scales. The study results indicated that, of the study measures, organizational factors made the greatest impact to the recruits' physical and psychological well-being. Given this finding, the assessment of both traumatic and organizational stressors should continue in future, and if one is to be given priority, it should be the assessment of organizational stressors.

Summing the different traumatic events scores the Traumatic Stress Schedule. Adding the number of potentially traumatic experiences has been demonstrated to have an effect on symptoms, however, this remains a crude measure that requires development (Stephens & Long, 2000). Another way of evaluating traumatic experiences is to explore whether, and why, the event is shocking to the individual, regardless of what it

is. In this study this approach was explored qualitatively at time one by asking the question: *what is the worst thing that has ever happened to you?* Two events were nominated the most frequently, and these both involved experiences of death. The first was the traumatic experience of death by accident, homicide, or suicide, and included seeing or handling a dead body. The second response was natural death. Both these types of events were each nominated by 22% of the respondents. The latter response would not have been categorized as traumatic following *DSM-IV* (1994) criteria, and yet this was chosen by one-fifth of the respondents as the worst thing that had ever happened to them. The next most frequently nominated response was relationship difficulties, nominated by 15% of the respondents, this again would not be considered as traumatic by the *DSM-IV* criteria.

There appears to be a discrepancy concerning the events that people themselves consider traumatic, and those assessed by the measurement scales developed to tap traumatic experiences. This study has assessed the impact of traumatic event and organizational stressors. However, the assessment of on-going chronic life stressors (i.e., relationship difficulties, illness, or natural death) were not statistically evaluated. As the recruits have indicated that they found these issues very upsetting, consideration in future should be given to extending the investigation of stressors to also include chronic on-going events such as those mentioned above. One other question (as with the present measuring instrument) would appear inadequate to capture the salience of all other upsetting experiences.

Another means of identifying traumatic events is to look for the common denominators between events that are capable of overwhelming the schemata and belief systems that reflect routine work, training, and experience (Paton, 1994a). These are known as event characteristics, and common examples are: communication and coordination failures; performance failure; organizational constraints; and events involving children (McCammon, 1996). Immediately after a traumatic event, disaster or trauma event characteristics are likely to predominate. However, in the longer term, the nature of the characteristics perceived as stressors may change. Most stressful, for example, may be the reactions of colleagues not involved in the traumatic event, or the process of transition from the disaster role to the normal working role (Paton & Smith, 1996).

While trauma schedules are useful aids to establish exposure rates to traumatic stressors, they do not accommodate the role of environmental factors (e.g., professional support, administrative demands, or managerial characteristics) on psychological reactions, although these can be significant influences in this context (Paton et al., 1999). Stressors inventories therefore need to be expanded to allow for broader assessment, and should incorporate scales to allow the respondents to indicate self-perceived levels of psychological stress associated with their traumatic experiences. As only the event portion of the TSS (Norris, 1990) was used in the present study, the respondents could not be evaluated for PTSD; only the severity of the two most common symptoms was assessed by the IES (i.e., avoidance/intrusion). Nor could the respondents indicate whether they felt resilient to the traumatic experience, or experienced severe immediate reactions.

The Measurement of Traumatic Stress

It is important to establish traumatic stress levels in different populations as traumatic reactivity can be affected by both occupational and cultural differences. Smith and Paton (1997) investigated the impact of traumatic events in different populations using the Impact of Event Scale. That study examined traumatic stress outcomes from fire fighter, social service, and nursing groups. Traumatic outcomes were considered a phenomenon contingent upon the interactions between environmental and disposition variables. The authors reported structural differences evident between cultures, professional populations, and organizations. These indicated that the scale should be calibrated for each unique population being studied to allow it to be used reliably. The present study has provided measures of traumatic stress for police recruits on two occasions, at time of entry, and one-year into the profession. These measures can assist in establishing levels of traumatic stress that are calibrated to the police recruit population. Subsequent assessment of levels of traumatic stress for these recruits, or others, can be evaluated against these baseline measures. This will help prevent the over- or under-estimation of traumatic reactivity.

Generalizability

External validity concerns the extent to which the results of research can be generalized across people, places, and times (Coolican, 1999). Can the results of this study sample be generalized to the broader recruit population? It could be argued that the recruits who responded to this study constituted a self-selected sample that may not have been truly representative of New Zealand police recruits in general. However, this does not appear likely. There was more than sufficient readiness on the part of the recruits to respond to the questionnaires. Response rates were high with 74% of the recruits completing the first questionnaire, and 65% of those respondents completing the second.

An extensive examination was made of the biographic characteristics of two samples of recruits; the 512 recruits who completed the first questionnaire, and the 314 recruits who also completed the second questionnaire (the study sample). Biographical data was obtained from the New Zealand Police Organization for the entire cohort of 693 officers. These data enabled comparisons to be between all the recruits who entered Police College over the study year (N = 693), and those who filled in the questionnaires (N = 512, N = 314) on the variables for age, gender, and ethnicity. The mean age of 27 years was identical for the study sample and the total cohort, as was the age range for the recruits (from 19 to 45 years). The percentage of males and females who returned both questionnaires was representative of the total cohort. For the study sample 72.29% were males, and 27.71% were females. The total cohort consisted of 75.22% males and 24.78% females. These figures vary by less than 3% between the study sample and the total cohort.

The ethnic composition of the study sample was very similar to the total cohort. In the study sample 8.28% identified themselves as Maori, 83.76% selected New Zealand European, 2.55% selected Pacific Islander, and 5.41% selected Other. The New Zealand Police Organization reported 10% Maori, 86% European, 3% Pacific Islander, and 1% Other. These figures are representative, the main differences being explained by the study sample recruits differentiating between New Zealand European and Other. The New Zealand Police Organization specified European (not New Zealand European). Slightly fewer Maori and Pacific Islanders completed the questionnaires, but this

difference was small. The study sample included 1.72% fewer Maori, and 0.45% fewer Pacific Islanders than the total cohort.

Information on marital status and educational qualifications was not available from the New Zealand Police. However, the 314 study sample recruits could be compared against the 512 recruits who completed the first questionnaire for evidence of generalizability. Regarding marital status the categories selected varied by less than one percent between these samples. Given the mean age of the respondents of 27 years it was not surprising to find that 50% of the respondents in both samples had never married. For both samples 44% of the recruits were married or in defacto relationships, and 6% were separated. Regarding educational qualifications, the comparison between the two samples was again equitable. The categories selected varied at most by only two percent. The study sample ($N = 314$) appeared to hold slightly higher qualifications, with 29.62% having a certificate or diploma and 24.84% a university qualification. By comparison 27.06% of the recruit sample ($N = 512$) held a certificate or diploma and 23.73% a university qualification. The recruits in both samples were generally well educated, with only two percent in either sample not holding any school qualifications.

Both samples had markedly similar biographic characteristics. The mean age and range were the same. More females and New Zealand Europeans returned both questionnaires, and the study sample was a little more educated than the recruit sample recruits. Both had a fifty-fifty breakdown between those never married, and those either living in married/defacto relationships, or separated. Both had the same mean age and range. The samples had slightly more females than males compared to the total cohort; however, this difference was small, no greater than three percent between the samples and total. The ethnic composition varied only slightly between the two samples and the total cohort. The time one results on the research measures were examined for two groups; the 512 recruits who completed the Recruit Questionnaire, and the subset of 314 recruits who also completed the Officer Questionnaire, and very similar mean outcomes were determined.

The differences were very minor regarding both their biographic characteristics, and their time one results on the research measures. It can be confidently asserted that the study

sample was representative of the total recruit population for that year. This study relates only to police recruits during the course of their first year, it is not intended that the results be generalized to the wider population of New Zealand police officers.

Internal Validity

Coolican (1999) has defined internal validity as the extent to which the effect found in a study can be taken to be real. Threats to internal validity arise if aspects of the design or method of a study weaken the likelihood that a real effect has been demonstrated. Cook and Campbell (1979) have provided a framework for internal validity issues and this has been applied in relation to this study. On occasions a threat to validity may arise due to unrelated coincidental extraneous events that occurred between pretest and posttest that were not part of the research (a history threat). An example would be if an organization decided to cut say 10% of its work force. The Police Organization during the time of this study did not experience any such upheavals. Prior to the Integrated National Crime Information System (INCIS) being implemented the police down-sized by 180 officers as of March 1997 (McFadyen, 1997). However, this was before the commencement of this study in September 1997. It had been proposed that when INCIS came on-line that the police would reduce numbers by a further 540 officers, however, the curtailment and subsequent abandonment of INCIS in August 1999 prevented this happening. Maturation effects to validity may arise due to the participants growing older, wiser, more tired, and so on. To counter this, all the participants were pre- and post-tested over a standardized one-year period.

Selection procedures may also result in threats to validity. For example, participants may be highly motivated personnel. To counter this threat, all the recruits who entered the Police College over a one year period were invited to participate in this study. As discussed above, the biographic characteristics of those who did participate in the study were compared to those of the total cohort, and no differences were discerned. Participants who had to be prompted to return their questionnaires were compared to those who did not, no differences were observed; recruits in intake 8 who did not return the Recruit Questionnaire within ten days were prompted with a letter requesting the questionnaire be completed. The recruits who responded to this request were compared

to those recruits in intakes 1 to 8 who returned the questionnaire un-prompted on the study measures. No significant differences were found. Recruits, who were resent the Officer Questionnaire and faxed a reminder letter, were compared to those who returned the questionnaire un-prompted. No significant differences occurred on any of the study measures.

Familiarity with the testing measure can also be a threat to validity. As the study had a one-year period between assessments for all the participants, this spread any reactive threat evenly. An instrumentation effect could arise due to changes in the implementation of the measuring instrument. This was countered by applying normed, valid, and reliable tests. The traumatic events measure was adapted to assess specific police experiences on the second occasion. Because of this, the time one and time two results on this measure were not compared. Statistical regression threats to validity concern the fact that extreme scores tend to regress towards the mean on repeated measures. This usually occurs if people with extreme scores are chosen for treatments, or if the measures have low reliability. For the present study no attempt was made to gather data from any pre-selected group of recruits. The data was also examined for the presence of outliers using the Mahalanobis distance criteria for elimination. Mortality effects due to the kinds of people who drop out of the program could also be of concern. However, very few recruits resigned from the police over the period of the study. Only nine left and these were too few to significantly affect the group outcomes. The results of the study measures were assessed at pretest for the 512 recruits who completed the first questionnaire, and compared to the study sample (the 314 recruits who completed both questionnaires); very similar outcomes were observed for both samples.

Limitations to this Study

This study employed a longitudinal framework that allows for future multi-wave assessment of the respondents as they become further immersed in their profession. Golembiewski, Billingsley, and Yeager (1976) have proposed three types of changes be considered when evaluating outcomes in organizational psychology. The first is *alpha* change, this concerns changes in factor means, and is the type of change examined in this study (e.g., changes in health ratings). The second is *beta* change; this could occur if the

person recalibrated their rating system (e.g., a recalibration by a respondent of the scale for assessing health status). This could have been evaluated by asking the respondents at time two, to retrospectively evaluate their time one ratings. The third type of change is *gamma* change, which is a major change in the perspective or frame of reference within which a phenomenon is perceived (e.g., a reconceptualization of the meaning attached to health) (Norman & Parker, 1996; Smith & Paton, 1997). A possible limitation to this study was that *beta* and *gamma* changes were not evaluated. Schaubroeck and Green (1989) have developed a factor-analysis model that analyses changes in a manner that separates shifts in perspective (*beta* and *gamma* change), from changes in factor means (*alpha* change) over time (Paton & Smith, 1999). Should further multi-wave assessment proceed, than the possibility that *beta* and *gamma* changes may have occurred should also be investigated, this would determine if there were any effects of recalibration, or changes to the frame of reference attached to the measures.

This study relied on self-report data, and this means there was always the risk that respondents will not be totally honest in their responses. This is particularly relevant in terms of the measures for physical and psychological health. Police recruits may have been reluctant to admit to any adverse symptoms despite assurances of confidentiality, particularly as the questionnaires were coded with their personal QID numbers. This may well have been a factor with the high physical health rating determined at time one. For future investigations inter-scorer agreement could be assessed by asking significant others to also provide scores for the participants on some of the measures. However, this was beyond the ethics approval obtained for this study.

Unmeasured Variables

There are other variables known to affect the stressor/strain process that were not measured in this study. These include pre-event variables such as personality, training and preparation, and coping styles. The impact of personality variables measured by the NEO Personality Inventory (neuroticism, extroversion, and openness to experience, agreeableness, and conscientiousness) have been investigated with police body-recovery teams, and officers were found to be more extroverted and stable (i.e., with lower neuroticism) than norms for the general population (Thompson & Solomon, 1991).

These traits were expected to lead to effective forms of coping, and, in turn to the potential for posttraumatic growth (Moran & Shakespeare-Finch, 2002). The NEO Personality Inventory is currently being evaluated with New Zealand police recruits. Initial findings have indicated that measures of these personality traits, combined with cognitive ability measures, may be of benefit when selecting police personnel (Black, 2000). That study is planned to extend to the investigation of personality traits and job performance during the course of a police career. Other trait variables, such as optimism, hope, and humor may also affect the aftermath of a traumatic event (Moran & Shakespeare-Finch, 2002).

Social support is another variable found to impact upon the development of traumatic stress in police officers (Stephens, 1996a; Shakespeare-Finch, Paton, & Violanti, 2002). For police officers support from family and friends was associated with reduced traumatic stress symptoms. Communication issues, such as the ease of talking about trauma, and positive communications about work, were found to moderate the effects of stress for police officers; higher levels were associated with a weaker trauma/strain relationship (Stephens & Long, 2000). Training and support strategies that foster the normalization of stress reactions could enhance the well-being of both the family and the police officer (Anderson et al., 1991; Shakespeare et al., 2002). The impact and resolution of traumatic exposure is also affected by individual variables such as the individual's cognitive style and the meaning they attribute to an event (McFarlane, 1992).

Occupational stressors have been limited in the present study to traumatic event experiences. Hart et al. (1993) developed an extensive list of other daily positive and negative occupational stressors that may also impact upon police officers' well-being. These include events such as: getting a good result in court, poor media coverage, outside interference in police work, hoax calls, and going on a raid. Such occupational experiences were not the focus of this study, and the length of the Officer Questionnaire precluded their inclusion, however, they could be incorporated into future investigations. Coping styles, including humor and imagery, have been identified as important ways of mitigating the psychological effects of traumatic exposure. For example, Taylor and Frazer (1982) found that imagining that they were not human facilitated the retrieval of human body remains. A study of New Zealand police officers' coping styles by Adler

(1992), found that police tended to use an active problem-focused style of coping and humor to help them deal with job stress, and that they perceived these methods to be relatively effective.

While numerous factors undoubtedly impact upon police officers' psychological and physical well-being, the focus of this study was the impact of traumatic and organizational stressors upon the recruits' psychological and physical health. This focus arose from earlier studies that suggested that organizational stressors are the major source of stress among police officers (Brown & Campbell, 1990; Brown and Fielding, 1993; Evans & Coman, 1993; Kroes, 1986; Martelli et al., 1989; Hart et al., 1995). While this has been investigated in the present study with recruits, there are also other groups of people not covered who deserve attention. Officers throughout all stages of their career should also be monitored and evaluated. Families of police officers may offer support, and suffer traumatic reactivity, as may non-sworn officers employed by the police. The impact of traumatic stress on these people should be of concern to the Police Organization, and their needs assessed and provided for.

Issues for Future Research

As this study has been planned to allow for future multi-wave assessment it would be desirable to have this happen. Particularly in regard to posttraumatic growth, which usually requires the passing of time to develop. This study reports the results of recruits who completed two questionnaires. Of concern are those recruits who did not complete the Recruit Questionnaire, and those who were sent the Officer Questionnaire but did not complete it. The status of these recruits regarding the study measures is unknown. Further research on these recruits could be possible by evaluating New Zealand Police Organization statistics on variables such as; sick leave days off, visits to a psychologist, or withdrawal from the police. This could enable a comparison to be made between those recruits who completed questionnaires versus those who did not. This is beyond the ethics approval obtained for this study.

Nine recruits left the police during the study period. While this low number is good news for the organization, this meant it was not statistically possible to determine

whether these recruits differed from the norm. Initial results indicated that this group averaged slightly higher numbers of prior traumatic events than did the study sample, and had, on average, higher symptoms of traumatic stress. Whether these outcomes differentiate this group from the study sample could not be statistically determined. It would be of interest to continue to monitor officers who resign. As numbers increase it would eventually become possible to apply inferential statistics. A further area for future research would be to reassess officers who resign as they exit the police. This study had a one-year pre- and post-test design. Therefore, recruits who resigned in the interim were not reassessed.

Further research on the implications of posttraumatic interventions is warranted. If a police officer has positive outcomes following a traumatic experience, than being exposed to an intervention designed to deal with 'inevitable' negative outcomes can end up negating any positive gains from the experience (Paton & Stephens, 1996). Interacting with those who are distressed from the experience can affect the others, making them feel worse. The participants may be contaminated by the trauma experience of others, and this may transfer to their own traumatic memory (Dunning, 1999; Paton et al., 2000). It is important to bear in mind that there may be resilient individuals who will manage, by their own efforts, or with the support of their peer group, family, or friends to 'snap back' from significant challenges.

Implications for the Police Organization from the Study

Outcomes

Traumatic Event Exposure

Of the police traumatic events that were assessed, being assaulted, and attending accidents where there were multiple victims or severe mutilations, were associated with higher traumatic reactivity, so to was the other responses category. Being physically assaulted was associated with the highest traumatic reactivity. A study of New Zealand

police officers at all career stages, also found that assaults were regarded as stressful (Stephens and Miller, 1998). Physical attack was the third highest ranked stressor in an American study by Violanti (1996b). Surpassed only by killing someone in the line of duty and the death of a fellow officer. In the present study, the latter two traumatic events were each experienced by only one officer, which precluded statistical analysis of associated traumatic outcomes. Most, but not all, of the reported assaults in the current study were minor, however, some where not. For example in the words of one officer:

“I attended a domestic incident, was assaulted by an offender with an iron bar and received a 4 by 2 centimeter laceration to left cheek and 2 broken teeth. Hospitalized and underwent dental and plastic surgery”.

Given the results of this study, and earlier research, the impact of assaults on police officers should be taken seriously by the Police Organization.

As mentioned, one officer witnessed the deliberate killing of a police officer, and one the accidental death of a police officer. Twenty-five recruits witnessed the experience of a member of the public being killed, 24 experienced multiple or disturbing homicides, 89 attended accidents with multiple victims or severe mutilations, and two attended disaster victim identifications. When multiple experiences of the same event are allowed for this increased to 203 traumatic events. At least 203 traumatic incidents occurred to on-duty police recruits, which under the guidelines of the Trauma Policy (New Zealand Police, 1992) should have required mandatory referral to a health professional. This does not include an additional 95 on-duty traumatic events described under the other category. Only 32 recruits (from the sample of 314) answered yes to the question: *have you seen a psychologist for work related stress under the trauma policy?* The 203 traumatic incidents that occurred to on-duty recruits did not include an additional 133 assaults to on-duty recruits, incidents that may have warranted voluntary referrals to post-trauma support services. It would appear that many recruits are not receiving post-trauma support even when referral should be mandatory. Recruits on their first year on the job also would also not appear to be requesting many instances of voluntary counseling.

Future monitoring of traumatic event exposure is warranted, for evidence suggests that experiencing traumatic events does not inoculate against traumatic stress reactivity (Baldwin, 1998; Buchanan et al., 2001; Carlier, 1999; Green et al., 2000; Horowitz et al., 1995; Norris, 1992; Stephens et al., 1999; Vrana & Lauterbach, 1994). The results of this study confirm that increased traumatic reactivity is associated with multiple traumatic experiences. Given the nature of the police profession, this is likely to become even more of a significant threat to these recruits in future.

Organizational Stressors

An evaluation of the submissions from New Zealand psychologists regarding their Trauma Policy referrals indicate organizational and management factors were seen to be significant sources of stress (Disengagement Summit, 1998). Significant organizational factors included increased workloads and insufficient resources as major factors, with poor management, legislative changes, and paperwork commonly reported. Several psychologists also commented that the Trauma Policy was not used effectively and that some staff miss out. The results of the present study would emphasize many of the findings reported by psychologists, particularly regarding under-utilization of the Trauma Policy, and the negative feelings generated by resource, workload, and administration concerns. One officer in the study felt so incensed as to annotate items in the organizational uplifts scale:

Receiving recognition for good work “Does not happen”

Having sufficient staff “When does that happen??”

Having sufficient resources “Yeah right”.

Regression analyses performed for this study indicated that organizational stressors significantly predicted traumatic stress and psychological distress outcomes when other variables were controlled. Of all the independent variables examined, this was the one that consistently showed a direct impact upon the psychological health variables. Particularly interesting was the finding that organizational stressors explained more of the traumatic stress variance than did traumatic events themselves when other variables were controlled. To reduce stress levels the Police Organization should endeavor to decrease organizational stressors as a priority.

Comparative data on organizational stressors was available from the Australian Police ($N = 1936$) and the Australian education sector ($N = 4164$) (P. M. Hart, June 01, 1998). The one factor ranked in the top three for all three organizations was resources. Regardless of the organizational or cultural context resource concerns resulted in the respondents feeling pressured, bothered, or hassled at work. The Police Organization should attempt to mitigate resource concerns, explore the needs of officers in terms of the support they require from the organization, and acknowledge the pressures that lack of resources generate.

This study sample ranked activity issues as their second area of concern. The recruits did not appreciate irregular meal times, quick changeovers, rushed eating, or shift work interfering with other activities. This would appear to be an area in which the Police Organization could instigate some positive changes, particularly in relation to meals and changeovers. This concern by recruits is not spurious. A study by Violanti et al. (1986) indicated that police work on alternating shifts causes an upset of the body's biological clock, and upsets the digestive cycle. That study reported that officers ate at unusual times of the day, often high fat, low vegetable diets, and fit their meals in between stressful calls. This has been associated with an elevated risk for cancer of the colon (Violanti et al., 1986).

Workload issues ranked third and contributed to the recruits feeling under pressure on a daily basis. The organization should endeavor to cut down on unnecessary work, reprioritize if necessary, and if possible recruit more staff. The fourth ranked organizational stressor factor was administration. Issues concerned unnecessary forms, too much red tape, and inconsistent rules and policy. Excessive paper work was the highest scoring organizational stressor item. This should be of concern to the Police Organization and should immediately be targeted as an area requiring streamlined procedures. A number of commonly reported organizational stressors could be reduced through effective comprehensive training programs, effective supervision, adequate salaries, increased staff, and the provision of up-to-date appropriate equipment. That is, however, dependent upon the financial resources of the New Zealand Government, communities, and the Police Organization.

Organizational Uplifts

Examining the recruits' positive daily experiences also has implications for the Police Organization. The data indicates the importance that the recruits rate the job itself. This concerns interesting, varied, challenging work opportunities. The organization should recognize the importance of variety in the work and emphasize this for recruitment and training procedures. Recruits should be encouraged to have diversity in the workplace, and experience varied aspects of the job. Customer satisfaction rated highly with these recruits. The Police Organization should endeavor to heighten this aspect of the job, and allow the officers to interface with the public in a positive manner. When the results of this study were compared with the Australian Police and education sector (P. M. Hart, personal communication, June 01, 1998) the same four factors ranked in the top four across all the study samples. Irrespective of these respondents' occupation or cultural context the factors that contributed to feelings of enthusiasm, peace, and satisfaction were: the job itself, customer satisfaction, workload, and coworkers.

Reduced posttraumatic stress reactions have been significantly associated with good work practices, and even more so, with good management procedures (Alexander & Wells, 1991; Alexander, 1993). In the present study, regression analysis of the variance for physical health outcomes indicated that uplifts was a possible predictor of increased physical health outcomes when other variables were controlled. Uplifts had a positive, and beneficial, impact upon physical health. This was only a weak effect, but still it indicated that daily work uplifts were associated with improved physical health outcomes. Another interesting finding was that uplifts moderated the relationship between traumatic events and posttraumatic growth. Regression analyses indicated that that posttraumatic growth was positively related to traumatic events if uplifts were high even after other variables were controlled. Uplifts also directly but weakly predicted the positive development of posttraumatic growth when other variables were controlled. These results indicate there are benefits associated with a positive work environment.

Posttraumatic Growth

Debates over the efficacy of debriefing (e.g., Avery & Orner, 1998; Carlier et al., 1998; Deahl et al., 1994; McFarlane, 1988; Paton et al., 2000; Stuhlmiller & Dunning, 2000) have led to an understanding that exposure to a traumatic event produces reactions that occur along a continuum. To assume that traumatic exposure produces trauma, or even stress, ignores the reality that many individuals value their traumatic event as a learning and growth experience (Dunning, 1999). Accepting this perspective has implications for police post-trauma support. To maximize resilience (the process of self-righting and growth) Bartone (2000) suggested attention be given to the organizational culture that surrounds the traumatic event, as leaders who model positive responses to change and unpredictability set a positive example for subordinates. Managers can sustain resilience by acting as role models (e.g., by acknowledging their own feelings, and providing feedback to staff) (Paton, 1997). Management behaviours can demonstrate how staff can reconcile the personal impact of the event, with the process of returning to work, and provide a framework for the positive resolution of the experience (Johnston & Paton, 2002).

An organizational climate of care needs to be fostered (Alexander et al., 2000; Best et al., 2000). Minimization and denial from external sources can exacerbate traumatic stress, while validation and normalization can act prophylactically to improve trauma recovery (Dunning, 1999). Embracing positive outcomes can model growth and recovery from traumatic events, whereas witnessing other people re-experiencing frightening and traumatizing stimuli can be upsetting. Tedeschi and Calhoun (1996) suggest that since growth is the antithesis of posttraumatic stress disorder, posttraumatic growth is a novel approach to psychotraumatology. People who discover or create the perception of positive changes shed light on the problems of those who continue to suffer (Calhoun & Tedeschi, 2000; Tedeschi & Calhoun, 1996; Tedeschi et al., 1998). One way of fostering posttraumatic growth in the therapeutic context is by actually introducing the possibility of this having occurred (Tedeschi & Calhoun, 2002).

Recovery from traumatic event exposure from a personal growth perspective could be incorporated in post-trauma group recovery sessions by the therapist asking questions

such as: *how has the traumatic event affected the client's life?; what has he or she learnt from it?; has he or she benefited from it in any way?* The therapist can shift to the positive side of having experienced a trauma if the client is able to perceive that as existing (Carlier, 1999). The client could be encouraged to see the traumatic event as offering a new perspective to life, perhaps an expression of inner strength or courage, or a resolution to do more to help others. What is most important is that the client, after the catharsis of emotions, feels better than before and begins to appreciate life more (Carlier, 1999).

Dunning (1999) recommends that the mental health professional perceive their role as one of a facilitator in a debrief process that occurs informally, as the professional participates in organizational processes of trauma recovery. The aim of the debrief being to facilitate a positive sense of coherence that provides salutary effects for stressed or traumatized individuals through group activities (Dunning, 1999). While clinical diagnosis is essential for the identification and remediation of traumatic consequences, this should be supported by a format that accentuates the positive consequences of involvement in potentially traumatic situations (Calhoun & Tedeschi, 2002). This requires a paradigm shift from the pathogenic oriented debriefing to the salutogenic model of resolution (Violanti, 2000).

Gender Outcomes

This study found very few gender differences at time one, and even less at time two. At the time this study commenced it was found that more males had been robbed and assaulted than females, and that more females had been sexually assaulted. Only the latter experience was associated with higher traumatic stress scores, and this was not a reliable finding, as only 11 females had been sexually assaulted. One year later the frequency of their police traumatic event exposure was not differentiated by gender, nor did gender make any difference to posttraumatic growth outcomes. The group of sexually assaulted female recruits was not significantly different regarding their time two traumatic reactivity. Both males and females reported reduced physical health scores, and lower positive affect scores. On the positive side both males and females reported

significantly lower psychological distress and positive affect scores, and females indicated significantly lower traumatic stress outcomes.

Regarding the organizational factors, only one gender bias was indicated. It appeared that female recruits felt less satisfaction concerning the integration of their work and home life. The demographic variables indicated that, at commencement of training, the recruits were on average young, with a mean age for males of 27.79 years, and a mean age for females of 26.90 years. Half were living in married or defacto relationships. Their status regarding children was not determined. However, given their age and marital status, it is likely that the complexities of juggling work and home will become of increasing concern, particularly for women officers.

Ramsey of the President's Advisory Committee on Women (Cooper et al., 1982) argued that it is not entry into the work force that causes stress for large numbers of women, but rather their dual role and the nature of many of their low status jobs. In the New Zealand Police, females disengage at a younger age and with a shorter length of service than their male counterparts (Disengagement Summit, 1998). They also perform fewer criminal investigations and hold lower ranked positions; in 1998 only 8.99% of female officers, compared to 13.30% of male officers, were involved in criminal investigations, as opposed to general and traffic duties. Only 5.4% of female officers held ranks above constables, as compared to 24.8% of male officers (Minister of Police, 1998). During their first year with the police all the recruits are ranked as probationary constables, therefore, issues of rank were not relevant for the present study. The finding that female recruits, on average, exhibited reduced traumatic stress one year into the profession should be monitored, given the likelihood that during the course of their police career, they will probably hold lower ranks and perform more routine duties, than their male counterparts.

Conclusion

An event that is perceived as traumatic by one individual may not be seen as highly challenging by another. Because life and work are inherently stressful, the impact of a given event should be defined as the difference between group-specific norms and post-event scores. Therefore, there is a need to define normative levels of stress and traumatic reactivity for critical occupations (Paton & Smith, 1996). The availability of such data can then allow the comparison of individual scores against population specific norms, to identify individuals whose levels of symptoms suggest they are currently at risk (Paton & Smith, 1996). This study has provided measures of physical health, traumatic stress, and psychological distress for recruits as they enter the police, and at one year into their profession.

The baseline measures enabled analyses of the implications of exposure to traumatic events and physical and psychological health effects to be determined along with the interaction of the effects of the recruits' organizational environment. That traumatic events elicit negative outcomes is well documented (Brown & Campbell, 1990; Gersons, 1989; Horn, 1990; Mann & Neece, 1990; Miller, 1996; Stephens & Long, 2000; Williams, 1993). However, many of these studies were somewhat biased in that they were designed to capture data reflecting pathological outcomes. Work in the past has typically focused on the relationship between traumatic exposure and the development of distressing reactivity to traumatic events (e.g., PTSD symptoms, sick leave, job losses, suicides, or training and litigation costs). However, recent work has emphasized the need to expand the range of anticipated potential outcomes to include positive and growth experiences. In reality many officers exposed to traumatic events do manage to assimilate these experiences, adapt to the consequences, and may be even feel some good emanating from the experience. The present study has moved beyond the confines of the medical or pathogenic model and has examined recruits' traumatic event exposure, in conjunction with the daily organizational stressors and uplifts inherent in the police work environment, with regard to posttraumatic growth consequences as well as psychopathology.

The consequences of traumatic event exposure were not all negative. Posttraumatic growth outcomes were weakly indicated in this study, and should be reassessed during the course of these recruits' police careers. There were indications that organizational uplifts contributed to better physical health rankings, and uplifts exerted both a direct and moderating effect upon the development of posttraumatic growth. High numbers of uplifts possibly predicted posttraumatic growth, and moderated the relationship between traumatic events and traumatic stress after other variables were accounted for. When police traumatic event exposure was associated with high uplifts indications were that higher posttraumatic growth occurred. Recruits appreciated aspects of the job itself (doing challenging work and having variety in the work) and customer satisfaction most highly. These results emphasize the importance of the positive daily aspects of the work environment, and the significant effect they can have in enabling recruits to develop positive feelings of growth following traumatic exposure.

Evidence to date indicates the recruits in this study commenced with a psychological 'warrant of fitness', and remain in a robust state one-year later. This finding is contrary to previous British police studies, which have indicated that recruits were among the most stressed police personnel during their period of probation (Brown & Campbell, 1990; Fielding, 1987), and that probationary constables report the most stress (Gudjonsson & Adlam, 1985). The present study found that this group of early career police officers are not exhibiting mental health concerns. As was found in a study of New Zealand military peacekeeping personnel (MacDonald et al., 1998), and contrary to expectations, deployment has not greatly affected the mental state of personnel.

The results of the present study should not be taken for granted. There is evidence that the prevalence of lifetime trauma contributes to psychological problems (Baldwin, 1998; Buchanan et al., 2001; Carlier, 1999; Green et al., 2000; Horowitz et al., 1995; Norris, 1992; Stephens et al., 1999; Vrana & Lauterbach, 1994). The current study also supported the findings of Stephens and Miller (1998) with higher rates of traumatic stress symptoms associated with officers who had experienced multiple traumatic events and on-duty traumatic events.

The present study provided additional support for the suggestion that, for duty-related populations, the organizational environment ~~plays a direct role in the causation of both~~ ^{is implicated} ~~general and~~ ^{both psy. distress} traumatic stress reactions (Paton & Smith, 1999; Paton, Smith et al., 2000; Smith & Paton, 1997). This study has endorsed a model of traumatic stress etiology that includes organizational factors as significant components in the stressor/strain process. Organizational stressors were examined in relation to psychological distress; however, post-hoc study findings strongly suggested that they have an important interrelationship with traumatic stress outcomes as well. The study results indicated that organizational stressors had a greater impact upon traumatic stress outcomes than did traumatic event exposure when other variables were accounted for. Organizational uplifts had a salutogenic effect upon physical health, and aided the development of posttraumatic growth following traumatic exposure.

The study outcomes also supported theories that have suggested traumatic outcomes should encompass positive as well as negative sequelae (Calhoun & Tedeschi, 1998, 2000; Tedeschi & Calhoun, 1995, 1996; Tedeschi et al., 1998). This has important implications for organizational management, particularly regarding post-trauma support interventions. Prevailing organizational practices, such as organizational care, support for staff well-being, and post-trauma salutogenic interventions can mediate the impact of traumatic exposure and facilitate recovery and personal growth from traumatic stress (Alexander et al., 2000; Best et al., 2000; Paton & Smith, 1999). This study has provided the basis for an ongoing longitudinal investigation into the complexities of the relationship between traumatic and organizational experiences, and the development of physical health, traumatic stress, and psychological distress symptoms, as well as posttraumatic growth outcomes. Further investigations are warranted to see how these complex relationships change as these early career police officers become further immersed in their profession, and encounter on-going traumatic and organizational stressors.

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APPENDICES

APPENDIX A

Recruit Questionnaire

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ROYAL NEW ZEALAND POLICE COLLEGE RECRUITS

Recruit Questionnaire

Traumatic Incident Exposure



**MASSEY
UNIVERSITY**

For Office
Use Only

6) Compared to **the person in excellent health**, how would you rate your health at the present time?

(13)

- Terrible 1
- Very poor 2
- Poor 3
- Fair 4
- Good 5
- Very good 6
- Excellent 7

7) This scale consists of a number of words that describe different feelings and emotions.

Please indicate to what extent you have been feeling this way in the last few days.

Read each item and then write the appropriate answer (a number from 1 to 5) in the space next to that word. Use the following scale to record your answers.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

- | | | | | | |
|------------|--------------------------|------------|--------------------------|--------------|--------------------------|
| interested | <input type="checkbox"/> | irritable | <input type="checkbox"/> | proud | <input type="checkbox"/> |
| distressed | <input type="checkbox"/> | alert | <input type="checkbox"/> | afraid | <input type="checkbox"/> |
| excited | <input type="checkbox"/> | ashamed | <input type="checkbox"/> | enthusiastic | <input type="checkbox"/> |
| upset | <input type="checkbox"/> | inspired | <input type="checkbox"/> | active | <input type="checkbox"/> |
| strong | <input type="checkbox"/> | nervous | <input type="checkbox"/> | hostile | <input type="checkbox"/> |
| guilty | <input type="checkbox"/> | determined | <input type="checkbox"/> | jittery | <input type="checkbox"/> |
| scared | <input type="checkbox"/> | attentive | <input type="checkbox"/> | | |

(14-16)

(32-33)

The following questions that make up the rest of the questionnaire are to explore your feelings and reactions to possibly traumatic events you may have experienced. It would be most helpful to this study if you could answer each section, however if any part of the questionnaire disturbs you, you are not obliged to answer.

A traumatic event is any event which is outside your normal range of experiences. Some people only ever have one or two traumatic experiences in a lifetime while some have many more.

Listed below are a few traumatic experiences which may have happened to you at some time in your life.

After the question please **give the number** for the answer that is best for you in the box provided.

For Office
Use Only

8) **Did you ever serve in military combat, or in peacekeeping duties?**

1 NO (Please go to question 9)

2 YES (Please continue)

(34)

Did this happen

1 Once

2 More than once

When did this happen? (If it happened more than once, please give the last time)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

IN CONFIDENCE

For Office
Use Only

9) Did anyone ever take something from you by force or threat of force such as in robbery, mugging or hold-up?

1 NO (Please go to question 10)

2 YES (Please continue)

(37)

Did this happen

1 Once

2 More than once

When did this happen? (If it happened more than once, please give the last time)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

10) Have you ever been assaulted, injured or had your life placed under threat by another person?

1 NO (Please go to question 11)

2 YES (Please continue)

Did this happen

1 Once

2 More than once

When did this happen? (If it happened more than once, please give the last time)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

(42)

IN CONFIDENCE

11) Did anyone ever make you have sex by using force or threatening to harm you? This includes any type of unwanted sexual activity.

1 NO (Please go to question 12)

2 YES (Please continue)

(43)

Did this happen

1 Once

2 More than once

When did this happen? (If it happened more than once, please give the last time)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

12) Did you ever suffer injury or property damage because of fire?

1 NO (Please go to question 13)

2 YES (Please continue)

Did this happen:

1 Once?

2 More than once?

When did this happen? (If it happened more than once, please give the last time)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

(48)

For Office
Use Only

13) Did you ever suffer injury, evacuation, or property damage because of severe weather or either a natural or man-made disaster?

1 NO (Please go to question 14)

2 YES (Please continue)

(49)

Did this happen

1 Once

2 More than once

When did this happen? (If it happened more than once, please give the last time)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

14) Has a close friend or family member ever died because of an accident, homicide, or suicide?

1 NO (Please go to question 15)

2 YES (Please continue)

Did this happen

1 Once

2 More than once

When did this happen? (If it happened more than once, please give the last time)

(54)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

15) Were you ever in a motor vehicle accident serious enough to cause injury to one or more passengers?

1 NO (Please go to question 16)

2 YES (Please continue)

Did this happen

1 Once

2 More than once

When did this happen? (If it happened more than once, please give the last time)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

(55)

16) Did you ever have some other shocking or distressing experience, something that has not been mentioned yet?

1 NO (Please go to question 17)

2 YES (Please continue)

Did this happen

1 Once

2 More than once

When did this happen? (If it happened more than once, please give the last time)

<6 mths ago
1

6-12 mths ago
2

1-5 yrs ago
3

>5 yrs ago
4

(60)

18) Please use your answer to question 17 to complete the following:

Below is a list of comments made by people after stressful life events. Please check each item, indicating how frequently these comments were true for you *DURING THE PAST SEVEN DAYS*. If they did not occur during that time, please mark the "not at all" column.

Please use the following scoring system

0: Not at all 1: Rarely 3: Sometimes 5: Often

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	0: Not at all	1: Rarely	3: Sometimes	5: Often	
1. I thought about it when I didn't mean to.	0	1	3	5	(2 / 1)
2. I avoided letting myself get upset when I thought about it or was reminded of it.	0	1	3	5	
3. I tried to remove it from memory.	0	1	3	5	
4. I had trouble falling asleep or staying asleep, because pictures or thoughts about it that came into my mind.	0	1	3	5	
5. I had waves of strong feelings about it.	0	1	3	5	
6. I had dreams about it.	0	1	3	5	
7. I stayed away from reminders about it.	0	1	3	5	
8. I felt as if it hadn't happened or it wasn't real.	0	1	3	5	
9. I tried not to talk about it.	0	1	3	5	
10. Pictures about it popped into my mind.	0	1	3	5	
11. Other things kept making me think about it.	0	1	3	5	
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.	0	1	3	5	
13. I tried not to think about it.	0	1	3	5	
14. Any reminder brought back feelings about it.	0	1	3	5	
15. My feelings about it were kind of numb.	0	1	3	5	

Please go to question 19

IN CONFIDENCE

- 19) The following questionnaire is a standard one dealing with general stress symptoms. Please describe how much of each of the symptoms you experienced **during the past seven days**. Please use the following scale to record your responses.

Not at all 1

A little bit 2

Quite a bit 3

Extremely 4

Difficulty in speaking in times of excitement	1	2	3	4
Trouble in remembering things	1	2	3	4
Concerns about sloppiness or carelessness	1	2	3	4
Blaming yourself for things	1	2	3	4
Pains in the lower part of your back	1	2	3	4
Feeling lonely	1	2	3	4
Feeling 'blue'	1	2	3	4
Your feelings being easily hurt	1	2	3	4
Feeling that others do not understand you, or are unsympathetic	1	2	3	4
Feeling that people are unfriendly, or dislike you	1	2	3	4
Having to do things slowly, to ensure that you're doing them properly	1	2	3	4
Feeling inferior to others	1	2	3	4
Muscle soreness	1	2	3	4
Having to check and double check what you do	1	2	3	4
Occasional hot or cold spells	1	2	3	4
Your mind occasionally going blank	1	2	3	4
Either a numbness or tingling in your body	1	2	3	4
A lump in your throat	1	2	3	4
Trouble in concentrating	1	2	3	4
Feeling of weakness in parts of your body	1	2	3	4
Occasional 'heavy' feelings in your arms and legs	1	2	3	4

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(16)

(36)

Thank you for your consideration

IN CONFIDENCE

APPENDIX B

Recruit Questionnaire Information Sheet

INFORMATION SHEET

Royal New Zealand Police College Recruits Study

This study is to investigate your previous exposure to traumatic events. My name is Lynne Huddleston and I am an independent researcher from the Psychology Department at Massey University. I am undertaking this research for my doctorate degree. I expect this work to have a practical application to the Police work environment in the future, to assist Police Officers to respond as positively as possible to the unavoidable stresses they will inevitably encounter. I would like to take this opportunity to invite you to participate in this study. All the Recruits in your intake will be asked to participate in this study. If you are willing to do so please complete the attached questionnaire and seal it in the envelope provided.

It is assumed that filling in the questionnaire implies consent. You do not have to fill in this questionnaire, or answer any questions that you do not feel comfortable about. If you answer this questionnaire you may be contacted, via a code number, and offered a follow-up questionnaire after you commence your police duties.

All information will be treated in the strictest confidence. The questionnaire data will be available only to the researcher and her supervisors from Massey University, and stored in a secured area. A summary of the results will be sent to all participants at the conclusion of the study. Any information that goes to the New Zealand Police will be statistical or summarised and individuals will be unable to be identified.

Please do not hesitate to contact me if you have any queries about the questionnaire or the research in general. My address is: Lynne Huddleston, The Department of Psychology, Massey University, Private Bag 11-222, Palmerston North. Alternatively you can fax me on (06)350 5673 or phone me on (06) 356 9099 extn. 7678. If you would like to email me my address is <Lynne.Huddleston.2@uni.massey.ac.nz> My supervisors are Dr Douglas Paton and Dr Christine Stephens of the Psychology Department at Massey University. They can be contacted on (06)350 6151 (Doug) or (06)350 4146 (Chris).

What is the present study about?

The present study will investigate the incidence and nature of traumatic incidents you may have experienced prior to joining the New Zealand Police. This information will provide

baseline data on levels of stress / trauma that recruits have experienced prior to joining the Police. This data can later be compared to results from sworn Officers throughout the ranks, indicating the impact of organisational and trauma effects. This information will be used to further develop the existing trauma policy within the Police and contribute to the development of training programs for Police Officers. To do this, you will be asked a number of questions about traumatic events you may have experienced. Confidentiality statements will be signed by all parties involved in the data collection.

Eligibility

You are eligible to take part in the study if you have been accepted into Police College.

What you will be asked to do

You will be asked to complete a questionnaire that will take about twenty minutes of your time.

The information obtained from this research will benefit Police Officers generally as a result of improved trauma policy and training provision. However, participants should be aware that these benefits are likely to occur at some point in the future so no immediate benefit may be apparent to participants. Should you have any concerns arising from your participation, please contact the researcher. If necessary she can arrange for confidential referral to an appropriate agency.

Your rights as a participant:

All participants:

- * have the right to contact the researcher and/or her supervisors at any time during the research to discuss any aspects of the study.
- * have the right to decline to answer any question.
- * provide information on the understanding that all responses will be held in complete confidence by the researcher and her supervisors, to be used only for the purposes of the research. It will not be possible to identify individuals in any reports of the results.
- * have the right to receive information about the results of the study on its completion.

APPENDIX C

Officer Questionnaire

**NEW ZEALAND POLICE
OFFICERS**

*Officer Questionnaire
Traumatic Events &
Occupational Stress*



Massey University



Please read the following instructions carefully

- All the information you give us is in confidence and will be used only for the purposes of the study
- It is important that you give your own answers to the questions. Please do not discuss your answers with others.
- Do not take a long time over each question; usually your first response is best.
- Please **give the number** for the answer that is best for you in the box provided, or give details in the space provided.

- 1) Compared to **the person in excellent health**, how would you rate your health at the present time?

Terrible	1
Very poor	2
Poor	3
Fair	4
Good	5
Very good	6
Excellent	7

- 2) This scale consists of a number of words that describe different feelings and emotions.
Please indicate to what extent you have been feeling this way in the last few days.

Read each item and then write the appropriate answer (a number from 1 to 5) in the space next to that word. Use the following scale to record your answers.

1	2	3	4	5	
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely	
interested	<input type="checkbox"/>	irritable	<input type="checkbox"/>	proud	<input type="checkbox"/>
distressed	<input type="checkbox"/>	alert	<input type="checkbox"/>	afraid	<input type="checkbox"/>
excited	<input type="checkbox"/>	ashamed	<input type="checkbox"/>	enthusiastic	<input type="checkbox"/>
upset	<input type="checkbox"/>	inspired	<input type="checkbox"/>	active	<input type="checkbox"/>
strong	<input type="checkbox"/>	nervous	<input type="checkbox"/>	hostile	<input type="checkbox"/>
guilty	<input type="checkbox"/>	determined	<input type="checkbox"/>	jittery	<input type="checkbox"/>
scared	<input type="checkbox"/>	attentive	<input type="checkbox"/>		

(28)

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3) Have you seen a psychologist for work related stress under the Trauma Policy?

1 YES

2 NO

The following questions ask about any possibly traumatic events you may have experienced.

A traumatic event is any event which is outside your normal range of experiences. Some people only ever have one or two traumatic experiences in a lifetime while some have many more.

Listed below are a few traumatic experiences which may have happened to you since joining the police.

After the question please **give the number** for the answer that is best for you in the box provided.

4) Since joining the police has anyone taken something from you by force or threat of force such as in robbery, mugging or hold-up?

0 NO (Please go to question 5)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Were you on duty when this happened?

0 NO

1 YES

Please describe the experience

5) Since joining the police have you been assaulted, injured or had your life placed under threat by another person?

0 NO (Please go to question 6)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Were you on duty when this happened?

0 NO

1 YES

(35)

Please describe the experience

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6) Since joining the police have you suffered injury or property damage because of fire?

0 NO (Please go to question 7)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Were you on duty when this happened?

0 NO

1 YES

Please describe the experience

7) Since joining the police have you suffered injury, evacuation, or property damage because of severe weather or either a natural or man-made disaster?

0 NO (Please go to question 8)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Were you on duty when this happened?

0 NO

1 YES

Please describe the experience

8) Since joining the police, apart from fellow police officers, has a close friend or family member died because of an accident, homicide, or suicide?

0 NO (Please go to question 9)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Were you on duty when this happened?

0 NO

1 YES

Please describe the experience

9) **Since joining the police have you been in a motor vehicle accident serious enough to cause injury to one or more passengers?**

0 NO (Please go to question 10)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Were you on duty when this happened?

0 NO

1 YES

Please describe the experience

10) **Since joining the police, did a police officer you knew well ever die because of an accident, homicide, or suicide?**

0 NO (Please go to question 11)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Were you on duty when this happened?

0 NO

1 YES

(50)

Please describe the experience

- 11) Since joining the police, have you been present at an incident in which a police officer was deliberately or accidentally killed?

0 NO (Please go to question 12)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Please describe the experience

- 12) Since joining the police, have you been present at an incident in which a member of the public was killed or seriously injured by the police?

0 NO (Please go to question 13)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Please describe the experience

- 13) Have you been involved in work with victims of multiple or otherwise particularly disturbing homicides, eg. children or elderly victims?

0 NO (Please go to question 14)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Please describe the experience

- 14) Since joining the police, have you worked at accidents in which there are multiple victims or severe mutilation of bodies?

0 NO (Please go to question 15)

1 YES (Please continue)

(60)

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Did this happen

1 Once 2 More than once

Please describe the experience

15) **Have you been involved in a Disaster Victim Identification Process?**

0 NO (Please go to question 16)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Please describe the experience

16) **Since joining the police, have you had some other shocking or distressing experience, something that has not been mentioned yet?**

0 NO (Please go to question 17)

1 YES (Please continue)

Did this happen

1 Once 2 More than once

Were you on duty when this happened?

0 NO

1 YES

Please describe the experience

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17) **Of all these experiences, please give the number for the one that was the worst for you. For example, injury because of fire would be number 6.**

(77)

Below is a list of comments made by people after stressful life events. Please think about your worst experience as in question 17, and then circle each item indicating how frequently these comments were true for you *DURING THE PAST SEVEN DAYS*.

If they did not occur during that time, please mark the "not at all" column.

Please use the following scoring system

0: Not at all 1: Rarely 3: Sometimes 5: Often

1.	I thought about it when I didn't mean to.	0	1	3	5
2.	I avoided letting myself get upset when I thought about it or was reminded of it.	0	1	3	5
3.	I tried to remove it from memory.	0	1	3	5
4.	I had trouble falling asleep or staying asleep, because pictures or thoughts about it that came into my mind.	0	1	3	5
5.	I had waves of strong feelings about it.	0	1	3	5
6.	I had dreams about it.	0	1	3	5
7.	I stayed away from reminders about it.	0	1	3	5
8.	I felt as if it hadn't happened or it wasn't real.	0	1	3	5
9.	I tried not to talk about it.	0	1	3	5
10.	Pictures about it popped into my mind.	0	1	3	5
11.	Other things kept making me think about it.	0	1	3	5
12.	I was aware that I still had a lot of feelings about it, but I didn't deal with them.	0	1	3	5
13.	I tried not to think about it.	0	1	3	5
14.	Any reminder brought back feelings about it.	0	1	3	5
15.	My feelings about it were kind of numb.	0	1	3	5

(92)

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The following inventory is a means of assessing positive outcomes by people who have experienced traumatic events. Please indicate for each of the statements below the degree to which this change occurred in your life as a result of your crisis, using the following scale.

1 = I did not experience this change as a result of my crisis.

2 = I experienced this change to a very small degree as a result of my crisis

3 = I experienced this change to a small degree as a result of my crisis.

4 = I experienced this change to a moderate degree as a result of my crisis.

5 = I experienced this change to a great degree as a result of my crisis.

6 = I experienced this change to a very great degree as a result of my crisis.

1. My priorities about what is important in life.	1	2	3	4	5	6
2. I'm more likely to try to change things which need changing.	1	2	3	4	5	6
3. An appreciation for the value of my own life.	1	2	3	4	5	6
4. A feeling of self reliance.	1	2	3	4	5	6
5. A better understanding of spiritual matters.	1	2	3	4	5	6
6. Knowing that I can count on people in times of trouble.	1	2	3	4	5	6
7. A sense of closeness with others.	1	2	3	4	5	6
8. Knowing I can handle difficulties.	1	2	3	4	5	6
9. A willingness to express my emotions.	1	2	3	4	5	6
10. Being able to accept the way things work out.	1	2	3	4	5	6
11. Appreciating each day.	1	2	3	4	5	6
12. Having compassion for others.	1	2	3	4	5	6
13. I'm able to do better things with my life.	1	2	3	4	5	6
14. New opportunities are available which wouldn't have been otherwise.	1	2	3	4	5	6
15. Putting effort into my relationships.	1	2	3	4	5	6
16. I have a stronger religious faith.	1	2	3	4	5	6
17. I discovered that I'm stronger than I thought.	1	2	3	4	5	6
18. I learned a great deal about how wonderful people are.	1	2	3	4	5	6
19. I developed new interests.	1	2	3	4	5	6
20. I accept needing others.	1	2	3	4	5	6
21. I established a new path for my life.	1	2	3	4	5	6

(113)

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The following questionnaire is a standard one dealing with general stress symptoms. Please describe how much of each of the symptoms you experienced **during the past seven days**. Please use the following scale to record your responses.

Not at all 1

A little bit 2

Quite a bit 3

Extremely 4

Difficulty in speaking in times of excitement	1	2	3	4
Trouble in remembering things	1	2	3	4
Concerns about sloppiness or carelessness	1	2	3	4
Blaming yourself for things	1	2	3	4
Pains in the lower part of your back	1	2	3	4
Feeling lonely	1	2	3	4
Feeling 'blue'	1	2	3	4
Your feelings being easily hurt	1	2	3	4
Feeling that others do not understand you, or are unsympathetic	1	2	3	4
Feeling that people are unfriendly, or dislike you	1	2	3	4
Having to do things slowly, to ensure that you're doing them properly	1	2	3	4
Feeling inferior to others	1	2	3	4
Muscle soreness	1	2	3	4
Having to check and double check what you do	1	2	3	4
Occasional hot or cold spells	1	2	3	4
Your mind occasionally going blank	1	2	3	4
Either a numbness or tingling in your body	1	2	3	4
A lump in your throat	1	2	3	4
Trouble in concentrating	1	2	3	4
Feeling of weakness in parts of your body	1	2	3	4
Occasional 'heavy' feelings in your arms and legs	1	2	3	4

(134)

IN CONFIDENCE

We would now like to know how daily events at work contribute to the way you feel. We appreciate that there are a large number of questions in the following pages, but this is necessary due to the many different things which can affect how we feel about work. Please read the instructions for each section carefully, and answer EACH question.

NEGATIVE WORK EVENTS

Listed below are a number of ways in which a person can feel **PRESSURED, HASSLED OR BOTHERED** as a result of their work. Read each statement carefully, and indicate if it describes something that has made you feel pressured, hassled or bothered as a result of your work *during the past month*. If a statement does not apply to you (the situation did not happen to you, or did not make you feel hassled, bothered or pressured), please circle '0'; if a statement applies strongly to you circle '5'; and if it applies to some extent circle '1', '2', '3' or '4' as appropriate. Please remember, only circle 1 to 5 as appropriate if the experience actually happened and made you feel pressured, hassled or bothered during the past month.

Definitely does not apply to me						Strongly applies to me
	0	1	2	3	4	5
A lack of encouragement from superiors.	0	1	2	3	4	5
Absence of emotional support from others outside work.	0	1	2	3	4	5
Absence of stability or dependability in home life.	0	1	2	3	4	5
An absence of any potential career advancement.	0	1	2	3	4	5
Being held accountable for things I didn't do.	0	1	2	3	4	5
Being held accountable for things I'm not responsible for.	0	1	2	3	4	5
Being told what to do by others.	0	1	2	3	4	5
Budget constraints.	0	1	2	3	4	5
Conflict with colleagues over work practices.	0	1	2	3	4	5
Demands that work makes on my private or social life.	0	1	2	3	4	5
Excessive paperwork.	0	1	2	3	4	5
Feelings of having to conform to 'pressure'.	0	1	2	3	4	5
Having far too much work to do.	0	1	2	3	4	5
Having to adopt a negative role toward others.	0	1	2	3	4	5
Having to work very long hours.	0	1	2	3	4	5
Home life with a partner who is also pursuing a career.	0	1	2	3	4	5
Inability to change the system.	0	1	2	3	4	5
Inadequate feedback about my own performance.	0	1	2	3	4	5

(152)

IN CONFIDENCE

Definitely does not apply to me						Strongly applies to me
	0	1	2	3	4	5
Inadequate guidance and back up from superiors.	0	1	2	3	4	5
Inappropriate rules and regulations.	0	1	2	3	4	5
Inconsistent application of rules and policy.	0	1	2	3	4	5
Insufficient finance or resources to work with.	0	1	2	3	4	5
Insufficient resources.	0	1	2	3	4	5
Insufficient time to complete a job.	0	1	2	3	4	5
Irregular meal times.	0	1	2	3	4	5
Job insecurity.	0	1	2	3	4	5
Lack of clarity in operational guidelines.	0	1	2	3	4	5
Lack of consultation and communication.	0	1	2	3	4	5
Lack of forward planning.	0	1	2	3	4	5
Lack of practical support from others outside work.	0	1	2	3	4	5
Lack of support from my supervisors.	0	1	2	3	4	5
Low morale.	0	1	2	3	4	5
Meeting deadlines.	0	1	2	3	4	5
Missing meals.	0	1	2	3	4	5
My spouse's attitude towards my job and career.	0	1	2	3	4	5
Not being able to 'switch off' at home.	0	1	2	3	4	5
Other staff not pulling their weight.	0	1	2	3	4	5
'Personality' clashes with others.	0	1	2	3	4	5
Poor administration.	0	1	2	3	4	5
Poor communication between staff and management.	0	1	2	3	4	5
Problems with coworkers.	0	1	2	3	4	5
Problems with the transfer system.	0	1	2	3	4	5
Quick change-overs.	0	1	2	3	4	5
Rushed eating.	0	1	2	3	4	5
Senior management/command not supporting the troops.	0	1	2	3	4	5
Shift work interfering with other activities.	0	1	2	3	4	5
Sitting around then suddenly active.	0	1	2	3	4	5
Station instability.	0	1	2	3	4	5
Lack of opportunity for staff participation in station/unit policy and decision-making.	0	1	2	3	4	5
Taking my work home.	0	1	2	3	4	5
Threat of impending redundancy.	0	1	2	3	4	5 (185)

IN CONFIDENCE

Definitely does **Strongly**
not apply to me **applies to me**

 0 1 2 3 4 5

Too much expected of me.	0	1	2	3	4	5
Too much red tape to get something done.	0	1	2	3	4	5
Too much supervision.	0	1	2	3	4	5
Uncertainty about my future career prospects.	0	1	2	3	4	5
Unclear promotion prospects.	0	1	2	3	4	5
Underpromotion - working at a level below my level of ability.	0	1	2	3	4	5
Unnecessary forms.	0	1	2	3	4	5
Unreliable equipment.	0	1	2	3	4	5
Working with people who are incompetent.	0	1	2	3	4	5
Working with people who are inconsiderate.	0	1	2	3	4	5
Working with people who are not suited to the job.	0	1	2	3	4	5
Working with people who do not listen.	0	1	2	3	4	5
Working with people who lack professionalism.	0	1	2	3	4	5
Demands my work makes on my relationship with my spouse, partner or children.	0	1	2	3	4	5

OTHER (Please list any negative aspects of your work that we have missed)

92. _____	0	1	2	3	4	5
93. _____	0	1	2	3	4	5

(201)

IN CONFIDENCE

POSITIVE WORK EVENTS

Listed below are a number of situations at work which may make you FEEL GOOD. They can be a source of enthusiasm, peace, satisfaction or joy. Read each statement carefully, and indicate if it describes something at work *during the past month* that has made you feel good. If a statement does not apply to you (the situation did not happen to you, or did not make you feel good), please circle '0'; if a statement applies strongly to you circle '5'; and if it applies to some extent circle '1', '2', '3' or '4' as appropriate. Please remember, only circle 1 to 5 as appropriate if the experience actually happened and made you feel good during the past month.

Definitely does not apply to me						Strongly applies to me
0	1	2	3	4	5	
Working with people who listen.	0	1	2	3	4	5
Working with people who know what they are doing.	0	1	2	3	4	5
Working with people who are considerate.	0	1	2	3	4	5
Working with people I like.	0	1	2	3	4	5
Working with competent people.	0	1	2	3	4	5
Working hard.	0	1	2	3	4	5
Work fitting in with other activities.	0	1	2	3	4	5
Work fitting in with family obligations.	0	1	2	3	4	5
Tidy work area.	0	1	2	3	4	5
Support for my work from my family.	0	1	2	3	4	5
Sufficient time with family.	0	1	2	3	4	5
Station/section/unit managers who listen.	0	1	2	3	4	5
Station/section/unit managers who I can turn to for help or advice.	0	1	2	3	4	5
Station/section/unit managers who are open.	0	1	2	3	4	5
Station/section/unit managers who are honest about my work.	0	1	2	3	4	5
Station/section/unit managers trusting me.	0	1	2	3	4	5
Station/section/unit managers delegating work.	0	1	2	3	4	5
Solving a problem.	0	1	2	3	4	5
Safe work environment.	0	1	2	3	4	5
Results of my plans taking effect.	0	1	2	3	4	5
Receiving recognition for good work.	0	1	2	3	4	5
Receiving feedback on how I am doing my job.	0	1	2	3	4	5
Providing quality service.	0	1	2	3	4	5
Personal reaction from other staff.	0	1	2	3	4	5

(225)

IN CONFIDENCE

Other staff doing the right thing.	0	1	2	3	4	5
Meeting deadlines.	0	1	2	3	4	5
Making popular decisions.	0	1	2	3	4	5
Making decisions.	0	1	2	3	4	5
Helping clients/customers.	0	1	2	3	4	5
Helpful station/section/unit management (eg., manager/supervisor).	0	1	2	3	4	5
Having variety in my work.	0	1	2	3	4	5
Having sufficient staff.	0	1	2	3	4	5
Having sufficient resources.	0	1	2	3	4	5
Having responsibility.	0	1	2	3	4	5
Having a say in decisions.	0	1	2	3	4	5
Good work hours.	0	1	2	3	4	5
Good facilities.	0	1	2	3	4	5
Getting things done.	0	1	2	3	4	5
Getting along with other staff.	0	1	2	3	4	5
Flexible work hours.	0	1	2	3	4	5
Equipment working.	0	1	2	3	4	5
Equipment being available.	0	1	2	3	4	5
Doing worthwhile work.	0	1	2	3	4	5
Doing interesting work.	0	1	2	3	4	5
Doing challenging work.	0	1	2	3	4	5
Days off.	0	1	2	3	4	5
Comfortable work environment.	0	1	2	3	4	5
Clarity of operational guidelines.	0	1	2	3	4	5
Being involved in decision-making.	0	1	2	3	4	5
Being able to make a difference.	0	1	2	3	4	5
Being able to act on my own.	0	1	2	3	4	5
Balance between work and home life.	0	1	2	3	4	5
Application of rules and policy.	0	1	2	3	4	5
Achieving a heavy workload.	0	1	2	3	4	5

OTHER (Please list any positive aspects of your work that we have missed)

69. _____	0	1	2	3	4	5
70. _____	0	1	2	3	4	5

THANK YOU FOR YOUR TIME

(257)

IN CONFIDENCE

APPENDIX D

Officer Questionnaire Information Sheet

Tear Here

Information Sheet

New Zealand Police Officers Study

(Please tear out this page if you would like to keep it)

This study is to investigate the effects of traumatic incidents, Police duties, and the Police organisational environment. My name is Lynne Huddleston and I am an independent researcher from the School of Psychology at Massey University. I am undertaking this research for my doctorate degree. I expect this work to have a practical application to the police work environment in the future, to assist police officers to respond as positively as possible to the unavoidable stresses they will inevitably encounter. As you filled in my first questionnaire I would like to invite you to continue your involvement in this research programme by completing this follow up questionnaire.

If you are willing to participate in this study, please complete the attached questionnaire and return it in the envelope provided. It is assumed that filling in the questionnaire implies consent. You do not have to fill in this questionnaire, or answer any questions that you do not feel comfortable about.

Please do not hesitate to contact me if you have any queries about the questionnaire or the research in general. My address is: Lynne Huddleston, School of Psychology, Massey University, Private Bag 11-222, Palmerston North. Alternatively you can fax me on (06)350 5673 or phone me on (06) 356 9099 extn. 7678. My supervisors are Dr Christine Stephens and Assoc Prof Douglas Paton of the School of Psychology. They can be contacted on (06)350 4146 (Chris) or (06)350 6151 (Doug).

What is the present study about?

The present study will investigate the incidence and nature of traumatic incidents within police work and the way in which your experience of these events was affected by the organisational environment in which you work. This information will be used to further develop the existing trauma policy within the police and contribute to the development of training programs for police officers. To do this, I will ask you a number of questions about traumatic events you may have experienced and how they have affected your

IN CONFIDENCE

experience of police work. Confidentiality statements will be signed by all parties involved in the data collection.

Eligibility

You are eligible to take part in the study if you are a sworn member of the New Zealand police.

What you will be asked to do

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Should you have any concerns arising from your participation, please contact the researcher. If necessary she can arrange for confidential referral to an appropriate agency.

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- * have the right to contact the researcher or her supervisors at any time during the research to discuss any aspects of the study.
- * have the right to decline to answer any question.
- * provide information on the understanding that all responses will be held in complete confidence by the researcher and her supervisors, to be used only for the purposes of the research. It will not be possible to identify individuals in any reports of the results.
- * have the right to receive information about the results of the study on its completion.

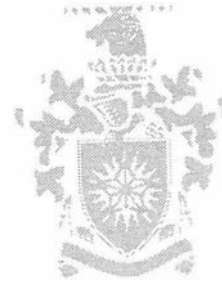
IN CONFIDENCE

APPENDIX E

Recruit Questionnaire Reminder Letter



Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES



School of Psychology
Private Bag 11 222,
Palmerston North,
New Zealand
Telephone: 64 6 356 9099
Facsimile: 64 6 350 5673

Traumatic Incident Exposure Questionnaire

21st Sept. 1998.

Wing 180 Recruits

Hi

You may remember me, I talked to you about ten days ago and left you my questionnaire to fill in,

If you have returned this to me many thanks indeed, I really appreciate your input.

Unfortunately I've had a poor response rate and it's vital to my research to get as many questionnaires back as possible.

If you could find the time to fill in this questionnaire I would be very grateful. Please use the freepost envelope to return it to me, or to contact me if you have any queries.

Thanks again for your time,

Lynne

Te Kunenga ki Pūrehuroa

Inception to Infinity: Massey University's commitment to learning as a life-long journey

APPENDIX F

Officer Questionnaire Introductory Letter 1



Hi

You may remember me from when you filled in my first questionnaire at Police College, about a year ago. Thank you very much for doing that.

I am hoping that you will be able to fill in this second questionnaire for me, as I can't really use your first questionnaire without this one. I'm wanting to do a before-and-after comparison with your data, so don't worry if some of this questionnaire looks familiar to you.

As before you are assured of confidentiality. This is a Massey University study, not a police study, and no police officers will get to see your questionnaires. At the end of the study the police will get only summarized or statistical information, and no officers will ever be identified.

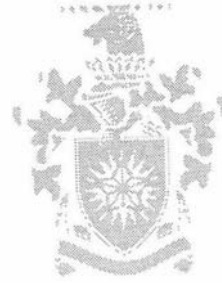
Your QID number is on this questionnaire so I can match your data with your earlier material, and send you information on the results of this study.

Thanks again for your time, I really appreciate it. I know this questionnaire seems long but I really value your input, it is vital to my research. My contact details are just inside the questionnaire and I'm looking forward to hearing from you,

Lynne

APPENDIX G

Officer Questionnaire Reminder Letter



Lynne Huddleston

Ph. (06) 3569099 extn.7678

Email:Lynne.Huddleston.2@massey.ac.nz

Traumatic Events and Occupational Stress Questionnaire

Hi

A few weeks ago I sent you out this questionnaire. I'm resending it to you as my response rate has been so poor and it's vital to my research to get as many questionnaires back as possible.

I'm hoping that you will be able to fill in this second questionnaire for me, as I can't really use your first questionnaire without this one. I want to do a before-and-after comparison with your data.

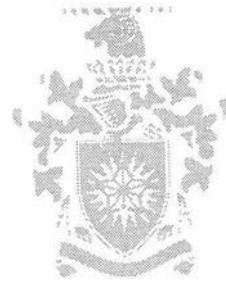
If you could find the time to fill in this questionnaire I would be very grateful. Please use the freepost envelope to return it to me, or to contact me if you have any queries.

Thanks again for your time,

Lynne

APPENDIX H

Officer Questionnaire Fax



FACSIMILE MESSAGE

To: **From:** Lynne Huddleston

At: **At:** School of Psychology
Massey University
Private Bag 11222
Palmerston North
NEW ZEALAND

Fax No: **Fax No:** Overseas +64 6 350 5673
NZ 06 350 5673

No of pages **Date:**
including this page 1

(If you do not receive all pages of this fax, or if it is unclear, please contact me.)

Dear Constable

Could I just ask one last time if you would please send back my questionnaire ...

"Officer Questionnaire: Traumatic Events and Occupational Stress."

If you need another copy please give me a call on

(06) 350 5799

Ext.: 2040

[Please leave a message.]

I would really appreciate it if you could do this for me.

Many thanks

Lynne

CONFIDENTIALITY NOTICE

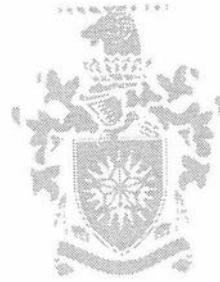
This fax is confidential and may also be privileged. If you are not the intended recipient, please notify the sender immediately. You should not copy the fax or use it for any purpose or disclose its contents to any other person.

APPENDIX I

Officer Questionnaire Introductory Letter 2



Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES



School of Psychology
Private Bag 11 222,
Palmerston North,
New Zealand
Telephone: 64 6 356 9099
Facsimile: 64 6 350 5673

Lynne Huddleston

Ph. (06) 3569099 extn.7678

Email:Lynne.Huddleston.2@massey.ac.nz

Traumatic Events and Occupational Stress Questionnaire

Hi

You may remember me, about a year ago you filled in my first questionnaire at Police College. Thank you very much for doing so. Now that you are a working constable I would be very interested to hear from you.

Unfortunately I've had a very poor response rate to this questionnaire and it's really vital to my research to get as many questionnaires back as possible.

It would be very helpful to me if you could fill in this questionnaire, I would really appreciate your input. Please use the freepost envelope to return it to me, or to contact me if you have any queries.

Thanks very much for your time,

Lynne

Te Kunenga ki Pūrehuroa

Inception to Infinity: Massey University's commitment to learning as a life-long journey

APPENDIX J

Summary of the Study Outcomes for the Recruits



Researcher: Lynne Huddleston

Supervisors: Dr Christine Stephens and Dr Douglas Paton

New Zealand Police Traumatic Events and Occupational Stress Report to the Participants (Officers in Wings 173-180)

Over one year all the recruits entering Police College were surveyed. Of these 693 recruits 512 completed the Recruit questionnaire. One year later, intake by intake, the officers who completed the first questionnaire were resurveyed, 314 officers returned the Officer questionnaire. The results indicated that during their first year with the police (five months of which was training) the officers had experienced nearly as many traumatic experiences as they had during all their life prior to joining the police. While this is of concern, at this stage these experiences did not translate into increased psychological stress for the group as a whole. The measure for posttraumatic stress disorder (PTSD) remained at a relatively low level. Good news also was that in terms of psychological distress levels a significantly lower result was obtained. On average the recruits were less distressed one-year into the job.

One year later the officers rated their health as *good*, as opposed to *very good* when they had started. In terms of mood they felt less positive. They still felt *determined* and *interested*, but less so than before. Overall, they also felt less negative. Feeling *irritable* now replaced feeling *nervous* above all. Organizational hassles (daily negative events) were of concern to the officers, particularly excessive paperwork, irregular mealtimes and lack of resources. Multiple regression analysis indicated that hassles had a bigger impact on psychological distress and traumatic stress levels than did traumatic events exposure. In many respects this is good news for the Police Organisation as this is an area where improvements may be possible, traumatic events exposure being difficult to avoid.

Uplifts (daily positive events) contributed to significantly higher physical health levels. Recruits appreciated aspects of the job itself (doing challenging work, having variety in the work) and customer satisfaction most highly. Posttraumatic growth was indicated in this study, and would be of interest to follow-up, as time is likely to be a factor in its development.

The Demographic Profile of the Participants

The mean age at commencement of training was 27 years (the range was 19-45 years). The gender split was 72% males and 28% females. Half of the officers had never married, 44% were married or in defacto relationships, and 6% were separated. Turning to ethnic composition: 8% identified themselves as Maori, 84% New Zealand European, and 3% Pacific Islander. The *Other* category was selected by 5% of participants. Considering educational qualifications: 20% had school certificate, 25% UE, a further 30% held a diploma or trade certificate, and 25% a university qualification.

Prior Experiences of Traumatic Events

Results from the Traumatic Stress Schedule found the recruits had experienced an average 1.82 traumatic events. Of the recruits 85% had experienced one traumatic event, 54% had experienced two, and 27% had experienced three or more. Three types of traumatic experiences stood out:

- *Death of a friend or family member*, 45% of recruits had experienced this event
- *Assaults*, 41% of recruits had already been assaulted
- *Motor Vehicle crashes*, 22% had experienced this traumatic event

Of the various traumatic events only one experience was significantly associated with higher PTSD measures. This was the experience of having been *sexually assaulted* ($r = .17, p < .05$). This was examined for both males and females, and the results indicated higher PTSD scores for sexually assaulted women but not for men.

The question 'What is the worst thing that has ever happened to you?' generated 214 responses. The most common responses ($N = 46$) were *natural death* (in many instances

this was the death of a grandparent). The same number of recruits nominated *death* (most commonly suicide or accident). A further 33 recruits nominated *relationship difficulties* as their worst experiences, this included divorce or relationship breakups.

Results One Year Later

The officers had experienced an average of 1.37 traumatic events (range 0-6). Of the officers 74% had experienced one traumatic event, 42% had experienced two, and 5% three or more. Forty-three percent of the officers had been assaulted (45% of the males and 38% of the females). Most but not all, of the assaults were minor. This time three of the traumatic event categories were associated with increased PTSD distress. There were: *Robbery*, *Assault*, and *Multiple Victims*. The recruits found it upsetting to be assaulted, or to work with the victims of multiple or particularly disturbing homicides (not surprisingly).

Whether the traumatic events were experienced on or off duty significantly affected their impact in terms of the PTSD measure. The most significant precursor to higher PTSD scores (increased psychological distress) was experiencing traumatic events on-duty. Not unexpectedly most of the traumatic events (81%) were occurring while the officers were on duty.

It is anticipated that this study will be available as a doctoral thesis by 2002. Please feel free to contact the researcher if you would like any further information about this study. The cooperation and assistance of the recruits involved in this study is gratefully acknowledged. Many thanks for filling in my questionnaires.

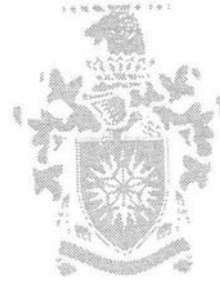
Lynne Huddleston

(06) 3505799 x7678

Email Lynne.Huddleston.2@uni.massey.ac.nz

APPENDIX K

Report of the Study Outcomes for the Police Organization



Report to the New Zealand Police Organization

Massey University School of Psychology

Doctoral Research Study 1997-2001

Researcher: Lynne Huddleston

Supervisors: Dr Christine Stephens and Dr Douglas Paton

Police Liaisons: Dr Ian Miller and Dr Jonathan Black

New Zealand Police Traumatic Events and Occupational Events: A Longitudinal Study

Summary

Over one year all the recruits entering Police College were surveyed. One year later, intake by intake, the officers who completed the first questionnaire were resurveyed. The results indicated that during their first year with the police (five months of which was training) the officers had experienced nearly as many traumatic experiences as they had during all their life prior to joining the police. While this will be of concern to the Police Organisation, at this stage these experiences did not translate into increased psychological distress for the group as a whole. The IES, the measure for Posttraumatic Stress Disorder (PTSD) remained at a relatively low level. Good news also for the organisation was that in terms of psychological distress levels (measured with the HSCL-21) a significantly lower result was obtained. On average the officers were less distressed one year into the job.

One year later the officers rated their health as *good*, as opposed to *very good* when they had started. In terms of mood (the PANAS) they felt less positive. They still felt *determined* and *interested*, but less so than before. Overall, they also felt less negative. Feeling *irritable* now replaced feeling *nervous* above all. Organizational hassles were of concern to the officers, particularly excessive paperwork, irregular mealtimes and lack of resources. Multiple regression analysis determined that hassles had a bigger impact on psychological distress and traumatic stress levels than did traumatic events exposure. In many respects this is good news for the Police Organization as this is an area where improvements may be possible, traumatic events exposure being an unavoidable aspect of the job.

Uplifts contributed to significantly higher physical health levels. Officers appreciated aspects of the job itself (doing challenging work, having variety in the work) and customer satisfaction most highly. Posttraumatic growth was indicated in this study, and would be of interest to follow-up, as time is likely to be a factor in its development. These results and details of the study are explained more fully below.

Returns-The Recruit Questionnaire

Over the one-year period from September 1997 to September 1998 all the recruits who entered Police College (Wings 173 - 180) were surveyed as they commenced their training. The Recruit questionnaire established the demographic profile of the respondents and also assessed their previous exposure to traumatic events. The questionnaire included measures for mood, psychological distress, and the two most common PTSD symptoms (experiencing intrusive thoughts and avoidance behaviors). The recruits were asked the question 'what is the worst thing that has ever happened to you?' Of the 693 recruits who entered Police College that year 512 completed this first questionnaire.

Returns-The Officer Questionnaire

One year later the officers were followed up intake-by-intake and mailed out the Officer questionnaire. This questionnaire repeated the measures of the first, and also asked for the participants to complete a positive events scale (Police Daily Uplifts), and a negative

events scale (Police Daily Hassles). These scales reflect a new line of research, looking at the effect that the organization itself has on its' officers' well-being. The impact of occupational traumatic events was assessed by examining traumatic events encountered over the year, both on and off duty. This questionnaire as well as examining the negative effects of encountering traumatic events and also looked for any positive spin offs; in terms of posttraumatic growth. Posttraumatic growth encompasses such feelings as: relating better to others, personal strength, appreciation of life, and new possibilities. Of the 512 recruits who filled in the first questionnaire 314 returned the second. This gives a return rate of over 60% that was very impressive given the demands of the new profession and the length of the questionnaire.

The Demographic Profile of the Participants

Concentrating upon the officers who completed both questionnaires ($N = 314$) it was found that the mean age at commencement of training was 27 years (the range 19-45 years). The gender split was 72% males and 28% females. Half of the officers had never married, 44% were married or in defacto relationships, and 6% were separated. Turning to ethnic composition: 8% identified themselves as Maori, 84% New Zealand European, and 3% Pacific Islander. The *Other* category was selected by 5% of participants. Considering educational qualifications: 20% had school certificate, 25% UE, a further 30% held a diploma or trade certificate, and 25% a university qualification.

Prior experiences of traumatic events

Results from the Traumatic Stress Schedule found the recruits had experienced an average 1.82 traumatic events. Of the recruits 85% had experienced one traumatic event, 54% had experienced two, and 27% had experienced three or more. These were traumatic events experienced prior to joining the police and included: military combat, death of a friend or family member; robbery or mugging, fire, natural disaster, assault, and sexual assault. The highest number of traumatic events experienced by any recruit was nine. Three types of traumatic experiences stood out:

- *Death of a friend or family member*, 45% of recruits had experienced this event
- *Assaults*, 41% of recruits had already been assaulted

- *Motor Vehicle crashes*, 22% had experienced this traumatic event

Of the various traumatic events only one experience was significantly associated with higher PTSD measures. This was the experience of having been *sexually assaulted* ($r = .17, p < .05$). This was examined for both males and females, and the results indicated higher PTSD scores for sexually assaulted women, but not so for men.

The question 'What is the worst thing that has ever happened to you?' generated 214 responses. The most common responses ($N = 46$) were *natural death*, this referred to death by natural causes, most often this was the death of a grandparent. The same number of recruits nominated *death* ($N = 46$) most commonly suicide or accident, less frequently homicide. A further 33 recruits nominated *relationship difficulties* as their worst experiences, this included divorce or relationship breakups.

Results one year later

Table 1 contains the descriptive statistics of the main study measures. Results from all the recruits who completed the Recruit questionnaire are reported. The results from the officers who completed both questionnaires are reported at Time 1 and Time 2.

Table 1

Summary of the Main Outcome Measures for all the Recruits who completed the Recruit Questionnaire (N = 512), Time 1 (N = 314), and Time 2 (N = 314)

Variable	Group	Valid N	M	SD	Range
TSS T1	One (T1)	509	1.79	1.39	0 - 7
	Two (T1)	312	1.82	0.75	0 - 7
TSS T2	Two (T2)	312	1.37	1.15	0 - 6
Health	One (T1)	510	6.13	0.77	3.00 - 7
	Two (T1)	313	6.14	0.75	4.00 - 7
	Two (T2)	309	5.62	0.96	1.00 - 7
IES	One (T1)	425	10.82	14.77	0 - 69
	Two (T1)	263	10.90	15.07	0 - 59
	Two (T2)	267	10.07	12.56	0 - 50
HSCL-21	One (T1)	484	33.72	7.53	15 - 62
	Two (T1)	295	33.96	7.68	15 - 62
	Two (T2)	301	31.50	7.83	21 - 78
PANAS PA	One (T1)	499	40.04	4.72	10 - 33
	Two (T1)	309	39.98	4.63	21 - 50
	Two (T2)	303	34.63	6.87	10 - 50
PANAS NA	One (T1)	499	17.03	4.86	10 - 33
	Two (T1)	309	17.26	5.10	10 - 32
	Two (T2)	306	14.65	4.40	10 - 36
Hassles	Two (T2)	283	83.91	43.47	0 - 233
Uplifts	Two (T2)	280	162.61	38.40	28 - 255
PTGI	Two (T2)	233	44.91	20.07	21 - 112

So what had happened to the officers over their first year with the Police, five months of which was training? Over this period the officers had experienced an average of 1.37 traumatic events (range 0 - 6). In this one-year the officers had experienced nearly as many traumatic experiences as they had during all their life prior to joining the police. For many it had been an eventful year. Of these officers 74% had experienced one

traumatic event, 42% had experienced two, and 5% three or more. Forty-three percent of the officers had been assaulted (45% of the males and 38% of the females). Most but not all, of the assaults were minor.

This time three of the traumatic event categories were associated with increased PTSD distress. There were: *Robbery*, *Assault*, and *Multiple Victims*. So too was the *Other* category. The officers found it upsetting to be assaulted, or to work with the victims of multiple or particularly disturbing homicides (not surprisingly). Many of the events nominated in the *Other* category were also disturbing.

Whether the traumatic events were experienced on or off duty significantly affected their impact in terms of the PTSD measure. The most significant precursor to higher PTSD scores (increased psychological distress) was experiencing traumatic events *on duty*. As mentioned previously the average number of traumatic events experienced over the one-year period was 1.23. Not unexpectedly most of the traumatic events (81%) were occurring while the officers were on duty. The officers who experienced traumas on duty scored significantly higher on the IES (the PTSD measure) $t(263) = 3.70, p < .05$. Their mean IES score was 11.58 versus 4.79 for those whose traumas were experienced off-duty. Higher IES scores indicated increased psychological distress.

The Police Organization should be aware that these on-duty traumatic events are resulting in elevated psychological distress for a significant number of officers. However the good news for the organisation regarding the PTSD measure is that scores on average had not significantly changed over the one year. For the group as a whole all the experiences of the year (bad, good, whatever) had not translated into higher psychological distress scores overall. This is not to say that no officers were affected by the job, as mentioned above those who experienced traumas on-duty were noticeably affected, but generally psychological distress remained at relatively low levels.

Results of the other main measures

The study had traumatic events as a focus but also assessed physical health, psychological distress, mood, and the impact of organizational hassles and uplifts. The results of these measures are summarized.

Health

At entry recruits gave a high self-assigned health ranking with a mean of 6.14 (the scale ranged from 1 *Terrible* to 7 *Excellent*). One year later the mean rating decreased to 5.62. On average health now rated as *Good*, previously it had rated as *Very good*. It needs to be borne in mind that the first health rating may have reflected 'selection euphoria'. Recruits may have been reluctant to indicate feeling poorly having just passed the physical requirements to gain entry to police college.

Psychological distress

A pleasing result for the police organization was a significant lowering of psychological distress scores over the year $t(283) = 5.46, p < .00$. The mean at commencement was 33.96 versus a mean one-year later of 31.50. Males fared slightly better than females. Despite the demands of coping with the first year on the job, the officers were significantly less distressed than when they commenced their training.

Mood

The officers ended the year feeling less positive than when they started it, however, the good news is that they also felt less negative. Both the mean scores on the positive and negative affect scales had dropped. This seems counterintuitive, however, it needs to be borne in mind that these scales do not measure a continuum (as both positive and negative feelings do co-exist at the same time). One year into the profession the officers report feeling *irritable* as the most common negative item (they commenced the year feeling *nervous* above all). On the positive side the recruits commenced feeling *interested* and *determined*, and one year later still rated these same two items the highest, but not as high as before.

Organizational Stressors and Uplifts

Of the sixty one negative events listed these were the most annoying to the officers; *Excessive paperwork, irregular meal times, insufficient resources, and unnecessary forms*. The individual hassles items were grouped into 13 factors and the three highest ranking (i.e., worst) were

- *Resources*. Examples, insufficient resources, unreliable equipment, budget constraints, and insufficient finance.
- *Activity*. Examples, unreliable mealtimes, sitting around then suddenly active, and shift work interfering with other activities.

- *Workload*. Examples, insufficient time to complete a job, or having far too much work to do.

These hassles may seem to be merely annoying stressors but when both traumatic events and hassles were entered into regression equations (which enable statistical predictions to be made accounting for the effect of other variables) hassles were found to predict psychological distress and traumatic stress levels, more so than traumatic events exposure. This is an area where real gains to officers' psychological health status could be made. Uplifts (positive daily events) were found to predict physical health, which is good news. The individual uplifts that the officers found the most positive were: doing challenging work; having variety in the work; doing interesting work, and getting along with other staff.

Posttraumatic Growth

Traumatic events significantly ($p < .05$) correlated with total posttraumatic growth (measured by the Post Traumatic Growth Inventory) $r = .16$, $N = 232$. The factors: *relating to others* ($r = .14$, $N = 238$), *personal strength* ($r = .19$, $N = 240$), and *appreciation of life* ($r = .17$, $N = 245$) also generated significant correlations. Officers who experienced the following traumatic events had significantly higher posttraumatic growth scores: *death* (of a close friend or family member by accident, homicide, or suicide); *fire* (injury, or property damage); or *disaster victim identification* (DVI). As mentioned in the summary posttraumatic growth is likely to arise over time, and this is an area of research that would be well worth following-up in future.

It is anticipated that this study will be available as a doctoral thesis by 2002. Please feel free to contact the researcher if you would like any further information about this study. The cooperation and assistance of the New Zealand Police Organization and the officers involved in this study is gratefully acknowledged.

Lynne Huddleston

(06) 3505799 x7678

Email Lynne.Huddleston.2@uni.massey.ac.nz

APPENDIX L

Factors and Items in the Police Daily Hassles and Uplifts Scales

Police Daily Hassles Scale Factors and Items

Factor 1 Communication 6 items:

- Lack of consultation and communication
- Inadequate feedback about my own performance
- Poor communication between staff and management
- Lack of opportunity for staff participation in station/unit policy and decision-making
- A lack of encouragement from superiors
- Inadequate guidance and back up from superiors

Factor 2 Workload 4 items:

- Insufficient time to complete a job
- Having far too much work to do
- Meeting deadlines
- Too much expected of me

Factor 3 Coworkers 6 items:

- Working with people who are incompetent
- Working with people who do not listen
- Working with people not suited to the job
- Working with people who are inconsiderate
- Other staff not pulling their weight
- Working with people who lack professionalism

Factor 4 Outside Support 3 items:

- Lack of practical support from others outside work
- Absence of stability or dependability in home life
- Absence of emotional support from others outside work

Factor 5 Administration 9 items:

- Lack of clarity in operational guidelines
- Unnecessary forms
- Poor administration
- Excessive paperwork
- Inappropriate rules and regulations
- Inability to change the system
- Inconsistent rules and policy
- Too much red tape to get something done
- Lack of forward planning

Factor 6 Job Insecurity 2 items:

- Job insecurity
- Threat of impending redundancy

Factor 7 Resources 4 items:

- Insufficient resources
- Unreliable equipment
- Budget constraints
- Insufficient finances or resources to work with

Factor 8 Dual Careers 2 items:

- My spouse's attitude towards my job and career
- Home life with a partner who is also pursuing a career

Factor 9 Work and Home Life 5 items:

- Having to work very long hours
- Demands my work makes on my relationship with my spouse, partner or children
- Demands that work makes on my private or social life
- Not being able to 'switch off' at home
- Taking my work home

Factor 10 Career Opportunities 4 items:

- An absence of any potential career advancement
- Unclear promotion prospects
- Uncertainty about my future career prospects
- Underpromotion - working at a level below my level of ability

Factor 11 Personality Clashes 4 items:

- Problems with coworkers
- Having to adopt a negative role toward others
- Conflict with colleagues
- 'Personality' clashes with others

Factor 12 Activity 6 items:

- Irregular meal times
- Sitting around then suddenly active
- Missing meals
- Quick changeovers
- Rushed eating
- Shift work interfering with other activities

Factor 13 Supervision 6 items:

- Being told what to do by others
- Too much supervision
- Lack of support from my supervisors
- Being held accountable for things I'm not responsible for
- Being held accountable for things I didn't do
- Senior management/command not supporting the troops

Police Daily Uplifts Scale Factors and Items

Factor 1 The Job Itself 5 items:

- Doing interesting work
- Doing challenging work
- Doing worthwhile work
- Having variety in my work
- Having responsibility

Factor 2 Customer Satisfaction 2 items:

- Providing quality service
- Helping clients/customers

Factor 3 Workload 4 items:

- Meeting deadlines
- Working hard
- Achieving a heavy workload
- Getting things done

Factor 4 Work Schedule 2 items:

- Good work hours
- Work fitting in with other activities

Factor 5 Administration 3 items:

- Results of my plans taking effect
- Application of rules and policy
- Clarity of operational guidelines

Factor 6 Workplace Management 9 items:

- Helpful station/unit/section management (e.g., manager/supervisor)
- Receiving recognition for good work
- Receiving feedback on how I am doing my job
- Station/unit/section managers who are honest about my work
- Station/unit/section managers who I can turn to for help or advice

- Station/unit/section managers delegating work
- Station/unit/section managers trusting me
- Station/unit/section managers who are open
- Station/unit/section managers who listen

Factor 7 Amenities 4 items:

- Tidy work area
- Good facilities
- Comfortable work environment
- Safe work environment

Factor 8 Equipment/Resources 4 items:

- Equipment being available
- Equipment working
- Having sufficient staff
- Having sufficient resources

Factor 9 Coworkers 8 items:

- Working with people who are considerate
- Getting along with other staff
- Working with people who listen
- Personal reaction from other staff
- Working with people who know what they are doing
- Working with people I like
- Working with competent people
- Other staff doing the right thing

Factor 10 Decision Making 6 items:

- Making decisions
- Solving a problem
- Having responsibility
- Being involved in decision-making
- Making popular decisions
- Having a say in decisions

Factor 11 Family 4 items:

- Sufficient time with family
- Support for my work from my family
- Balance between work and home life
- Work fitting in with family obligations

APPENDIX M

Australian Norms for the Police Daily Hassles and Uplifts Scales

Table 1

Responses (scaled to 100) from members of the Australian Police (N = 1,936) and the Australian education sector (N = 4,164) to the organizational subscales of the Hassles Scale

Hassles Organizational Subscales	Police Organisation	Education Sector
Communication	48.86	40.00
Workload	45.67	56.00
Coworkers	42.80	32.00
Personality Clashes	27.28	25.00
Administration	54.05	39.00
Job Insecurity	18.64	22.00
Resources	59.20	44.00
Outside Support	26.15	23.00
Dual Careers	21.12	22.00
Work and Home Life	37.43	48.00
Career Opportunities	56.31	41.00

Acad 3
20/10/2020

Table 2

Responses (scaled to 100) from members of the Australian Police (N = 1,936) and the Australian education sector (N = 4,164) to the organizational subscales of the Uplifts Scale

Uplifts Organizational Subscales	Police Organisation	Educational Sector
The Job Itself	74.41	79.00
Customer Satisfaction	77.01	79.00
Workload	74.32	81.00
Work Schedule	68.27	69.00
Administration	47.11	52.00
Workplace Management	60.06	62.00
Amenities	66.73	68.00
Equipment/Resources	59.97	63.00
Coworkers	75.48	80.00
Decision-Making	70.42	69.00
Family	68.65	67.00

APPENDIX N

***Time1 Results on the Study Measures for all the Respondents Who
Completed the Recruit Questionnaire (N = 509)***

Traumatic Stress Schedule

The Traumatic Stress Schedule variables were combined into a total trauma variable. This had a possible range from 0 to 9. The prior numbers of traumas experienced by the recruits ranged from 0 to 7, with a mean number of prior traumas of 1.79 ($N = 509$). A frequency distribution determined that 82.32% ($N = 509$) of recruits had experienced at least one traumatic event. Of these, 52.06% had experienced two traumatic events ($N = 265$), and 25.74% had experienced three or more ($N = 131$).

The frequencies of four particular traumatic events stood out.

- Firstly, experiences of death (*has a close friend or family member ever died because of an accident, homicide, or suicide?*), 43.81% ($N = 223$) of recruits had experienced this trauma, 41.44% of the male recruits, and 50.37% of the females.
- Secondly, assaults were common (*have you ever been assaulted, injured or had your life placed under threat by another person?*), 38.11% ($N = 194$) of the recruits had been assaulted, 42.78% of male recruits, and 25.19% of female recruits had been assaulted prior to joining the police.
- Thirdly, experiences of motor vehicle crashes (*were you ever in a motor vehicle accident serious enough to cause injury to one or more passengers?*), 21.81% ($N = 111$) had experienced this traumatic event, 22.19% of the males had experienced this incident, so too had 20.74% of the females.
- Lastly, the *other* category was selected, 32% ($N = 166$) indicated that they had some other traumatic experience. This was chosen by 33.96% of the males, and by 28.89% of the females.

The recruits ($N = 510$) entered Police College with a high mean self-assigned health rating of 6.13. Possible responses to the health question range from 1 *terrible* to 7 *excellent*. This group of recruits indicated that on average, compared to the person in excellent health, they felt their health to be *very good*. This was not surprising given the pre-requisite requirements of health and fitness that they had recently satisfied to gain entry into police college. No recruits described their health as either *terrible* or *very*

poor, and only one recruit selected *poor*. The bulk of the responses ($N = 241$) were for *very good*, and *excellent* was chosen by a further 174 recruits.

Impact of Event Scale

The recruits ($N = 425$) entered Police College with a mean score of 10.82 (SD 10.82) on the IES. This measure of psychological trauma is comprised of two subscales: one measures avoidance behaviours, the other intrusive thoughts. The recruits mean scores on both these subscales were 5.43 ($N = 427$), SD 7.5 Intrusion, SD 8.3 Avoidance).

The HSCL-21

The recruits ($N = 484$) commenced Police College with a mean HSCL-21 score of 33.72 (SD 7.53), the minimum score being 15, the maximum being 62 (out of a possible 84). The scale is comprised of three subscales: General feelings of distress (GFD); Somatic distress (SD), and Performance difficulty (PD). The mean scores for the subscales being 10.72, 9.83, and 13.23 respectively.

Positive Affect

At their commencement of training the recruits ($N = 499$) had a mean score of 40.04 for Positive Affect (PA) ($N = 499$, SD 4.72). The maximum score was 50.00 and the minimum score was 21.00. This measure has a possible maximum score of 20, and a minimum of zero. The scores indicated that the recruits were in a positive buoyant mood as they commenced their training. The highest scoring items for the recruits ($N = 507$) were *interested* (mean = 4.50), *determined* (mean = 4.40), *enthusiastic* (mean = 4.21), and *active* (mean = 4.10).

Negative Affect

Regarding the scale for Negative Affect (NA) the recruits ($N = 499$) had a mean score of 17.03 ($N = 499$, SD 4.86). Their scores ranged from a maximum of 33.00 to a minimum of 10.00. This schedule has the same possible range of scores as the PA.

Table 1

Responses to the question what is the worst thing that has ever happened to you?

Group One Recruits (N = 512) and Group Two Recruits (Time 1 Sample N = 314)

Response	Group One Numbers	Group One Percentage of Valid	Group Two Numbers	Group Two Percentage of Valid
Natural Death	66	18.28	46	19.32
Death	64	17.72	46	19.32
Relationship Diff.	56	15.51	33	13.86
Accident	23	6.37	19	7.98
Health Probs.	20	5.54	13	5.46
Assaulted	18	4.97	13	5.46
Sexually Assaulted	15	4.99	7	2.94
Car Crash	12	3.32	11	4.62
No Response	37	10.25	24	10.08
Other	50	13.81	26	10.92