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I certify that the thesis entitled "Traumatic Stress Reactions in Police" and submitted for the degree of Doctor of Philosophy is the result of my own research and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed:

Witness:

Date: 30/10/95

Traumatic Stress Reactions in Police

A thesis submitted in partial fulfilment of the requirements for the award of the degree

Doctor of Philosophy

from

University of Wollongong

by

Jeannie Higgins, B.A. (Hons)

Department of Psychology

1995

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Abstract

A personal construct model of traumatic stress reactions has been developed to predict the relationships between personal, trauma, and recovery factors. This model was evaluated in two studies with police. This research establishes some normative baseline epidemiological data on the levels of Posttraumatic Stress Disorder (PTSD) in novice recruits and inexperienced police. The major implications of a personal construct model of traumatisation for police and policing organisations are discussed.

The cross-sectional study included 750 recruits and inexperienced police. The repeated measures study re-assessed 193 recruits after one year of policing. Data were obtained on history, personal theories, potentially traumatising events and their subjective impact, perceived availability of social support, and trauma symptoms. The existence of PTSD was assessed by structured interview with 20% of the participants.

A negative personal theory, a family history of psychological assistance, a reported emotional abuse or neglect history, and Catholicism were significant explanatory variables. The type of trauma, a perception of life threat, total trauma exposure weighted by subjective impact, and personal identification with a traumatic event were significant predictors of trauma symptoms. In the cross-sectional study, police with one year of experience had a current PTSD prevalence rate of 6.05% compared to recruits at 3.36%. In the repeated measures study, a current prevalence rate of PTSD for experienced police officers was 8.29% compared to themselves, as recruits, at 3.36%. Trauma symptoms were associated with being a police officer with one year of operational experience. Trauma symptoms were also associated with the perceived availability of different types of social support in diverse ways. Baseline trauma symptoms did not predict trauma symptoms after a year of operational policing.

A personal construct model of traumatisation found considerable empirical support from these police studies. Psychological proximity to potentially traumatising life events, negative personal theories, and aspects of the recovery environment were related to trauma symptoms. The limitations of the findings are discussed. Fundamental systemic changes in policing environments are suggested which may help prevent traumatic stress reactions in police and facilitate their recovery from traumatic experiences.

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Traumatic Stress Reactions in Police: An Introduction

Traumatic Stress Reactions In Police: An Introduction

In Chapter One I will describe the content of this thesis.

In Chapter Two, I will provide an historical and political context for the study of police stress and then critically review the extensive literature on police stress. The major theoretical formulations of police stress will be described and their strengths and weaknesses will be evaluated. Both sociological and psychological perspectives on police stress will be examined. The major methodological characteristics of previous investigations into police stress will be described and the conceptual clarity of the work will be discussed. Fundamental systemic issues in some policing organisations will be described as providing a context which may be unfavourable to optimal adult development and to recovery from stressful life events. Policing environments will be discussed as potentially having some characteristics that are not necessarily conducive to the formation of new meanings for significant life experiences (Kelly, 1955). The creation of new meanings for stressful life events is seen as critical in preventing vulnerability to potentially traumatising events and as central to recovery from such events (Kelly, 1955). I will explore the context of some policing organisations by reviewing some of the information currently available on the relationships between the police and the community, police and the criminal justice system, and the organisational climate of some policing institutions. The review of organisational climate factors in policing will include discussion of police selection, education and training, managerial styles, job designs, accountability, gender issues, and police culture. The evidence for an association between stressors in policing and their consequences for police will be evaluated by discussing physical health, suicide, depression and anxiety, substance use, police families, and occupational indicators. These contextual factors within policing organisations will be described as fluid and changing.

In Chapter Three, I will justify my decision to focus on traumatic stress reactions in police rather than other forms of pathology. I will discuss the historical and political

context of the study of traumatisation and introduce Posttraumatic Stress Disorder (PTSD) as a diagnostic category. Some of the unresolved issues in our understanding of the impact of traumatic events will be explored, as will the limitations and anomalies of the current diagnostic criteria for PTSD. The evidence for the persistence of PTSD and its concurrent existence with other psychological difficulties will be detailed. The prevalence of PTSD in the general population, following war and civil violence, disasters, individualised traumatic violence or injury, and in emergency workers will be briefly discussed. Previous contributions to our understanding of traumatisation in police will be critically examined in some detail, including current efforts to prevent and treat debilitating consequences. Key concepts arising from this review concerning personal, trauma, and recovery variables will then be summarised.

In Chapter Four, four major groups of conceptual models of traumatic stress reactions will be critically evaluated against established and specific criteria. Psychodynamic, cognitive/behavioural and information processing, biological, and socio-cultural models will be examined. The problems of technical eclecticism without theoretical coherence will be identified and the need for an integrated model of traumatic stress reactions will be established.

In Chapter Five, a personal construct model of traumatic stress reactions will be presented. The assumptions of this model will be made explicit. I will articulate a proposal for the relationships between personal factors, characteristics of traumatic events, recovery environments, and traumatisation. An explanation for the intrusive, avoidance and numbing, and physiological symptoms of PTSD will be offered. This personal construct formulation will be evaluated against the specified criteria for a comprehensive model of traumatic stress reactions and its contribution will be systematically contrasted with the other conceptual models already discussed in Chapter Four. It will then be assessed for its ability to enhance our understanding of traumatic stress reactions.

In Chapter Six, I will identify my major objectives in undertaking this research programme with police. I will provide a rationale for the methodology of this research programme among a variety of other possible options. I will discuss some of the inherent difficulties in studying trauma in the workplace and some of the methodological strengths of the approach which was selected. I will discuss the ways in which the research hypotheses are informed by a personal construct model of traumatisation and the earlier reviews of the theoretical and empirical literature. I will describe the sampling strategy and the psychometric properties of the various measures chosen to test the hypotheses in two research studies. The first study is a cross sectional design which compares novice police recruits to a large sample of police who have completed a year of operational policing. The second study is a repeated measures design which compares these same novice recruits to themselves after a year of operational policing. The significance and some of the constraints of the methodology will then be outlined. I will specify my research question and hypotheses and then briefly summarise this chapter.

In Chapters Seven and Eight, the findings of both studies will be detailed. The research procedures and the processes of statistical analysis will be described. The prevalence rates of PTSD and the best predictors for the presence and severity of trauma symptoms in police will be reported for both studies. Relationships between important variables over time will also be described in Chapter Eight.

In Chapter Nine, the specific implications of the research findings with police will be discussed. The research programme will be critically evaluated and suggestions for future evaluations of a personal construct model of traumatic stress reactions will be made.

In the final chapter, some of the more general theoretical implications of a personal construct model for traumatic stress reactions in police will be described. Recommendations will be made for preventing and intervening in traumatic stress reactions in police. The discussion in this chapter will include, but go beyond the areas

that were directly empirically evaluated in this research programme, and as such, some of my conclusions will be speculative.

We will begin our adventure by discussing the police stress literature in the next chapter.

Chapter Two

Stress in Police

Stress in Police

Most research into police stress has not been theory driven. There are a number of theoretical models which provide some explanations for police stress but they frequently appear to be incorporated into empirical investigations as loose retrospective rationalisations of findings. Unfortunately, the abundance of studies in this area does not seem to have been matched with the same depth of understanding. Many investigations seem to have been largely unfocussed and significantly methodologically flawed. As a result, the generalisability and comparability of many of these research findings is limited. Global statements are sometimes made about policing and its stressors based on very tenuous grounds and without sound supporting evidence. Key concepts often remain undefined and inappropriate conclusions are drawn from the available data. There has been a tendency to compartmentalise stressors in policing within numerous classificatory systems. Many of these stressors and their sequelae are described as if they occur in isolation from the person who is experiencing them.

The basic concepts of the general stress literature (Billings & Moos, 1981; Cohen & Lazarus, 1973; Goldberger & Breznitz, 1982; Lazarus & Folkman, 1984; Selye, 1956) will not be reviewed because the focus of this thesis is specifically on traumatic stress reactions in police. The major theoretical formulations associated with the general police stress literature will be described because they provide part of the background for understanding and evaluating the contribution of a new theoretical model traumatic stress reactions in police. The strengths and limitations of these theoretical formulations will be discussed. The methodological characteristics of previous investigations into police stress will also be critically reviewed. Policing environments will be discussed as potentially having some characteristics that are not necessarily conducive to the formation of new meanings for significant life experiences (Kelly, 1955). The specific conditions that are favourable and unfavourable to the formation of new personal meanings following

extremely stressful life events will be briefly discussed and more fully developed in Chapter Five where a new theory of traumatic stress reactions will be presented. The literature on relevant contextual factors in policing and their sequelae will then be examined in light of these favourable and unfavourable conditions for forming new meanings for stressful life events. The highlights of this journey into the police stress literature will then be briefly summarised. Previous contributions to our understanding of traumatic stress reactions in police will be discussed in Chapter Three.

Historical and Political Context of Stress in Policing

Unfortunately, most investigations into police stress have not been informed by theory. Various social theories initially inspired general police research in the USA and Britain (Banton, 1964; Bittner, 1967; Cain, 1973; 1979; Cumming et al., 1965; Lambert, 1970; Skolnick, 1966; Wilson, 1968). In response to the social unrest in both countries during the sixties and the early eighties, there was a dramatic upsurge in investigations into policing. Law and order still remains a central political and social issue. However, current general police research appears to be largely piecemeal. It seems to be more concerned with policy and quantifiable outcomes than with theory building and testing (Reiner, 1990).

Interest in police stress grew out of a need to acknowledge that some police were having difficulties with their occupational, social, and personal functioning (Ainsworth & Pease, 1987; Kroes, 1976; Territo & Vetter, 1981). Prior to the development of professional programmes and interventions, police with such problems were ignored, disciplined, or sometimes assigned to "lighter" duties including having formal welfare responsibility for other police. The first programmes in many policing organisations were for alcohol abuse. The emergence of the "employee assistance" movement in the early seventies saw an extension of treatment services into some of the other difficulties police were experiencing (Olekalns, 1985; Raue, 1989). Formal organisational responses to

these problems did not occur until the eighties in Australia and they were often precipitated by police union agitation. Services were usually internally located within policing organisations. These services were generally under-resourced and seemed to focus almost exclusively on the personal adequacy of individual police. If such interventions did not work, police were again frequently ignored, medically retired, or occupationally terminated for some other reason (Olekalns, 1985; Toohey, 1993). Unfortunately, this situation remains largely unchanged in many policing organisations. There are still no systematic evaluations into the effectiveness of formal interventions into police stress (O'Connell, 1994; Robinson & Mitchell, 1993).

Sociological Perspectives

Many sociologists have attempted to place the occupation of policing within a social and political reality. These writers have tried to explain what it is that the police actually do. Such conceptualisations involve themes of internal solidarity between police, social divisions and structural inequity in societies, social and political contradictions, peace-keeping contrasted to law enforcement expectations, and analyses of the capacity to use coercive force and discretion. They describe the social isolation, moral dilemmas, political and social control, normlessness, role conflict, estrangement, powerlessness, public prejudice, anomie, suspiciousness, cynicism and alienation experienced by police (Banton, 1964; Bittner, 1967; 1970; Chapman, 1971; Ericson, 1982; Klockars, 1980; 1985; Muir, 1977; Punch, 1979; Van Maanen, 1973). Although these workers do not specifically use the terminology "police stress", their contributions are critical to our understanding of the social and political reality of policing, and therefore police stress.

Law Enforcement versus Peace-Keeping

Bittner (1967) divides police into two main types namely, law officers and peace officers. He suggests that the role of peace officer is ill-defined and receives only casual attention

in police training. He argues that this lack of preparation for peace-keeping is extremely problematic, given that the largest percentage of the occupational life of operational police is spent fulfilling these functions. Bittner's proposals are based on twelve months field work in two large cities in the USA in which one hundred interviews with officers of all ranks were conducted. He delineates the structural demands of peace-keeping into five categories: 1) supervision of licensed premises and traffic; 2) public demand for involvement in situations not involving criminal or legal issues for example, quarrels, helping people in trouble; 3) non arrest of people in situations where this is technically possible; 4) mass phenomena including crowd control; and 5) special duties with those not considered accountable for their actions for example, mentally ill people, and children. Bittner (1970) discusses popular conceptions about the character of police work and suggests that most of them are devoid of realism. He proposes that police work is a tainted occupation and police are required to deal quickly and simply with matters involving subtle human conflicts and profound legal and moral questions. The ecological distribution of police work reflects a whole range of public prejudices and as such is socially divisive. Bittner believes that the capacity to use legitimate force is at the core of the policing role and is essentially unrestricted. He discusses some of the basic social and political contradictions of policing for example "on what terms can a society dedicated to peace institutionalise the exercise of force"(p. 48).

Conflicting Roles

Chapman (1971) suggests that the objective authority of the police is an implicit threat to personal dignity and the vehicle for society to censor its citizen's behaviour. In elaborating upon this theme Chapman says of the policeman: "He is in the tradition of the parent, the school-master and the sergeant-major, but he does not have the affection of the first, the improving quality of the second, or the glamour of the third" (p. 95). He discusses contradictory pressures on the police and highlights the impossibility of individual police ever being able to fulfil such conflicting roles. Chapman emphasises the

uniqueness of the policing role in societies and says of police "they are profoundly concerned with some of the most fundamental problems of justice, equity, retribution, punishment, charity and remorse" (p. 101).

Structural Inequities in Wealth and Power

Punch (1979) collectivises the work of other sociological writers on policing. He emphasises the cosmopolitan nature of criminal life in cities. He discusses the complex factors that result in an almost normless quality to police work and increasingly ineffective law enforcement. Punch's research participants policed the red light district of Amsterdam. He suggests that a person's work is an important part of their social identity and discusses the social isolation and estrangement of police working in inner metropolitan areas. Punch sees police as playing a critical role in maintaining the existing social system of structural inequities in wealth and power. He says "police operate at the nerve-end of society having to resolve the street's legal ambiguities, cultural conflicts and normative confusion" (p. 23).

The Dirty Harry Problem

Klockars (1980) suggests that police are frequently placed in "situations in which good ends can be achieved by dirty means" (p. 33). These experiences are called Dirty Harry problems. Klockars suggests there is no way for police to escape these moral dilemmas and articulates the complex questions that one needs to ask if one is going to use dirty means. Klockars discusses the notion of compelling and unquestionable ends as a justification for the use of dirty means for example, peace as the justification for the stockpiling of nuclear weapons. He proposes three "defective" resolutions of the Dirty Harry phenomena and describes the implications for the way police perform their duties.

Muir's (1977) theory can be described in three parts. Firstly, as an analysis of coercive power and the special problems faced by people who assume the responsibility

of coercing others. Secondly, as a commentary of how coercive power affects personality and the way different people respond to the challenges of possessing coercive power. Finally, as a delineation of the conditions that discourage the excessive use of coercive means and encourage police officers to develop in morally and politically mature ways (Klockars, 1985; Muir, 1977). Muir discusses four paradoxes of coercive power: 1) the paradox of dispossession (the less one has, the less one has to lose); 2) the paradox of detachment (the less the victim cares about something, the less the victimiser cares about taking it hostage); 3) the paradox of irrationality (the more delirious the threatener, the more serious the threat; the more delirious the victim, the less serious the threat); and 4) the paradox of face (the nastier one's reputation, the less nasty one has to behave). Muir uses Weber's (1948) ideas to explain coercive power and its reciprocal relationship with police personality. He does this by elaborating the moral dilemmas of the Dirty Harry problem. He discusses Weber's four alternatives for the politician to resolve these moral dilemmas and suggests the same options are relevant to police. Police can give up the idea of a police career at all. They can abandon passionate hopes for using power to achieve the great ideals of doing good, helping people, and promoting justice. Police can hold onto passionate ideals but abandon respect for civilised means of achieving them, or they can become Weber's mature man or Muir's passionate, professional police person with perspective (Klockars, 1985; Muir, 1977).

Reproducing the Order of the Status Quo

Ericson (1982) also discusses some implications of police access to coercive force. This author's focus is on the Canadian policing experience and his data is obtained from a large municipal police force. Ericson makes the observation that police work is often equated with crime work despite the operational reality that only a small portion of an officer's time is spent actually dealing with crime. He suggests that the mandate of police is to reproduce the order of the status quo and contends that this sense of order frames the resources needed to maintain it. Ericson describes the essential powerlessness of

operational police to change anything because of structural inequities in societies. Ericson suggests that the typical political and organisational reaction to indicators of conflict, such as crime, is to expand the apparatus of control. Hence the law and order platforms of many political parties. Ericson discusses police discretion and the use of rules. He restates the valuable point that discretion increases as one moves down policing organisational hierarchies and emphasises the essential lack of control policing organisations have over individual members (Wilson, 1968). Ericson describes some of the compensatory methods enacted by policing organisations to deal with this lack of control and maintain the status quo. Ericson sees these compensatory methods demonstrated in policing uniforms, military like hierarchies, and the identity stripping which occurs during police socialisation. He discusses the selective and punitive use of departmental power to deal with police who challenge the status quo, and suggests a deliberate focussing of the energies of policing unions into simply reacting to petty grievances.

Other sociological writers have proposed that the social pressures of complex societies have a particularly deleterious effect on police and lead to role conflict, alienation, powerlessness, anomie, and cynicism (Jirak, 1975; Van Maanen, 1978).

Psychological Perspectives

Examination of the widely disparate psychological literature on police stress indicates that there are three major categories of proposals to explain the source of an individual's difficulties in dealing with the occupational demands of policing. These will be called the nature, nurture, and interactional hypotheses.

The Nature Hypotheses

These hypotheses contend that police stress is exclusively associated with the personalities or characters of police. Such personal attributes are said to have been determined long before they join policing organisations.

Personality theories

These models suggest that some people are already especially vulnerable or resistant to the occupational stressors of policing at recruitment. People with particular personalities are drawn to policing especially those who like to discipline and be disciplined. These people are expected to show evidence of conservative and authoritarian traits on personality questionnaires (Colman & Gorman, 1982). These personality traits are assumed to be established and essentially unchanging. Psychometric test batteries have been repeatedly administered to policing populations in attempts to characterise police and to identify an ideal or stress resistant police personality (Alexander & Walker, 1994; Davidson & Veno, 1984).

Psychodynamic explanations

Bonifacio (1991) proposes a psychodynamic explanation of policing. He suggests that police stress is consequential to conflict or mixed feelings and perceived as anxiety either consciously or unconsciously. It is suggested that ambivalence, or simultaneous feelings of love and hate, represent the most intense experience of such conflict. Bonifacio believes that to understand police stress we must understand the ambivalent feelings experienced by police themselves, and ambivalent feelings directed towards police by policing organisations, the public, spouse, family, friends, and work peers. He contends that policing results in people feeling both omnipotent and powerless at the same time. Police are described as simultaneously loving and hating their jobs and these conflicts are proposed as the cause of police stress. Bonifacio sums up his pychodynamic theory of

police stress by saying "One part of his conflict results from feeling overwhelmed by a cruel, uncivilised environment that is too powerful for him to master. The result is feelings of objective anxiety. The second part results from being gratified by the work in ways that threaten his moral code. He is deriving immoral pleasure that threatens to make him uncivilised and cruel. This conflict leads to superego anxiety. These two forms of anxiety are at the heart of police stress" (p. 133). Both sorts of anxiety are dealt with by various defence mechanisms. Bonifacio's model is concerned with unconscious motivation, conflict, anxiety, and defence mechanisms. He says: "The problem of police stress has to do with human nature rather than departmental procedures and organisation and human nature is very resistant to change of any kind" (p. 134).

The Nurture Hypotheses

These theories propose that police develop certain ways of being and interacting with the world in response to the social, political, operational, and organisational realities of policing. They also suggest that negative physical and psychological sequelae are directly related to the occupational stressors experienced by police.

The working personality

Skolnick (1966) analyses aspects of the police milieu especially the experiences of danger, authority, and the unrelenting pressures for efficiency in policing. His central thesis is to emphasise features of the policeman's operational environment interacting with the paramilitary police organisation to generate a "working personality" (p. 81). This working personality is characterised by suspicion, social isolation, emotional and political conservatism, and the development of a kind of perceptual shorthand to quickly identify certain kinds of people. Skolnick suggests this working personality is organisationally validated. A working personality helps police avoid the competing thoughts and feelings

which would otherwise be involved in enforcing laws in which they do not believe (Skolnick, 1966).

Cynicism

Niederhoffer (1967) suggests that cynicism is discernible at every level of policing. He suggests that police view the world as being composed, with very few exceptions, of scoundrels, hypocrites, and imbeciles. He proposes two types of cynicism. Cynicism directed against life, the world, and people; and cynicism directed against the police system itself. There are three possible responses to cynicism. First, to avoid cynicism by becoming a professional and work towards transforming and eventually controlling the system. Second, to become absorbed in a delinquent occupational subculture involving corruption. Finally, to overcome cynicism and regain commitment. Niederhoffer proposes a continuum with commitment at one end and anomie at the other. Cynicism is at a critical intervening stage. He suggests that cynicism develops in stages that run parallel to the occupational career of police.

The John Wayne Syndrome

Reiser (1974) proposed the development of the "John Wayne Syndrome" in police. This is a response to the organisational climate experienced by new recruits who are described as initially eager, young, idealistic, open, accepting, and relatively flexible. Like John Wayne, police are said to eventually become characterised by "cynicism, overseriousness, emotional withdrawal, coldness, authoritarian attitudes and tunnel vision.... Situations and values are dichotomised into good or bad, all or nothing" (p. 158). Being strong and in control is valued and the expression of emotion is devalued. Reiser suggested that surviving police overcome these attitudes after a few years, and become more flexible in their values and attitudes.

The traditional police stress hypothesis

The traditional police stress hypothesis directly links the psychological stressors of policing to psychological and physical ill health (Malloy & Mays, 1984; Terry, 1981). There seems to be two major assertions of this position. Firstly, police experience significantly more stress than other occupations. Secondly, these occupational stressors results in severe psychosocial and physical disruption to individuals (Malloy & Mays, 1984).

Interactional Hypotheses

These theories propose that individual predispositions and exposure to environmental factors, including stressful life events, interact with the perceptions and coping strategies of individual police to influence their physical and psychological well-being.

Proximity-control/Stress-diathesis

Malloy and Mays (1984) presents two models together as alternatives to the traditional stress hypothesis namely, the proximity-control hypothesis and the stress-diathesis model. The proximity-control hypothesis is proposed to explain variations in police stress as a function of occupational role. These authors propose a mathematical formula where police stress is a multiplicative function of the strength, immediacy, and the number of occasions of social control, during a particular occupational situation. The proximity-control hypothesis is said to be able to make specific predictions about the nature and intensity of situations which will result in police stress. The stress-diathesis model assumes that all individuals experience stress irrespective of occupation and asserts that distress is caused by inadequate coping strategies and the complex interaction of genetic, social, and psychological mediating factors (Malloy & Mays, 1984).

The person-environment fit

A "Person-Environment fit" model of police stress suggests that unique individual responses and environmental characteristics are both important to psychological and physical health outcome (McNulty, 1984; Olekalns & McNulty, 1984). Stress is said to occur when there is awareness of a mismatch between response capability and environmental demand, and the consequences are considered important by the individual. Personal and environmental resources are the major sources of response capability. The relationships between these factors are presented as circular and interactive. It is suggested that it is impossible to distinguish cause and effect in the precipitation of the stress cycle, and therefore, to ascertain the relative impact of personal or occupational stressors. The occurrence, severity, and maintenance of the stress cycle is said to be mediated by coping resources. Stress may lead to psychological and or physical difficulties.

A phase model of burnout

Golembiewski and Byong-Seob (1990) introduced a phase model of burnout as a measure of strain. They suggested that the strain produced by stressors is neglected in much empirical research. Burnout is presented as the "missing link" (p. 76). Three correlates of burnout are described namely, depersonalisation, personal accomplishment (reversed), and emotional exhaustion. Burnout is successively influenced by these three factors. An eight stage model of "progressively virulent burnout" is described. There are chronic and acute paths to advanced burnout. The acute road to advanced burnout seems to include potentially traumatising events, although the concept of traumatisation is not specifically mentioned.

The Strengths and Limitations of these Approaches

The authors of these formulations of police stress have identified some of the critical factors which need to be considered in the development of a model of traumatic stress reactions in police. The sociological perspectives, in particular, serve to significantly inform our recognition of these issues. Unfortunately, some of the ideas reviewed are not really theories because their assumptions are not made explicit. Many do not readily lend themselves to empirical falsification and very few of them have been systematically empirically evaluated. The formulations proposed often do not articulate sound and parsimonious conceptual schemes. Many do not contain relevant sets of propositions nor do they explain the relationships between significant properties (Chapman, 1971; Colman & Coman, 1982; Fell, et al, 1980; Kroes et al., 1974; Lester & Gallagher, 1980; Malloy & Mays, 1984; Reiser, 1974). The research that has been conducted into police stress is often not theory-driven although retrospective rationalisations of findings are common. A more detailed theoretical and methodological overview of these perspectives and related empirical studies may be found below (see Tables 2.1, 2.2, 2.3, & 2.4). Many perspectives on police stress are largely descriptive rather than explanatory and some assume homogeneity of both appraisal and experience for individual police. Police are frequently categorised into simplified typologies which deny individual complexity and uniqueness. Some writers propose prescriptive and linear stage models of policing or suggest static personality traits either at recruitment, or in response to policing environments. Such formulations have sometimes led to the unjustified stereotyping of police and to sweeping generalisations about their behaviour at various points in their careers. The nurture hypotheses are based on the assumption that police stress is necessarily cumulative and they do not explain individual differences such as healthy adaptations to policing environments. The process of relationships between multiple variables and police stress is often not explained even by those proposing interactional hypotheses. Few writers articulate the direct implications of their views for either prevention or intervention.

Most of the formulations reviewed also have difficulty explaining empirical findings investigating police stress. However, there is some recent limited and indirect support for Skolnick's "working personality". While there is a lack of evidence for initial differences on authoritarianism between police recruits and general population controls, there appears to be a subsequent rise in authoritarianism with increasing policing experience (Brown & Willis, 1985; Fielding, 1989; Foster, 1989; Graef, 1989). In contrast and although cause and effect remain unclear, there has also been indirect recent support for some of the nature and interactional hypotheses. In a recent study of Scottish police, the variable of Neuroticism distinguished pathological levels of anxiety in male constables, female constables, male sergeants, and male inspectors from their normal peers, and was associated with intermediate to high risk alcohol consumption in male constables. Very dissatisfied constables scored higher on Neuroticism and such scores were predictive of male constables and sergeants who had poor attendance at work (Alexander et al., 1993; Eysenck & Eysenck, 1975). Neuroticism had a consistent relationship with psychological distress in an earlier study of a British police team involved in the recovery of human bodily remains (Thompson & Solomon, 1991). The trait anxiety scores of Australian police officers have also been correlated with a number of job stressors (Evans, 1993).

Unfortunately, the knowledge gained from sociological or psychological perspectives has not been cumulative (Punch, 1979). A more comprehensive theoretical model of police stress may subsume some of the ideas reviewed above and explain the process of relationships between personal strengths and vulnerabilities, stressful life experiences, recovery factors, mental health outcome, and ongoing development. It is suggested that such a framework is provided by a personal construct theory of traumatic stress reactions in police which will be discussed in Chapter Five.

Table 2.1 Theoretical and Methodological Review of Police Stress Literature - Sociological Theories

Theory (Study)	States Assumptions	Empirically Falsifiable	Sound Conceptual Scheme	Explains Relationships Between Variables	States Prevention or Intervention Implications	Sample	Research Design and Measurement	Control Group
Law enforcement vs Peace - keeping (Bittner, 1967; 1970)	Yes	No	Yes	No	Yes, discusses training police for their peace-keeping role	Police of all ranks from two USA cities	12 months of observation; approx. 100 interviews.	No
Conflicting roles (Chapman, 1971)	No	No	No	No	No	N/A	N/A	N/A
Structural inequities in wealth and power (Punch, 1979)	Yes	No	Yes	No	No	Police in one station in Amsterdam	Case study of an inner city police station; by observation.	No
The 'Dirty Harry' problem (Klockars, 1980)	Yes	No	Yes	No	Yes, discusses punishing police and policing organisations who use dirty means too readily or too crudely.	N/A	N/A	N/A
(Muir, 1977)	Yes	Yes	Yes	Yes	Yes, provides comprehensive analysis of conditions that encourage police officers to develop in morally and politically mature ways.	28 USA police	Observational study with interviews	No
Reproducing the order of the status quo. (Ericson, 1982)	Yes	No	Yes	No	No	Large Canadian municipal Police Force	Observational study with the 'social action' tradition of sociology; Observation and interviews.	No

Table 2.2. Major Findings of Sociological Studies

Study	Major Findings
Bittner, 1967; 1970	1) Police cultivate knowledge through acquaintances. 2) Police proceed against people based on perceived risk rather than culpability. 3) Police aim to reduce the total trouble in an area rather than concentrating on individual cases. 4) Patrol work requires discretionary freedom and is complex. 5) Training for peace-keeping is inadequate.
Chapman, 1971	N/A
Punch, 1979	1) Police working in the inner city feel isolated. 2) Police maintain existing structural inequities in wealth and power.
Klockars, 1980	N/A
Muir, 1977	The good cop has to develop two virtues: 1) Requires intellectual grasp of the nature of human suffering, and 2) Resolving moral conflict of achieving just ends through coercive means.
Ericson, 1982	1) The essential powerlessness of operational police to change the structural inequities influences the character of police and is inherently stressful.

Table 2.3 Theoretical and Methodological Review of Police Stress Literature - Psychological Theories

Theory (Study)	States Assumptions	Empirically Falsifiable	Sound Conceptual Scheme	Explains Relationships Between Variables	States Prevention or Intervention Implications	Sample	Research Design and Measurement	Control Group
The Nature Hypothesis								
Personality (Colman & Goman, 1982)	No	No	No	No	No	British Sample of police recruits	Cross-sectional study; Self report questionnaire	Yes
Psychodynamic explanations (Bonifacio, 1991)	Yes	No	Yes	No	Yes	N/A	N/A	N/A
The Nurture Hypothesis								
The working personality (Skolnick, 1966)	Yes	Yes (aspects)	Yes	No	No	282 police in Westville, USA	Cross-sectional; questionnaire, interview, observation.	No
Cynicism (Neiderhoffer, 1967)	Yes	Yes	No	No	Yes	N/A	N/A	N/A
The John Wayne Syndrome (Reiser, 1974)	No	Yes	No	No	No	N/A	N/A	N/A

Table 2.3 Theoretical and Methodological Review of Police Stress Literature - Psychological Theories (Continued)

Theory (Study)	States Assumptions	Empirically Falsifiable	Sound Conceptual Scheme	Explains Relationships Between Variables	States Prevention or Intervention Implications	Sample	Research Design and Measurement	Control Group
The Nurture Hypothesis								
The Traditional Stress Hypothesis (Kroes et al., 1974)	No	No	No	No	No	100 male Cincinnati police	Cross-sectional and retrospective study; Semi-structured individual interview	No
(Fell et al., 1980)	No	No	No	No	No	Police records in the State of Tennessee (1972-74)	Non randomised selection of small police sample; Epidemiological study of death certificates, health care records, and admission data - medical centres	Yes, police compared with 130 occupations
(Lester & Gallagher, 1980)	No	No	No	No	No	Police and Divisional Department Store Managers	Cross-sectional restrospective design; Self-report of stress symptoms	Compared to Division Managers at Department store

Table 2.3 Theoretical and Methodological Review of Police Stress Literature - Psychological Theories (Continued)

Theory (Study)	States Assumptions	Empirically Falsifiable	Sound Conceptual Scheme	Explains Relationships Between Variables	States Prevention or Intervention Implications	Sample	Research Design and Measurement	Control Group
The Interactional Hypothesis								
Proximity-Control / Stress-Diathesis (Malloy and Mays, 1984	Yes	No	No	No	No	N/A	N/A	N/A
The Personal -Environment Fit (McNulty, 1989; Olekalns & McNulty, 1984)	Yes	Yes	Yes	No	Yes	N/A	N/A	N/A
A Phase Model of Burnout (Golembiewski & Byong-Soeb Kim, 1990)	Yes	No	Yes	No	No	US State Police (N=91) Canadian Urban Police (N=708) Canadian Police Academy	Cross-sectional Restrospective Design: Self-Report Questionnaire.	Yes, 13,000 members of various occupational groups.

Table 2.4 . Major Findings of Psychological Theories of Police Stress

Study	Major Findings
The Nature Hypothesis	
Personality (Colman & Goman, 1982)	1) The police force attracts conservative and authoritarian personalities. 2) Basic training has a temporary liberalising effect. 3) Continued police service results in increasingly ill-liberal/intolerant attitudes.
Psychodynamic explanations (Bonifacio, 1991)	N/A
The Nurture Hypothesis	
The working personality (Skolnick, 1966)	1) The working personality prevents conflicting cognitions. 2) The working personality is characterised by suspicion, social isolation, emotional and political conservatism and perceptual short hand. 3) The working personality is organisationally validated
Cynicism (Neiderhoffer, 1967)	N/A
The John Wayne Syndrome (Reiser, 1974)	N/A
The Traditional Stress Hypothesis (Kroes et al., 1974)	1) Perceived sources of stress are largely organisational or bureaucratic.
(Fell et al., 1980)	1) Police had significantly higher rate of premature death. 2) The causes of police death are not different to other occupations. 3) Police rate third highest in rate of suicide. 4) Rate of police admission to community health centres no greater than chance. 5) Rate of police admission to hospitals significantly higher than chance.
(Lester & Gallagher, 1980)	1) The two groups did not differ in frequency of headaches, irritation, satisfaction, anger, fulfilment, tiredness, indigestion, relief, frustration, and happiness. 2) The store managers were tense more frequently and relaxed less often.
The Interactional Hypothesis	
Proximity-Control / Stress-Diathesis (Malloy and Mays, 1984	N/A

Table 2.4 . Major Findings of Psychological Theories of Police Stress (Continued).

Study	Major Findings
The Personal - Environment Fit (McNulty, 1989; Olekalns & McNulty, 1984)	N/A
A Phase Model of Burnout (Golembiewski & Byong-Seob Kim, 1990)	1) Substantial proportions of each population fall into the 3 most advanced phases of burnout. 2) 42-52% fall in the three lowest phases of burnout. 3) State Police have the most favourable distribution of phases. 4) 38% of State Police fell in the three most advanced phases of burnout. 5) Police are not substantially worse off than 13,000 members of various occupational groups.

Methodological Characteristics of Empirical Research into Police Stress

There are inherent difficulties in measuring stressors and reactive processes. Measurement of stressors and their sequelae often relies upon subjective report. Self report allows access to the processes occurring inside a person which can not be determined by observation but self-report measures are limited by considerations of accuracy and validity. Studies using observational methods may appear to be more objective than self-report measures but they are reliant on interpretation by the observer. The presence of an observer may also be experienced by some research participants as artificial and could influence the outcome of a particular study. Observational investigations using physiological measures often suffer from major difficulties in respect to individual differences which may be unrelated to specific stressor situations. While some of these problems can be overcome by obtaining multiple individual baseline information, the difficulties in controlling for the influence of extraneous factors other than the specific variables of interest are still problematic when using physiological measures. Studies utilising archival records overcome some of the difficulties of using self -report and observational measures. They are still open to potential biases with regard

to the factors involved the original collection of the information and the selection of the data to be examined (Burns, 1990; Green, 1994; McNulty, 1984).

The value of the empirical information available on police stress must be critically evaluated in light of a number of important methodological issues. Sadly, most studies are not only theoretically uninformed but many are not especially systematic (see tables 2.1, 2.2, 2.3, & 2.4). There is often a lack of conceptual clarity in defining police stress and it is sometimes simultaneously described as a stimulus, a response, and an intervening variable (Lazarus, 1966). Police stressors have been classified in many different ways, thereby limiting the comparisons which can be made between findings. There is often a focus on selected police populations coming to the attention of mental health professionals, or biased, unrepresentative, and very small samples. This severely curtails the generalisability of such results. The widespread failure to use control groups and identify and take account of possible confounding variables largely invalidates many investigations. Studies frequently do not statistically evaluate stated differences between groups and there is repeated violation of the fundamental assumptions of various statistical tests. An exclusive reliance on self-report inventories or unsubstantiated observer inference without recognition of the limitations of such approaches often leads to erroneous conclusions. There is also a lack of consistent outcome measures and no controlled intervention outcome studies in the study of police stress. Cross-sectional rather than longitudinal designs have predominated and studies have been limited by the retrospective analysis of relevant variables. Inappropriate causal inferences have frequently been drawn about the relationships between individual, organisational, and environmental effects (Lidgard, 1986; 1987; Malloy & Mays, 1984; McNulty, 1984; Olekalns & McNulty, 1984; Teahan, 1986; Terry, 1981).

Favourable and Unfavourable Environments

In an attempt to overcome some of these theoretical and methodological problems, a new conceptual model of traumatic stress reactions (to be fully discussed in Chapter Five) will attempt to explain the process of relationships between personal, trauma, and recovery variables and their implications for health and ongoing development. Aspects of this model were empirically tested with police.

In this new model the context in which an individual exists is seen as critical in helping to prevent vulnerability to potentially traumatising events and as central to recovery from such events. Such environments may be favourable or unfavourable to the formation of new meanings for stressful life events (Kelly, 1955).

Environments which are favourable to increasing personal integration and flexibility and the formation of new meanings are characterised by a number of features Kelly (1955). Firstly, they provide contexts which are novel and removed from the familiar. They may involve the use of fresh people, objects, or events. Such environments are safe and protected but also plausible and acceptable to the individual. Optimal contexts allow people to move beyond their usual roles and ways of being in the world. Secondly, they encourage trial and error learning and a safe context to try on new ways of looking at the self, the world, and the future. Favourable conditions are conducive to behavioural experimentation without catastrophic consequences. Finally, favourable contexts provide validating information when people are experimenting with new ways of looking at themselves, their world, and their future. The person effectively receives some returns on their new anticipations and meanings which they may then interpret and play with in a variety of ways (Kelly, 1955).

Kelly (1955) believed that failure to maintain favourable conditions would delay the formation of new meanings and that there are also some circumstances which are especially unconducive to optimal personal development. These circumstances include threats to the person's identity, their sense of worth or value, their perceptions of their

ability to influence the outcome of events, and their perceptions of reality. An assault to an individual's capacity to maintain themselves as a social being is also seen as being especially unfavourable to optimal adult development and the formation of new meanings. Ongoing exposure to such experiences acts as confirmatory evidence for meanings learnt during the threatening event. The formation of new meanings is also inhibited by pre-occupation with old ways of viewing the self, the world, and the future. They are significant difficulties if a person has no safe opportunity to experiment with different meanings (Kelly, 1955).

The favourability of some policing contexts for optimal adult development and the formation of new meanings for stressful life events will be now be explored by discussing the currently available literature on stressors in policing.

Stressors in Policing

The literature on the stressors in policing is characterised by three major issues. Firstly, there is a long-standing, somewhat oversimplified, and largely irrelevant controversy concerning whether policing is more or less stressful than other occupations. The restraints of focussing on occupation as a single explanatory variable in police stress reactions has not deterred workers from continuing to pursue this rather unproductive and simplistic approach. The research findings in this area are equivocal, contradictory, and plagued by significant methodological weakness (Coman & Evans, 1991; Lidgard, 1986; Malloy & Mays, 1984; McNulty, 1984). Secondly, there is significant conceptual confusion concerning the relative primacy and influence of the frequency of particular life events, as opposed to their perceived stressfulness by individual police (Alexander et al., 1993; Brown & Campbell, 1990; Coman & Evans, 1991; Crank & Caldero, 1991; Evans, 1993). This confusion seems to derive, in part at least, from the implicit assumption that police stress is cumulative irrespective of individual appraisal of life events. Finally, there are a multitude of different classificatory schemes for police

stressors which make comparisons between findings difficult (Crank & Caldero, 1991; Coman & Evans, 1991; Davidson & Veno, 1984; Evans, 1993; Golembiewski & Byong-Seob, 1990; Kroes, 1976; Stratton, 1984; Terry, 1981). These classificatory schemes are sometimes inappropriately given the status of theories (Bonifacio, 1991; Spielberger et al., 1981). Their proponents do not clearly separate trauma and organisational variables despite a frequent willingness to draw conclusions about the relative importance of such factors. Some such writers have discussed stressful life events as if they were somehow separate from the individual who is experiencing them.

In this section the stressors associated with the relationships between police and the community, the criminal justice system, and the organisational climate of policing will be reviewed in light of their presumed influence on conditions which are conducive to optimal adult development and on the vulnerability of some individuals to traumatisation. Policing environments are also considered because of their perceived contextual relevance to the conditions which are favourable to recovery from traumatisation. These issues will be further elaborated in Chapter Five when a personal construct model of traumatic stress reactions in police is presented and in Chapter Ten when the theoretical implications and recommendations of this new model are explored.

Police–Community Relations

There is evidence that the relationship between police and the communities they police are not good (Davidson & Veno, 1984; Golembiewski & Byong-Seob, 1990; Jefferson, 1990). This is not surprising when one considers the historical, political, and social context of police sometimes being used as the coercive arm of governments. There is evidence of repeated abuse of the presumed separation of powers between governments, the judiciary, and police (Blackler, 1993; 1994). Such a context places individual police in an unenviable position where they may need to arrest someone whose cause they wholeheartedly support. Police are often dealing with their clients as an adversary and are required to control their emotions even when provoked. Police are frequently under

societal pressure to serve the incompatible ends of law enforcement and order maintenance simultaneously. Most communities are not aware that they expect police to perform such impossible tasks. As a consequence reflective police people will of necessity feel inadequate to fulfil their occupational role (Radelet, 1977; Wilson, 1968). Communities are likely to blame police and not consider the impossibility of their tasks. Police are frequently called "pigs" and stereotyped as "dumb cops". Operational police are exposed to the worst of humanity. Police have their own implicit classifications schemes for members of the general public namely, suspicious persons, assholes, and know nothings (Van Maanen, 1978).

Negative relations between police and communities have been repeatedly reported to be stressful to police (Bailey, 1987; Cooper et al., 1982; Kroes et al., 1981). Such a context may threaten the identity, worth, sense or reality, perception of power, and social role of some police. Communities may be especially intolerant to even relatively minor mistakes made by individual police and may stereotype all police by virtue of their occupation. Such relations between the police and the community are not seen as optimal to adult development or recovery from stressful life events (Kelly, 1955).

The Criminal Justice System

The lack of conviction of an offender may be perceived by some police as a direct insult to their personal competence. Many of even the most wanted criminals sometimes seem to be released on bail and some simply disappear (Coman & Evans, 1991; MacDonald, 1989). When police make a carefully evaluated arrest of someone there may be an implicit assumption of guilt (Ericson, 1982). Conversely, the law presumes the innocence of the offender until proven otherwise. There is also arbitrary scheduling of court appearances irrespective of the leave status or shifts of the police involved. There are frequently lengthy delays and unplanned adjournments influencing a police person's capacity to control their own occupational and personal plans. Such circumstances have been demonstrated to cause dissatisfaction and distress to some police (Hurrell, 1977). When

in court, police are often involved in an adversarial process of cross-examination where they may be challenged about the veracity of their evidence. This has been demonstrated to be inherently stressful (Loo, 1984). Involvement in the criminal justice system and the courts may not only help maintain a police person's preoccupation with a particular traumatising event, but appears to be inherently potentially threatening to how individual police may view themselves, their world, and their future (Avery, 1981; Kroes, 1976).

Organisational Climate

A number of issues will be discussed under the broader heading of organisational climate. These include initial and ongoing selection procedures, the education and training of police, managerial styles, job design, police accountability, gender issues, and police culture.

Selection procedures

There is very little satisfactory research on police selection and none on the process by which it is accomplished (Olekalns et al., 1985; Reiner, 1990). Most policing organisations rely on a combination of educational and health prerequisites, psychological testing, interview, and background investigations for the initial recruitment of police. These procedures are not standardised nor has their relevance or predictive power been systematically evaluated (Reiner, 1990). Many of the selection procedures currently used in policing organisations are dated (Bradley, 1994; Olekalns et al., 1985; Sutton, 1992).

Scant attention appears to be paid to a number of factors which could potentially render police more vulnerable to traumatising life events (Olekalns et al., 1985). Such experiences might include a previous history of unresolved traumatisation and a family or personal history of emotional difficulties. There appears to be little formal recognition or monitoring of disguised traumatisation and co-existing problems for example, substance abuse, relationship problems, domestic violence, depression, suicidal or homicidal risk,

and over-reaction to threat cues (Olekalns et al., 1985). There seem to be few established methods for systematically identifying the more complicated personality and social changes that follow prolonged and repeated traumatisation for example, cynicism, coldness, detachment, violent and ill-directed outbursts of rage, multiple relationship difficulties, severe and chronic abuse of substances, somatisation, disassociation, pathological changes in identity, and repetition of self-destructive behaviour (Herman, 1992; 1993; Olekalns et al., 1985). In fact after the initial probationary period, there appears to be very little ongoing monitoring of physical and psychological health within many policing organisations. However, a cardiovascular risk evaluation programme has been running with Australian police in Victoria for several years and is showing some promising preliminary results (Baker Medical Research Institute, 1993). There seems very little doubt that continually exposing already vulnerable police to potentially traumatising experiences may only further confirm the predictive value of meanings and behaviours that had survival value during previous threatening events. Such ongoing trauma exposure is unlikely to be conducive to their recovery or optimal development (Kelly, 1955).

These important issues do not appear to inform the selection of police into specialist squads such as child sexual assault or homicide units or the more general promotional practices of many policing organisations. The promotional systems based on seniority have difficulties and some of those based on merit appear to have generated misinformation, high levels of dissatisfaction, low morale, and blocked career paths (Chilvers, 1993a). Some policing organisations have been accused of nepotism, inconsistency, and injustice and such promotional practices may increase the risk of resignations and medical retirements (Chilvers, 1993a). Police who want organisational recognition and monetary recompense for ongoing professional development and expertise appear to be limited to promotion within hierarchical, linear, and relatively inflexible organisational structures. Singular career paths into managerial and administrative roles frequently do not utilise developing operational expertise and may place talented police into jobs where they have very limited knowledge. The neglect of

options such as triangular career paths helps perpetuate a situation of unhappy operational police and unhappy and possibly inadequate police managers who may experience ongoing challenges to their sense of personal worth and their power to influence their occupational future (Cooper, 1993).

Education and training

There are two major traditions of police education and training namely, the military model and the discretionary model of police training.

The military model of police training has historical and current associations with the police acting as the coercive power of ruling governments. This model is premised on the physical subjugation and ultimate control of social unrest and requires the unquestioning and immediate obedience of operational police (Bradley, 1992; Jefferson, 1990; Witham, 1987). This immediate obedience is expected despite the discretionary power of operational police which is either not formally acknowledged, or is devalued by policing organisations and the police themselves (Blackler, 1990). The focus of this approach is on producing people who will be easily controlled, will enforce the law uncritically, and meet political and organisational needs. In such training there is a strong emphasis on the physical aspects of policing for example the use of firearms, military parades, ranks and uniforms, use of the right form, and expert driving skills (Blackler, 1990; Bradley, 1992; Jefferson, 1990; Witham, 1987).

The discretionary model of police training embraces contextualised and relevant learning progressing towards an understanding of the context, purposes, and processes of particular police activities within communities (Blackler, 1990). This model is premised on developing the professionalism of individual police to deal with complex and sometimes competing social demands. Proponents of such an approach are interested in facilitating the development of police with autonomy and initiative who can be trusted to act to the very best of their professional capability. Such police will be characterised by the reflective and thoughtful use of discretionary power to keep the peace, maintain order,

and meet the needs of communities (Blackler, 1990; 1994; MacDonald et al., 1990; Radelet, 1977; Schon, 1986; Witham, 1987)

There still seems to be a heavy fundamental reliance on the military model of police training in many policing organisations despite some changes in more recent years (Blackler, 1994; 1990; Jefferson, 1990; McGrath, 1990; PREP Course Documentation, 1993). Such a reliance seems to be the converse of conditions which are conducive to optimal development and to recovery from stressful life events (Kelly, 1955). There appears to be inadequate preparation for discretionary decision-making and much of the learning is decontextualised and didactic. This is despite empirical evidence that the police themselves have a distinct preference for experiential learning (Blackler, 1990; Fielding, 1988). Any contextualised learning opportunities that are now available are usually not ongoing and they generally do not address the inherent contradictions of policing and its moral dilemmas. In commenting upon a simulated policing patrol evaluation during initial police training Blackler (1990) says "1. Student focus is upon bureaucratic requirements, to the neglect of citizens' needs and safety, even of officer safety. 2. The students exhibit marked difficulty in carrying out connected sub-sets of operational skills. 3. students often failed to mobilise human awareness, interpersonal and communication skills, to an acceptable manner" (p. 3).

There have been very few evaluations of police training practices despite the constant community and political pressures for police efficiency (MacDonald et al., 1990; Reiner, 1990). There is empirical evidence that both basic and advanced training are stressful for some police (Alexander et al., 1993). There seems to be inadequate initial and ongoing training for police educators both within universities and specialised police training facilities (Blackler, 1994). This educational climate is captured by Blackler (1990) when he says "It is as if we aren't competent to teach what we should be teaching, so we teach something else" (p. 10).

There is also a distinct lack of clarity about what police professionalism actually means. This confusion is underpinned by the different goals and requirements of those

advocating military, discretionary, or mixed models of police education and training (Blackler, 1994; Bradley, 1987; Jefferson, 1990; McGrath, 1990). The fundamental assumptions and consequences of various alternatives for policing education and training are often not made explicit and their value for policing remains unclear. This has significant implications for the content and geographical location of courses, the methods of teaching utilised, decision-making about the nature of core competencies in policing, and the processes of initial and ongoing preparation of individuals for policing practice. There are still significant discrepancies between what is expected of operational police and their incomes and socio-economic status (Savery et al., 1993). Current practice in the education and training of police frequently involves separation and segregation of police for lengthy periods of time from their usual familial and social supports in the community which effectively removes them from their major sources of personal validation (Moore, 1988; Van Maanen, 1973).

Managerial styles

Some policing organisations continue to have centralised, hierarchical, and paramilitary power bases despite the nominal devolution of some managerial responsibilities (Blackler, 1993; Jefferson, 1990). There is limited research on the supervisory and management practices of police (Braithwaite, 1992). There is considerable evidence for a lack of effective consultation by some managers, limited provision for participation in decision-making processes by operational police, minimal support available from police supervisors, cumulative undervaluing of staff, autocratic management styles, insensitivity to dual career families, and a lack of child care flexibility or facilities (Allan & Davis-Meehan, 1994; Brown & Campbell, 1990; Coman & Evans, 1991; Cooper, 1993; Reiner, 1990).

Managerial styles in some policing organisations seem to be characterised by inadequate training, fear of mistakes, criticism, negativity, the seeking of scapegoats, and excessive attention to minutiae (Goodson, 1983). There is substantial empirical evidence

for the negative impact of such managerial styles on the occupational, personal, and social functioning of operational police (Alexander et al., 1993; Clarke, 1985; Crank & Caldero, 1991).

A study internally commissioned by the NSW Police Service in Australia measured changes in that police service within the previous twelve months (Aptech Australia, 1993). The results show no measurable organisational change except for the conditions of very senior police. The study was a repeated measures investigation of 500 randomly selected NSW police and had a response rate of 88%. This study demonstrated that police do not feel they can believe anything the police organisation tells them and that it does not meet their financial or other needs. There was a general sentiment that individual feelings cannot be expressed without fear of reprisal from police management and that positive or negative feedback on performance is not freely given. The police in this study do not feel that they understand or share in the direction of the police organisation. They feel that decisions are not made which support the organisation's expressed goals and that they have little ownership of the decisions which directly affect them. Some of the police in this study feel they are not valued and that information is not freely exchanged. Police believe crises are not handled openly and the organisation does not adapt to change easily or support innovation. There is general dissatisfaction among police sergeants which is of concern given their operational leadership and supervisory roles (Aptech Australia, 1993). Many of the questions in this study created a potential for response bias in favour of positive organisational change which makes these findings even more meaningful. The results still need to be interpreted cautiously because there were no appropriate control or comparison groups included in the research design.

The weight of evidence appears to indicate that the managerial styles displayed within some policing organisations may not be validating, safe, empowering, or encouraging of initiative and experimentation with new ways of achieving community and organisational goals. There seems to be little tolerance or scope for normal human mistakes to be made by police without severe consequences. Some managerial styles may

represent ongoing challenges to the identity, worth, and power of individual police to influence their occupational destiny.

There is some evidence for the positive effect of more progressive managerial styles on police stress. Evans (1993) reports that police experiencing what they perceived as high levels of supervisor support, low role ambiguity, and high satisfaction with the degree of organisational change reported lower stress levels.

Job design

Various aspects of the job design of operational policing have been linked to less than optimal functioning. The issue of the forced transfer of police has generated significant industrial controversy (Tunchon, 1993). Organisational directives to move house were rated as stressful more frequently than any other aspect of police work in a recent study (Alexander et al., 1993). There is also other evidence for the negative impact of forced transfers (Cantor et al., 1994; Davidson & Veno, 1984; Toohey, 1993).

Long working hours, sharp fluctuations in work load, repetitive work, excessive demands, lack of appropriate equipment and resources, unpredictability, complexity, minimal control of occupational demands, role ambiguity and conflict, and shift work have been associated with stress reactions and ill-health in police (Brown & Campbell, 1990; Coman & Evans, 1991; Cooper, 1993; McNulty, 1984; Spielberger et al., 1981). Working shifts has also been demonstrated to have a harmful effect on the relationships police have with their marital partners and their children (Alexander et al., 1993).

Accountability

Police services have always been the subject of Royal Commissions and judicial inquiries (Avery, 1981; O'Connell, 1994). Such investigations generally have broad terms of reference, claim to focus on organised or systemic corruption within policing organisations, and are very time-consuming, expensive, and stressful for individual

police. They seem to be often characterised by limited identification and understanding of the broader political and organisational issues which influence policing and police corruption. There is frequently no systematic evaluation of the effectiveness of various internal and external regulatory bodies and anti-corruption strategies created in response to their recommendations. There is often insufficient consideration given to the organisational and human resource implications of the trend towards greater regulation and legislatory control of police. Organisational responses to such inquiries are often characterised by damage control and the scapegoating of individual police. Policing unions usually pursue reactive roles with limited legal and welfare advocacy for individual police members (Jefferson, 1990; O'Connell, 1994).

Unfortunately, the processes of internal investigation and litigation in policing seems to be characterised by a climate of police being guilty until proven non-convictable. Policing organisations seem to have demonstrated limited consideration and commitment to informal resolution of complaints against police despite empirical evidence that being the subject of a complaints investigation is likely to be stressful for police (Alexander et al., 1993; Jellett et al., 1994; Scogin & Brodsky, 1991). A recent report found there was an increased number of police suicides during such inquiries (Cantor et al., 1994). The long delays experienced during formal investigations are sometimes of questionable necessity given viable and less expensive alternatives (O'Connell, 1994).

Success in operational policing is inappropriately evaluated in terms of the percentage of crimes cleared by arrest (Braithwaite, 1992). Consequently, the peace-keeping, order maintenance, and other preventive functions of the policing role are devalued. There are few alternate criteria for successful policing and the assessment of job performance is inordinately influenced by the number of arrests made by individual police. This means that important community roles such as the sensitive questioning of victims of crime or innovative juvenile justice programmes generally do not count in formal appraisals of policing performance (O'Connell, 1991).

Clearly the current processes of accountability within some policing organisations appear to help provide a context which is less than favourable to optimal functioning and to recovery from traumatising life events. Police are likely to have many of their peace-keeping functions devalued and to face the constant threat of having their every action subject to close scrutiny even when some behaviours may have occurred under traumatic circumstances.

Gender issues

Policing is historically and currently a very male-dominated profession. Female police were occupationally segregated from their male counterparts until the mid seventies in Australia and their work was mainly concerned with other women and children (Sutton, 1992). There is a glass ceiling for the vast majority of police women to reach senior positions of authority and power and minimal consideration of permanent part-time and other flexible work options without significant and unarticulated career sacrifices (Cooper, 1993; Nixon, 1993; Sutton, 1992). There is evidence that many women police face disapproval from their family and friends for their decision to enter policing (Raue, 1989). Women also report experiencing subtle discrimination upon returning from maternity leave (Austin, 1993). Female police still earn significantly less than their male counterparts (Sutton, 1992). Gender-based assessments of the ability to handle the physical and emotional demands of policing are made by fellow police and the public despite consistent evidence that there is no such relationship (Sutton, 1992). There seems to be a distinct lack of positive mentoring experiences for female police and an ongoing practice of measuring the job performance of both women and men by extremely limited criteria (Austin, 1993; Braithwaite, 1992; Sutton, 1992).

Policing organisations are accountable for their actions. Such accountability is underwritten by legislative and administrative responsibilities to treat female employees equally in all respects. Nonetheless, there is ongoing evidence of sexual harassment and the perpetuation of stereotypical myths about occupational capabilities based on gender

(Brown & Campbell, 1991; Jones, 1986). There also appears to be entrenched systemic bias in the occupational deployment of police women resulting in restrictions in their working experiences (Walklate, 1993). Women police have been more willing to report stress consequences than men in some studies (O'Brien & Reznik, 1988; Pendergrass & Ostrove, 1984). There is evidence that female police of all ages are at greater risk than the general population for abusing alcohol and tobacco (O'Brien & Reznik, 1988).

There is very little systematic research on women in policing. This is particularly true in Australia (Sutton, 1992). There are moves in some policing organisations towards gender balancing in recruitment, training, and promotion (Slattery, 1993). The recent review of Federal Law Enforcement in Australia recommended that gender inequities at senior levels be redressed (A. F. P. News, 1994). There have been steps towards part-time work options but they are not fully implemented and there may be some hidden costs such as the exacerbation of the lack of equal career development opportunities for women (A. F. P. Annual Report, 1992-1993; NSW Police Annual Report, 1992). There is some recent evidence demonstrating that some police men perceive police women as competent (Lyons, 1993) and there is a current investigation being undertaken into how female police view their own roles and development (Sutton & Heard, 1994). Despite legislative attempts to impact upon gender inequalities, there are still enormous structural differences between the relative power of men and women in policing organisations (Sutton, 1992). Women in policing clearly experience particular stressors simply by virtue of their gender.

Police culture

The concept of police culture is ill-defined, complex, and circular. It has been suggested that police culture survives because of its psychological fit with the realities of operational policing and it has been used as a self-contained explanation for just about every kind of organisational and personal deficit imaginable (Reiner, 1985; Skolnick, 1966).

Sociologists have described police culture both in terms of its socialisation processes and its formal and informal rules (Banton, 1964; Bittner, 1967; 1970; Chapman, 1971; Ericson, 1982; Klockars, 1980; 1985; Muir, 1977; Neiderhoffer, 1967; Punch, 1979; Reiner, 1985; Skolnick, 1966; Van Maanen, 1973). It is suggested that the structural inequities of the broader society are seen through the peculiarities of policing environments resulting in what is called a police culture (Reiner, 1985). Various stage models have been used to describe police socialisation (Feldman, 1976; Van Maanen, 1975). Van Maanen (1973) developed what is still the most comprehensive descriptive analysis of police socialisation. He suggested that the recruit socialisation process results in a "psychological contract linking the goals of the individual to the constraints and purposes of the organisation" (p. 389). Van Maanen also emphasises the social pressure placed on police to show no vulnerability when exposed to potentially traumatising life events and suggests that it is dealing successively with these stressors which may form the basis of informal operational status among work peers.

There is empirical evidence indicating that police culture is not conducive to self-disclosure or the expression of feelings. Alexander et al., (1993) found there were two methods most frequently used by police when they were off duty and coping with work induced stress. These were taking work home or thinking about work when at home, and keeping things to themselves. Resorting to outside help is not a method that is used frequently by police at the present time whether that assistance be spiritual, medical, or psychological (Alexander et al., 1993; Westerink, 1990). These findings are of particular concern given that self-disclosure has been demonstrated to not only ameliorate some of the negative effects of traumatisation but to result in positive feelings and mental health in some trauma survivors (Kahana et al., 1987).

Sequelae of Stress in Police

The methodological limitations of research into police stress are especially apparent when examining studies investigating its consequences. There are few systematic investigations and many conclusions which frequently go beyond the available data. Fundamental assumptions are often not made explicit and theories do not drive research in this area. Research programmes are not well informed by the available literature and knowledge is not cumulative. Police stress is inherently complex and deciding between the relative influence of personal, occupational, and recovery factors has been the focus of many investigators who appear to be implicitly testing either nurture or nature hypotheses. A number of findings will be reviewed but unless otherwise specified, they must be treated with caution. Most studies looking at the relationship between police stress and deleterious psychological and physical problems have proposed occupation as a single explanatory variable. Investigators have frequently ignored or not accounted for potentially confounding influences. This is not sound research and not surprisingly the results are often mixed. Despite these problems, there is clear evidence for less than optimal personal, occupational, and social functioning in some but not all police.

Physical Health Problems

Police have been found to suffer from headaches, backaches, stomach aches, poor appetite, sleep problems, nightmares, muscle cramps, diabetes, respiratory disorders, heartburn, hypertension, heart disease, obesity, circulatory disorders, hay fever, repeated skin disorders, ulcers and other digestive disorders, thyroid disorders, and poor nutrition. Police have also been found to experience higher rates of illness and injuries, be admitted to general hospitals more frequently, and to die more prematurely than people from other occupations (Davidson & Veno, 1980; Fell et al., 1980; Gilbert, 1990; Jacobi, 1975; Kroes et al., 1974; Lester, 1981; O'Brien & Reznik, 1988; Pilotto, 1990; Silbert,

1982). Other researchers have found few differences between police and people from other occupations when measuring such parameters (Ellison & Genz, 1983; Hurrell & Kliesmet, 1984).

Suicide

Police have been found to suicide more frequently than members of some other occupations (Davidson & Veno, 1984; Fell et al., 1980; Lester, 1981; Neiderhoffer, 1967; Somodevilla, 1978; Terry, 1981). In contrast, other studies have not demonstrated higher suicide rates among police (Cantor et al., 1994; Dash & Reiser, 1977). It has been convincingly argued that police may be at particular risk of successful suicide because of their immediate access to lethal means. Attending police may also under-report suicide given the relative social and monetary benefits for surviving family members if the death is reported as accidental (Kroes, 1976). There is substantial national and international variation in the accuracy of suicide documentation among police and very small samples in most studies (Cantor et al., 1994; Terry, 1981).

Depression and Anxiety

Alexander and his colleagues (1993) cite evidence that the rate of depression among police is higher than the general population. Depression was predictive of more days off work and more episodes of absenteeism. Pathologically depressed or anxious male constables were distinguished from their less troubled colleagues by greater overwork, more exposure to physical danger, less personal recognition, and greater frustration from perceived unnecessary obstacles at work. Depressed and anxious police perceived many occupational experiences to be more stressful than their colleagues (Alexander et al., 1993). Anxious male constables also reported having greater contact with the public. Alexander et al., (1993) found that overall 14% of all male officers and 24% of all female police, obtained a pathological anxiety score. These findings are of concern because this

study is relatively more systematic. There is a strong association between depression and suicide (Tanner & Ball, 1989). Diagnosable depression and Posttraumatic Stress Disorder (PTSD) frequently co-exist for the same individual (Davidson et al., 1991; Green et al., 1992; Kulka et al., 1990; Resick, 1993; Saunders et al, 1992; Shore et al., 1989; Sutker et al., 1994; Yehuda et al., 1994). Anxiety disorders also frequently occur concurrently with PTSD (Davidson et al., 1991; Green et al., 1992; Shore et al., 1989).

Substance Use

There is substantial evidence of substance abuse among police (Gilbert, 1990; Hurrell & Kroes, 1975; Pilotto, 1990; Territo & Vetter, 1981) and some for the relationship between stress and substance abuse in police (Alexander et al., 1993; Lee & Stoneham, 1994). There is very strong evidence for co-morbidity between substance abuse and PTSD (Boudewyns et al., 1991; Davidson et al., 1991; Green et al., 1992; Kulka et al., 1990; Shore et al., 1989; Sutker et al., 1994). In considering both alcohol and tobacco consumption, Davidson and Veno (1980) found that the levels of intake were lower among police than the general population. However, of those Australian police who did drink or smoke, more of them were medium or heavy users (Davidson & Veno, 1980). O'Brien & Reznik (1988) studied over 1000 Australian police of all ages and ranks. They had a response rate of 74%. The alcohol and smoking consumption of female police was found to be higher than the general population of females, across all ages. Male police drank more alcohol than the general population of males, for most ages (O'Brien & Reznik, 1988). In recent work with Scottish police those constables at greater risk of alcohol abuse perceived the pressure for results, being recalled when off duty, public scrutiny whilst off duty, and administering first aid as more stressful than low risk consumers (Alexander et al., 1993). Using a within subjects design Beutler and colleagues (1988) found that by the end of two years police service, police showed significant increases on a measure of vulnerability to addiction, compared with their baseline scores (Beutler et al., 1988).

Police Families

Police stress has been associated with social isolation, separation and divorce, and other disruptions in policing families (Davidson & Veno, 1984). There is evidence that police marriages may be at higher risk of disruption in the first few years compared to population samples (Davidson & Veno, 1980). The evidence for higher divorce rates among police is equivocal with some investigators claiming that divorces occur no more frequently in police families (Neiderhoffer & Neiderhoffer, 1978; Whitehouse, 1965) and others finding the opposite (Hurrell, 1977; Stratton, 1976). It is often impossible to determine from the relevant studies whether the divorces occurred before or after the person entered policing.

There is some evidence for increased family conflict and social isolation among police families (Davidson & Veno, 1984). Lidgard (1986) found significant differences between training and serving police in their perception of families, marriages, and wives. Serving police reported less happiness, stability, and contentment, and had more difficulties with work schedules and time, finances, and communication. Alexander et al. (1993) found that police spouses were concerned about their partner's psychological or physical health. A significant minority of spouses scored above the pathological cut-off point on anxiety and depression scales. Police may also find it very difficult to benefit directly from social support (Davidson & Veno, 1980; Olekalns & McNulty, 1984). Shift work and negative social images of police have been identified as creating a greater likelihood of social isolation among police (Olekalns & McNulty, 1984).

In a well-designed study, Neidig et al. (1992) attempted to determine the prevalence and correlates of marital aggression in law enforcement families. The obtained rates of violence were highest for law enforcement couples compared to couples in the military or in a general population sample. When only the severe violence items were considered they were highest for military participants. The highest rates of physical aggression in law enforcement couples were found in younger subjects, in those married

one to four years, among those police experiencing marital separations, in those assigned to narcotics and uniform duties, among those working shifts, and in those taking either no leave or excessive leave. The risk of marital violence cut across all ranks. Approximately 40% of these police reported at least one episode of domestic violence in the previous year. Severe violence was reported in 8% of male police. Spousal reports were consistent with these findings.

Occupational Indicators

Our understanding of the relationship between occupational indicators and police stress is limited by the lack of comprehensive record-keeping by either policing organisations or policing unions. The systems which do exist are often not informed by the latest knowledge in computer software and technology. There is little systematic research into this issue.

Work performance

Some studies indicate that stress in police may result in inefficient job performance, poor morale, unnecessary contact with the public, fatigue whilst working, sleeping on duty, diminished productivity and quality of work, disrupted work flow, increased staff turnover, industrial sabotage, and early retirement (Kroes, 1976; Savery et al., 1993; Toohey, 1993). One study suggests that police are more efficient and confident when exposed to stressors for relatively brief periods of time (Davidson & Veno, 1978).

Job dissatisfaction and organisational commitment

Alexander et al. (1993) demonstrated that very dissatisfied police were more anxious and more likely to take time off than their more satisfied peers. Very dissatisfied police perceived numerous occupational experiences to be more stressful than their satisfied

peers. Constables who were dissatisfied were distinguished by greater under-work, higher exposure to physical danger, less recognition, and more frustration by perceived unnecessary obstacles at work.

Savery et al. (1993) found that stressed police had lower levels of job satisfaction, were less positive about their futures, and less committed to the relevant policing organisation. Savery (1991) examined the relationship between organisational commitment, job satisfaction, and a number of background variables. The results indicated that organisational commitment was low. The more satisfied police were more committed to the organisation. The duties performed, age, gender, and education level were not related to organisational commitment. Police who had partners with positive views had more organisational commitment as did those police who expected to stay in policing.

Lee & Stoneham (1994) in their study with Canadian police suggest that overall commitment and satisfaction were good. However, higher rates of perceived and experienced stress due to support and supervision concerns, were associated with lower job satisfaction.

Absenteeism

Several studies demonstrate an association between police stress and absenteeism (Alexander et al., 1993; Savery et al., 1993; Toohey, 1993) and the taking of sick leave appears to be a risk factor for suicide among some police (Cantor et al., 1994).

Summary and Conclusions

There is now substantial interest in the difficulties some police experience with stressful life events but the currently available theories and research bearing on these issues have

some limitations. Sociological and psychological formulations associated with police stress have identified important issues, but they are largely descriptive rather than explanatory. Most have not been empirically evaluated. Some of these descriptions of police have often resulted in simplified stereotypes which deny individual complexity and uniqueness and perpetuate generalisations about the way police think, act, and feel at various stages of their careers. Much of the research into police stress is not theory-driven. If theories are considered at all, they are often incorporated into research programmes as loose retrospective rationalisations of findings. Most studies are not well informed by the available literature on police stress and so do not result in cumulative knowledge. Research into police stress has often been conceptually confused, unsystematic, and oversimplified. This limits the comparability, generalisability, replicability, and relevance of many findings. Stressors and their sequelae have frequently been compartmentalised as if they occur in isolation from the police person who is experiencing them. Fundamental systemic issues in some policing organisations appear to provide an occupational milieu context which may be unfavourable to optimal adult development and for recovery from traumatising events. The relationships between the police and the community have been historically adversarial. There are often conflicting agendas between police and the criminal justice system. Cross-examination in court may help maintain a police person's preoccupation with a traumatising event and represent a threat to how individual police may view themselves, their world, and their future. There appear to be significant structural and fundamental problems in the way some policing organisations select, train, and promote their employees. Inappropriate managerial styles, aspects of job designs, and current systems for police accountability may have negative consequences for some police. There is evidence of entrenched gender bias in some policing organisations and there are disturbing consequences for a police culture that does not encourage self-disclosure or the expression of feelings. Despite significant methodological problems, the weight of evidence appears to indicate that police stress may be associated with physical health problems, suicide, depression, anxiety, substance abuse, disruption in police families, domestic violence, poor work

performance, job dissatisfaction, diminished organisational commitment, and absenteeism.

There appears to be a need for more comprehensive theoretical formulations to explain the process of relationships between personal strengths and vulnerabilities, stressful life experiences, recovery environments, mental health outcomes, and the ongoing personal and professional development of individual police. Such theoretical models must be readily empirically falsifiable. Policy decisions should be informed by such conceptualisations. Current decision-making about the health and welfare of some police employees appears to rest on tenuous grounds.

In the next chapter I justify my decision to focus on traumatic stress reactions in police rather than other forms of pathology. I will introduce the study of traumatic stress reactions by exploring its history and political context and some of its many unresolved issues. Information on the diagnostic criteria, prevalence rates, co-morbidity, and chronicity of PTSD will be provided. This discussion will provide the background for a more detailed analysis of previous contributions to the understanding and treatment of traumatic stress reactions in police.

Chapter Three

Posttraumatic Stress Disorder: An Introduction

Posttraumatic Stress Disorder: An Introduction

In this chapter I will justify my decision to focus on traumatic stress reactions in police rather than other forms of pathology. The historical and political context of the study of traumatisation will be then be briefly reviewed. The current diagnostic criteria for PTSD will be described (American Psychiatric Association, 1994). I will discuss some unresolved issues in our understanding of traumatisation, difficulties which have been found to occur concurrently with PTSD, and the persistence of PTSD. The prevalence of PTSD in both general population studies and high risk groups will be described. I will then explore in further detail previous contributions to our understanding of traumatic stress reactions in police, including current efforts to prevent and treat debilitating consequences. Personal, trauma, and recovery variables which have helped explain the onset and severity of PTSD will then be summarised.

Why Trauma?

The decision to focus on traumatic stress reactions in police rather than other forms of pathology was taken for a number of reasons. Firstly, there appeared to be a need for a theoretical model to begin to explain the process of relationships between personal, trauma, and recovery variables. Most of the empirical research on trauma has been atheoretical. Investigating trauma in police provided the opportunity to test aspects of a new theoretical model of traumatic stress reactions. Secondly, there has been a distinct predominance of retrospective studies in the traumatic stress area and the policing population provided the opportunity to undertake a systematic prospective study of traumatic stress reactions. Thirdly, there is recent evidence that traumatisation may be central to many other forms of psychopathology (Gunderson & Sabo, 1993; Herman, 1992; van der Kolk et al, 1992; Wilson, 1989). Finally, the investigation of trauma in

police provides relative ease of measuring stressors and reactive processes against clearly defined criteria (American Psychiatric Association, 1987; 1994).

Historical and Political Context of the Study of Traumatisation

History has seen periods of vehement societal denial of the devastating impact traumatisation can have on individuals, organisations, and communities. When such negative sequelae are recognised, they are usually conceptualised within frameworks that focus on the deficits, weaknesses, and the erroneous assumptions of trauma survivors rather than their strengths, courage, creativity, and resources. It is hardly surprising then that: "far too often secrecy prevails, and the story of the traumatic event surfaces not as a verbal narrative but as a symptom" (Herman 1992, p. 1).

The minimisation and denial of traumatisation has occurred in an historical and political context that continues to send young men and women, and even children to war; that still institutionalises the subordination of women and less powerful racial and ethnic minorities; and that allows gross structural inequities where many people live in poverty with inadequate housing, nutrition, medical care, or educational opportunities, while a decreasing minority prosper. The undermining of the credibility of the traumatised person has flourished in a medical community which ostracised Freud for his original trauma hypothesis, where he clearly indicated that sexual abuse in childhood was a precipitant for psychological difficulties. Society preferred Freud's repudiation which completely denied the reality of child sexual assault and relegated it to the world of fantasy (Freud, 1896; Herman, 1992). These replacement theories with their almost exclusive interest in pre-morbid functioning, completely dominated the creation of the diagnostic criteria for stress responses in the two versions of the Diagnostic and Statistical Manual of the American Psychiatric Association prior to 1980 (Wilson, 1994a). Comprehensive theoretical formulations and systematic scientific investigations of traumatic stress reactions have also been hindered by the ongoing conflict for dominance between

authentic scientific endeavour and some institutionalised ideologies. This has been particularly apparent when such studies provide rational explanations for demonic possession, witchcraft, exorcism, hallucinations, disassociated identities, nightmares and flashbacks to horrific experiences, and psychiatric labels.

Instead, there has been a strong historical and still prevalent focus on the moral character or personal inadequacies of the trauma survivor. A war veteran or police officer who expresses powerful feelings except anger is often seen by colleagues as an embarrassment, presumed to be fundamentally inferior or irrational, and if persistent in complaining of debilitating difficulties, is frequently labelled a malingerer. Traumatised people have often experienced abusive secondary victimisation characterised by cajoling, minimisation, shaming, threats, and punishment (Herman, 1992; Higgins, 1994).

Despite this invalidating context, some survivors of natural disasters and various traumatising events created by human beings have found the courage and will to tell, and keep telling their stories, until someone listens. Some of these survivors and their supporters have become politically organised and active. This has occurred in many guises such as feminist collectives, veterans associations, anti-war protest meetings, victim's support groups, and emergency worker unions. These groups have precipitated and mobilised the impetus for a more validating environment for some trauma survivors. This has included naming and challenging fundamental inequities in power and resources which increase the likelihood of people being traumatised, the development of empowering and safe treatment options, and the provision of monetary compensation when this is appropriate (Herman, 1992).

This context has been the background for a proliferation of published literature on traumatic stress reactions in recent years. As Green (1994) reports: "In the last several years there have been about 600-700 new articles on the topic of PTSD alone" (p. 341). The initial research focussed on situations such as war, concentration camp internment, and large scale natural disasters involving horrendous devastation and loss. In these early studies, individual differences and more specific characteristics of traumatic events were

largely ignored. Many events are now seen as potentially traumatic for example, domestic violence, adult and child rape, sadistic organised torture, technological disasters, infection with HIV, exposure to radiation or toxic contamination, and some of the situations encountered in the normal occupational duties of police and other emergency personnel (Green, 1993).

Real awareness of traumatisation is a very frightening business because it means facing human vulnerability and frailty. It involves recognising our human capacity for evil, greed, betrayal, and horrific abuse of power (Herman, 1992). Such an acknowledgment also involves individuals, organisations, and societies taking responsibility for preventing the occurrence of traumatisation where this is possible and for creating conditions which are optimal for recovery.

The Diagnosis of PTSD

Kelly's (1955) description of a diagnosis was that it was: " all too frequently an attempt to cram a whole live struggling client into a nosological category" (p. 775). PTSD is a medical diagnosis and the use of this term has legal and compensation implications. The use of a nosological category has placed traumatic events and their consequences within a scientific classificatory model. The diagnostic criteria for PTSD includes a definition of a traumatic event. A traumatic event must involve actual or threatened death, or serious injury to self or others. In addition, it must include a personal response of intense fear, helplessness, or horror. Categories of intrusive, avoidance and numbing, and heightened arousal symptoms are described. Symptoms from these categories must occur in specific combinations, last for at least a month, and significantly disrupt psychosocial functioning following a traumatic event (American Psychiatric Association, 1994).

The diagnostic criteria for PTSD have severe limitations and they suffer from various anomalies (Herman, 1992; 1993; March, 1993; Oksana, 1994). Classification

systems inspired by the medical model have sometimes encouraged a view of traumatic stress reactions where the survivor is seen as sick, and needing to be cured, rather than as playing a critical role in their own healing process. Such formulations seem to ignore the multiplicity of personal, trauma, and recovery factors which influence the ongoing emotional and physical health of individuals (Bannister, 1985; Winter, 1992). The diagnostic criteria for PTSD are included in this study for pragmatic reasons. First, the use of established diagnostic criteria will allow for this empirical evaluation of a personal construct model of traumatic stress reactions to be compared with the many other studies that have specifically investigated PTSD. Second, the use of PTSD and trauma symptoms as outcome variables, quantifies the negative sequelae of trauma exposure in ways which are measurable.

Some Unresolved Issues in the Study of Traumatisation

Despite the long history of interest and investigation into trauma there are still no adequate theoretical models to explain the process of relationships between personal, trauma, and recovery factors. Research is generally not informed by attempts to explain the processes involved in traumatisation, the substantial individual differences in response to similar traumatic events, the constellation of positive and negative sequelae following traumatisation, or other relevant research (Foa & Riggs, 1993; Jones & Barlow, 1990). Baum and his fellow disaster researchers (Baum et al., 1993) concur with this view when they say: "Theory-driven research, or research which attempts to identify mechanisms, predictors, and mediators or responses to trauma, is stronger and more likely to yield interesting or useful findings than is research which is purely descriptive. Not only does theory allow one to focus and refine measurement of the phenomenon of interest, it also guides decisions about subject sampling, selection of control or comparison groups, and other procedural problems. However, neither the literature on disasters nor the smaller but growing literature on traumatic stress syndromes provides easily derivable or testable conceptual frameworks" (Baum et al., 1993, p. 127).

There has been considerable controversy in the literature concerning what constitutes a traumatic stressor. Some arguments are associated with whether a traumatic stressor is unique because of its magnitude or its nature. There are difficulties in determining a cut-off between extraordinary and ordinary events, and deciding whether such events are continuous or discontinuous. One solution has been to incorporate the person's own evaluation of the impact of the stressor into the definition. This has been done in the DSM-IV diagnostic criteria for PTSD (American Psychiatric Association, 1994; Green, 1993). Although, a persuasive case can be made for such an approach (March, 1993), the DSM-IV criteria for PTSD may create problems in studying populations where it is not occupationally sanctioned to acknowledge feelings of intense fear, helplessness, and horror for example, in police or war veterans. This description of a traumatic stressor may also be inappropriate for all trauma survivors with PTSD because by definition they are emotionally numb and not in touch with their feelings.

The longitudinal course or natural history of PTSD is not well understood and little is known about traumatic stress reactions in different age groups especially children. There have been few systematic studies into the sequelae of prolonged and repeated traumatisation although there is substantial historical and clinical evidence to suggest that the diagnostic criteria for PTSD may be very inadequate in such cases (Herman, 1992; 1993; Oksana, 1994; Smith, 1993).

There are very few controlled prevention and intervention studies into PTSD (Solomon et al., 1992). We do not know what happens to a person's identity, their sense of worth, their constructions of reality, or their perceptions of their personal power following traumatisation. We do not know a great deal about how a traumatised person might feel, think, or behave. We do not understand the nature of secondary victimisation following traumatisation nor a lot about the characteristics and role of favourable recovery environments. We are unclear about the role and processes of confronting traumatic memories and the centrality of their influence on mental health outcome. Very little is known about survivors who make exceptional adjustments or about how traumatisation

impacts on life course development. We have only minimal information on what it is like to be the partner or the child of a traumatised person.

Until we move beyond descriptive analyses towards more explanatory theoretical formulations of traumatic stress reactions which can be empirically tested, we are very unlikely to answer these important questions.

The Persistence of PTSD

There have not been many longitudinal studies of PTSD and information on its persistence comes indirectly from studies that have compared lifetime and current prevalence rates (Kulka et al., 1990; Speed et al., 1989), retrospective studies employing repeated measures at various times following exposure to a traumatic event (Creamer et al., 1989; Green et al., 1990; Op den Velde et al., 1993), and several prospective studies (Grunert et al., 1992; Perry et al., 1992; Roca et al., 1992; Rothbaum and Foa, 1993; Rothbaum et al., 1992; Solomon et al., 1989). Some studies have shown an increase in trauma symptoms over time (Perry et al., 1992; Roca et al., 1992).

A series of pioneering Australian studies demonstrated that 14% of a group of firefighters exposed to a potentially traumatising event for approximately 16 hours had PTSD after 29 months (McFarlane, 1986). Importantly, McFarlane (1988; 1989) also found that PTSD may be delayed or acute in presentation. PTSD might remit or persist as a chronic form or it might fluctuate in intensity, resolve, or even recur (Blank, 1993; McFarlane 1988; 1989).

With a few exceptions (Centre For Disease Control, 1988; Kilpatrick & Resnick, 1993), the evidence convincingly indicates that about half those people who are initially diagnosed with PTSD after prolonged and complex trauma will continue to reach diagnostic criteria for long periods of time and sometimes for decades (Blank, 1993; Green, 1994).

Co-morbid Conditions

Many trauma survivors who are diagnosed with PTSD appear to concurrently meet the criteria for other diagnosable psychiatric conditions (Green, 1994; Keane & Wolfe, 1990). These co-morbid conditions do not occur in all studies but the most common include substance abuse (Boudewyns et al., 1991; Davidson et al., 1991; Green et al., 1992; Kulka et al., 1990; Shore et al., 1989; Sutker et al., 1994), depression (Davidson et al., 1991; Green et al., 1992; Kulka et al., 1990; Resick, 1993; Saunders et al., 1992; Shore et al., 1989; Sutker et al., 1994; Yehuda et al., 1994), various diagnoses associated with social adjustment (Kulka et al., 1990; Resick, 1993); other anxiety disorders (Davidson et al., 1991; Green et al., 1992; Shore et al., 1989); phobias (Davidson et al., 1991; Green et al., 1992; Saunders et al., 1992; Shore et al., 1989); and obsessive compulsive disorder (Davidson et al., 1991; Helzer et al., 1987; Saunders et al., 1992; Shore et al., 1989). People with PTSD have also been found to commit suicide eight times more frequently than those without PTSD even after the influence of depression is statistically controlled (Davidson et al., 1991). People diagnosed with PTSD also appear to have more difficulties in their sexual functioning (Resick, 1993) and more physical problems (Davidson et al., 1991).

The Prevalence of PTSD

Attempting to review the prevalence literature on PTSD is an onerous undertaking for several reasons. The sheer magnitude of the task is great. There are now a very large number of studies documenting the presence of traumatic stress reactions across a range of very disparate populations and traumatic events. The prevalence rates for PTSD also vary according to the sensitivity, specificity, validity, and reliability of the assessment instruments used. Numerous studies comment on PTSD prevalence rates or identify traumatised groups without using structured clinical interviews to arrive at a diagnosis.

There is very wide variation in the outcome measures used. The diagnostic criteria for PTSD differ across studies, partly because of the regular revisions of such criteria in recent years, and the time involved to develop psychometrically sound assessment instruments with which to complete systematic epidemiological studies (American Psychiatric Association, 1980; 1987; 1994). Finally, studies of prevalence vary substantially in their methodological sophistication. Most studies are retrospective rather than prospective. They often use small non-representative or clinical samples. Even those studies using more powerful sampling strategies are often characterised by very low response rates. There are frequent difficulties in defining research populations and marked variations in trauma exposure and time variables. There are problems trying to apply experimental control to naturalistic settings, in obtaining pre-trauma baseline data, and gaining full access to traumatised populations. Unfortunately, there is still limited use of control or appropriate comparison groups and few attempts to systematically account for potentially confounding influences on mental health outcome. Some studies are simply broad descriptive evaluations of the impact of traumatic events on health and well-being. Many studies specifically look at mental health and correlates of traumatisation. Fewer studies have focussed on PTSD, and a smaller number still, have attempted to systematically examine the relationships between personal, trauma, and recovery factors on individual trauma survivors (Baum et al., 1993; Green, 1993; 1994; Kulka & Schlenger, 1993; Raphael & Meldrum, 1993; Rowan & Foy, 1993). All these issues limit potential comparison, replication, and generalisation of many findings. There is clearly a need for core methodology in all areas of the epidemiology of traumatisation as has been described for the study of disasters (Raphael et al., 1989).

In this section, prevalence studies into traumatisation will be often presented in tables. The studies will be discussed according to the categories of general population, war and civil violence, disasters, individualised traumatic violence or injury, emergency work, and police. This review will not be exhaustive and will focus on more recent studies especially those concerned with adult trauma survivors. Only a few important

relevant studies will be selected for further comment. Previous contributions to our understanding of traumatic stress reactions in police will be discussed in greater detail.

General Population Studies on PTSD

General population studies of traumatic stress reactions are relatively rare and demonstrate lifetime prevalence rates of PTSD ranging from 1% to 9% (see table 3.1). The two investigations (Davidson et al., 1991; Helzer et al., 1987) utilising the older version of Diagnostic Interview Schedule for PTSD (Robins et al., 1981) have been criticised because of the insensitivity of this assessment instrument which has been shown to miss even very severe cases of PTSD (Blank , 1993; Kulka et al., 1991). There are no Australian population studies on the epidemiology of PTSD, although one Australian study investigated the epidemiology of general mental health (Clayer et al., 1991).

Table 3.1: The Prevalence of PTSD in the General Population

Study Authors	Community	Sample Characteristics	Type of a Structured Diagnostic Interview for PTSD	Lifetime prevalence of PTSD
Helzer et al., 1987	St Louis, USA	3004 by stratified area sampling	DIS DSM-III	1%
Davidson et al., 1991	North Carolina, USA	2985 by stratified area sampling	DIS DSM-III	1.3%
Breslau et al., 1991	Detroit, USA	1007 by random sampling of young adults	DIS DSM-III R	9%

War and Civil Violence

We have learnt a great deal about traumatic stress reactions from survivors of war and civil violence (Herman, 1992). Investigations into these experiences have been separated into three tables: 1) Traumatisation associated with World War II; 2) Traumatisation in Vietnam veterans; and 3) Traumatisation associated with other wars and civil violence (see Tables 3.2, 3.3, 3.4, respectively). There are now two systematic national studies, one American and the other Australian, that do not rely on generalising their findings from treatment seeking veterans. They both convincingly demonstrate that some Vietnam veterans still have significant difficulties associated with their war experiences.

Kulka et al. (1990) in their national Vietnam veterans readjustment study (NVVRS) investigated a nationally representative community sample of over 1500 American Vietnam veterans. In the most methodologically sophisticated and systematic study of the epidemiology of PTSD ever conducted, these workers clearly identified their target population; identified and studied relevant comparison groups; used sensitive, reliable, and valid assessment procedures; and collected comprehensive data about the incidence, prevalence, and effects of PTSD and related psychological problems. They compared Vietnam veterans who actually served in the theatre of war, to groups of military personnel who did not serve in the Vietnam war theatre, and to civilians. Kulka and his colleagues investigated risk factors for PTSD, and identified psychological, social, and physical difficulties associated with war trauma. The NVVRS study demonstrated a current prevalence of PTSD of 15.2% in male and 8.5% in female Vietnam veterans a decade and half after the cessation of hostilities in Vietnam. The civilian group showed rates of 1.25% for males and 0.3% for females, whereas the comparison group of people who were in the military but not serving in Vietnam had current prevalence rates of 2.5% for males and 1.1% for females. The lifetime prevalence rates were even higher for Vietnam veterans with 30.9% for males and 26.9% for females. The most powerful predictor for PTSD was degree of combat exposure although

a number of other variables also predicted PTSD to a lesser extent. These factors included socioeconomic status during childhood, existence of a personal and family history of psychological difficulties prior to the war, and childhood abuse. Belonging to a racial or ethnic minority group also predicted higher current prevalence rates of PTSD with 27.9% of Hispanic, 20.6% of African American, and 13.7% of white or other male veterans reaching full diagnostic criteria (Davidson & Fairbank, 1993; Green, 1994; Kulka et al., 1990; Kulka & Schlenger, 1993; Schlenger et al., 1992).

In their prospective national study of 640 Australian Vietnam veterans, O'Toole et al. (1993) found a lifetime prevalence rate of PTSD ranging from 17% to 25.7%, and a current prevalence rate of 6.8% to 17.3%. This range takes into account variability according to interviewer and the type of structured interview used to make the diagnosis, namely, the SCID-R (Spitzer et al., 1987) and the DIS (Robins et al., 1988). The investigators initially made the assumption that all the research participants, by virtue of their veteran status, would meet the traumatic stressor criterion for PTSD. When this assumption was not made and the data were again analysed there was a slight lowering, but not substantial variation, in either lifetime or current prevalence rates of PTSD. Vietnam veterans reported greater acute and chronic health problems than the general population. Combat exposure was significantly related to reports of mental disorders, some skin conditions, ulcers, and infectious and parasitic disease (R. P. Marshall, personal communication, December, 1994).

The recent work of Sutker et al. (1994) demonstrated that 46% of army reservists serving graves registration duty during Operation Desert Storm have duty related PTSD. All these studies highlight the long-term human costs associated with war and civil violence. They help to emphasise the critical importance of overcoming the political and social influences which attempt to silence or ignore this disturbing information (Scurfield, 1992).

Table 3.2: Traumatisation associated with World War II

Study Authors	Traumatic Event	Sample Characteristics	Type of a Structured Diagnostic Interview For PTSD	Measures	Comparison or Control Group	Current Prevalence of PTSD	Lifetime Prevalence of PTSD	Other morbidity
Speed et al., 1989	Americans POWs held captive by Japanese	Not known	Not known	Not known	No	29%	50%	
Op den Velde et al., 1993	Dutch resistance fighters	147 disabled veterans	SCID-R - PTSD	Self- rating scale Maastricht	No	55.8%	83.7%	High Divorce rate High Vital exhaustion
Tennant et al., 1993	Australian POWs held captive by Japanese	Random sampling of 172 POWs; 170 controls.	None	DIS - DSM III for affective & alcohol disorders; EPI; Jackson Hostility; Zung Depression	Matched control	-	-	POWs more physical illness, greater risk of depression and anxiety
Harel et al., 1993	Holocaust survivors	168 US holocaust survivors; 155 US controls; 180 Israeli holocaust survivors; 160 European controls	None	Morale Scale; measure of social network; self - disclosure; social support; social affiliations	Matched controls	-	-	Survivors with better mental health had social support, used self-disclosure, and built social networks
Crocq et al., 1993	French POWs held captive by Russians	525 members of a POW Association	None	Questionnaire based on DSM III & DSM III R criteria	No	-	-	89% nightmares; 82% intrusive imagery; 39% survivor guilt; 73% active avoidance; 71% foreshortened future; 76% sleep disturbance; 75% startle response
Harel et al., 1993	American Survivors of Japanese attack on Pearl Harbor	250 members of Survivors' Association	None	Questionnaire base on DSM III R criteria Affect balance Locus of control Altruism	No	-	-	89% nightmares/ dreams; 87% intrusive imagery; 42% survivor guilt; 17% active avoidance; 24% startle response

Table 3.3: Traumatisation in Vietnam Veterans

Study Authors	Sample Characteristics	Type of a Structured Diagnostic Interview For PTSD	Measures	Comparison or Control group	Current prevalence of PTSD	Lifetime prevalence of PTSD	Other Morbidity
Card, 1987	Sampling of 1500 of national cohort study of 1.1 million 9th graders 21yr follow up	None	Diagnostic algorithm based on DSM-III	481 Vietnam veterans 502 veterans of other wars 487 non veterans	-	19.3% (Vietnam) 12.9% (other wars) 12.1% (non vets)	
CDC, 1988	Random sampling 2490 Vietnam veterans	Modified DIS-lay interviewers	-	-	2.2%	15%	
Snow et al., 1988	Mail survey of American Legion members	None	Self-report questionnaire	No	1.8% - 15%	-	
Goldberg et al., 1990	4184 male MZ twins served in military between 1965-1975	None	Questions similar to DSM-III-R criteria	Twins who served in Vietnam and co-twins no service	16.8% (twins who served) 5% co-twins who did not serve	-	
Kulka et al., 1990	Nationally representative sampling of 1500 U.S. veterans (NVVRS)	SCID-R	clinician's rating scale; IES; MMPI subscale-PTSD; Mississippi scale	Vietnam Theatre vets Vietnam era military Civilians	(Theatre vets) 15.2% males 8.5% females (Era vets) 2.5% males 1.1% females (Civilians) 1.2% males 0.3% females	(Theatre vets) 30.9% males 26. 9% females	(Theatre vets) 11.1% males 7.8% females (partial symptoms of PTSD)
Hunter, 1993	American 651 POWs held captive in Vietnam & 40-50 families	Not known	Not known	Prospective 7yr study Matched Controls	Not known	Not known	POWs problems with control, family disruption and divorce
O'Toole et al., 1993	Representative national study of 640 Australian Vietnam veterans	SCID-R; DIS; DSM-III-R	Mississippi; GHQ28; Combat Index; CES-D; Army SDI; Spanier DAS	Current data related to pre-Vietnam baseline information	6.8% to 17.3%	17% to 25.7%	-

Table 3.4: Traumatisation associated with Other Wars and Civil Violence

Study Authors	Traumatic Event	Sample Characteristics	Type of Structured Diagnostic Interview For PTSD	Measures	Comparison or Control group	Current prevalence of PTSD	Lifetime prevalence of PTSD	Other morbidity
Solomon et al., 1987	Israeli Soldiers in 1982 Lebanon War 1 yr follow up	716 male soldiers	None	Questionnaire - DSM III	Matched control group	59% with CSR 16% without CSR	-	-
Weisaeth, 1989	Norwegian seaman tortured by Libyan State	Participants held captive for 67 days	Not known	Not known	No	about 50%	about 50%	-
O'Brien & Hughes, 1991	British army veterans of 1982 Falklands war, 5 yrs after conflict	64 veterans	Not known	Not known	Matched control group	22% vets 8% controls	-	-
Aberhaim et al., 1992	Survivors of terrorist attacks in France;	254 survivors	Not known	Not known	Not known	18% overall 31% severely injured	-	-
Realmuto et al., 1992	Adolescent survivors of childhood trauma in Cambodia	46 volunteers	Not known	Not known	Not known	37%	-	-
Orner, 1993	British army veterans of 1982 Falklands war, 5 yrs after conflict	53 volunteers who had left military service	None	Questionnaire DSM-III R GHQ	No	60%	-	54.7% caseness on GHQ
Kinzie, 1993	Cambodian and Southeast Asian refugees	75 adults 40 children	None	Questionnaire DSM-III R; Clinical interviews	No	50% adolescent	50% adolescent 50-90% adults	High co-morbidity
Somasundarum, 1993	Civilians in Sri Lanka war	Clinical samples 1978-1986	None	ICD-9; Clinical interviews	No	-	-	No significant increase in overall psychiatric morbidity but higher Incidence of stress reactions phobic anxiety, grief reactions, and reactive depression

Table 3.4: :Traumatisation associated with Other Wars and Civil Violence (Continued)

Study Authors	Traumatic Event	Sample Characteristics	Type of Structured Diagnostic Interview For PTSD	Measures	Comparison or Control group	Current prevalence of PTSD	Lifetime prevalence of PTSD	Other morbidity
Wardak, 1993	Afghan refugees	120 Afghan male refugees 120 male controls	None	STAI; BDI; CCEI; GHQ	-	-	-	Psychiatric morbidity high for young adults and new refugees anxiety and depression common
Loughrey et al., 1993	Civil & terrorist violence in Northern Ireland	499 survivors of criminal injuries referred for medical evaluation and seeking compensation	None	Questionnaire DSM-III ; ICD-9	No	23.2%	-	marital problems depression suicide risk alcohol abuse
Khamis, 1993	Palestinian uprising to Israeli occupation	131 Palestinians who sustained serious bodily injuries	None	Questionnaire DSM-III R Social support adjustment	No	50% in males 4.25% delayed PTSD	-	-
Sutker et al., 1994	Operation Desert Storm	24 army reservists serving graves registration duty.	SCID DSM-III R	MMPI - PTSD scale; Mississippi Scale; PTSD Checklist	No	46% had ODS related PTSD	-	PTSD associated with depression and substance abuse

Disaster Studies

Investigating the psychological effects of disasters presents peculiar difficulties because it is impossible to anticipate when such events are going to occur. Disasters vary in severity and nature and often involve massive personal and community disruption, disorganisation, and loss. Research efforts are frequently mounted without sufficient time to anticipate adequate design and funding requirements. The practicalities, ethics, and other challenges of disaster field settings necessitate substantial flexibility in establishing priorities and often involve role conflicts. Sometimes disaster investigators do not clearly delineate between victims and non-victims when they are determining control and comparison groups, and there is inconsistent use of standardised assessment instruments and data collection strategies. Most studies rely on retrospective accounts and recall of pre-disaster functioning (Baum et al., 1993). All these factors need to be evaluated when considering the available research on the prevalence of PTSD in survivors of disasters. Variation along these dimensions has led to the suggestion that it is not especially valid to compare the prevalence rates of disasters with each other or with other traumatic events (Green, 1994). Recent reviews indicate that a considerable number of people experiencing disasters may develop PTSD and other persistent psychosocial difficulties but the studies surveyed differ along many parameters (Canino et al., 1990; Green, 1994; Raphael & Meldrum, 1993; Smith & North, 1993; Steinglass & Gerrity, 1990; Wilson & Raphael, 1993). Even those studies using standardised structured diagnostic interviews to make an assessment of PTSD have prevalence rates of PTSD that vary considerably (Green et al., 1992; Shore et al., 1989).

Individualised Traumatic Violence or Injury

There seems to be a considerable risk for PTSD in people personally experiencing traumatic violence or injury. The rates of morbidity vary according to the methods and

criteria used, the representativeness of the sample studied, and the extent and nature of the trauma. Most studies have been undertaken in the USA (Green, 1994). It appears though, that about a quarter to well over half of the people exposed to individualised traumatic violence or injury have diagnosable PTSD at sometime during their life (Green, 1994).

Using a community sample, Breslau and her colleagues (1991) found lifetime prevalence rates of 24% among young urban adults whose lives had been threatened, who had seen others killed or badly injured, or who been physically assaulted. Rape survivors had lifetime prevalence rates of 80%. This finding can be compared to the "two week" traumatisation rate of 94% reported for some rape survivors (Rothbaum et al., 1992) and the 50% reported in another clinical sample of highly exposed rape survivors (Neumann et al., 1989). Of those experiencing accidents 12% had suffered from PTSD (Breslau et al., 1991). In their comprehensive review of this literature, Kilpatrick and Resnick (1993) found lifetime prevalence rates of PTSD in the range 19% to 75% among crime victims with current prevalence rates of 5% to 39% (Kilpatrick & Resnick, 1993). In a random sample drawn from over 1000 children exposed to sniper attack Pynoos and colleagues, found that 58.4% had PTSD (Pynoos et al., 1987).

Investigations with clinical samples of women surviving domestic violence demonstrate PTSD rates of over 40%. Well over half those experiencing greater severity of trauma exposure have diagnosable PTSD (Astin et al., 1990; Houskamp & Foy, 1991). PTSD has been discussed as an almost predictable consequence for adult survivors of child sexual abuse but only one study provides reasonably reliable data. Rowan and her colleagues (Rowan et al., 1991) investigated 116 adult survivors of child sexual assault using a standardised diagnostic instrument and an operational definition of child sexual abuse. They found that 72% met full DSM-III R criteria for PTSD with a further 13% having partial symptoms. This sample consisted mainly of people who were repeatedly sexually assaulted in childhood (Rowan et al., 1991; Rowan & Foy, 1993).

In other studies, Burton et al. (1994) assessed 91 delinquent adolescents for exposure to 11 different traumatic events and found 24% of the research participants met full diagnostic criteria for PTSD. Both exposure to violence and family dysfunction were significantly associated with trauma symptoms. Using a standardised diagnostic interview, Thompson Fullilove et al. (1993) interviewed 105 women in treatment for addiction and found 59% had PTSD. Among those with PTSD, 97% reported one or more violent traumas as compared to 73% of those without PTSD. PTSD prevalence rates of 45% have been found in severely burned people up to one year after the initial injury (Perry et al., 1992). In a prospective study of survivors of a physical accident who had suffered a fracture, not lost a limb, and where no fatalities had occurred, 25% of the study participants had PTSD at six weeks, and 14.6% had PTSD at six months (Feinstein, 1993).

Finally, in an Australian study Creamer et al. (1989) investigated shootings in a workplace that resulted in multiple fatalities and injuries. These researchers collected data at 4, 8, and 14 months post trauma on 447 people exposed to the violence, and 192 contrast subjects. Unfortunately, a structured clinical interview was not used to make a diagnosis of PTSD and no data were collected in the first four months following the shootings. The research participants were volunteers but they were not a clinical sample. Creamer and his colleagues used a repeated measures survey methodology and had response rates of 53% for the trauma group and 57% for the contrast group. They provide evidence that participants who discontinued during the study differed little from those who continued. Averaged over time, the trauma group obtained significantly higher mean scores on the Impact of Event Scale (Horowitz et al., 1979) and measures of general psychological distress than the contrast group. General psychological distress did not diminish over the three stages of the research but intrusive memories of the shootings did reduce in frequency.

These findings strongly indicate that survivors of child and adult rape and domestic violence are particularly at risk for developing PTSD, whilst many survivors of other violent crimes and accidents also continue to experience persistent difficulties.

Emergency Workers

Studies investigating the prevalence of PTSD in emergency workers present similar challenges to disaster research. Many investigations have been anecdotal, uncontrolled, or have significant methodological difficulties. Not withstanding these constraints, these estimates of prevalence rates of traumatisation in emergency workers have helped to guide intervention efforts (Mitchell & Bray, 1990). Negative sequelae following traumatic events have been reported in helpers following a suburban rail disaster (Raphael et al., 1984), body recovery teams twenty months after a plane crash in Antarctica (Taylor & Frazer, 1982), in rescuers after the collapse of a North Sea oil rig (Ersland et al., 1989), in Swedish rescue workers attending the Armenian earthquake in 1988 (Lundin & Bodegard, 1993), and in both professional and volunteer emergency workers in Australia (Griffiths & Wátts, 1992; Moran & Britton, 1994). However, negative consequences are not invariably found (Alexander, 1993; Alexander & Wells, 1991; Hytten & Hasle, 1989).

McFarlane (1988; 1989) conducted studies into traumatic stress reactions in Australian volunteer firefighters involved in the Ash Wednesday fires in 1983. McFarlane collected data on 469 volunteer firefighters at 4, 11, and 29 months. He reported that when the intensity of exposure, the perceived threat, and the losses sustained in the disaster were considered independently, they did not predict PTSD. Neuroticism, introversion, and a family history of psychiatric disorder were said to be the best predictors of traumatic stress reactions in firefighters. McFarlane's work was very important in highlighting the role of individual differences in response to exposure to traumatic events. McFarlane's studies have some research design difficulties which have

implications for their generalisability. These problems are consistent with the cost and challenges of conducting such investigations in naturalistic settings. McFarlane's conclusions are based on 11 firefighters with PTSD. His measure for Neuroticism and Introversion was not administered until 29 months after the fire. McFarlane asked his research participants to describe their personality as it was prior to the fire (Eysenck & Eysenck, 1964; McFarlane, 1989). The traumatic event in this study was relatively circumscribed, involving an average of 16 hours of fire fighting and minimal personal bereavement for the firefighters. The General Health Questionnaire (Goldberg, 1972) was used as a measure of posttraumatic morbidity when it is only a measure of general psychiatric caseness (Goldberg & Williams, 1988). McFarlane discusses the relative influence of different explanatory variables for acute, chronic, and delayed PTSD but these conclusions must be treated cautiously.

Previous Contributions to our Understanding of Traumatisation in Police

There are two apparently competing themes evident in the literature on traumatic stress reactions in police. There appears to be either flat denial or minimisation of the possible negative consequences of traumatisation in police, or alternatively almost uncritical and unconditional acceptance that traumatic life events necessarily have devastating effects on police. Like the broader literature on emergency workers, anecdotal descriptions and uncontrolled studies with small samples have also dominated work with police. There is a disproportionate discussion of post-shooting trauma often to the exclusion of other potentially traumatising events in policing. There have been very few more systematic investigations into traumatic stress reactions in police. Many studies have not used sound outcome measures to assess PTSD. Some researchers have drawn conclusions that go beyond or are in direct conflict with their own data. Despite these limitations, the weight of evidence clearly indicates that most police are frequently exposed to potentially traumatising events, many are significantly distressed and disrupted by these experiences,

and a significant minority develop diagnosable PTSD. These investigations are discussed in more detail below and a summary is provided in Table 3.5.

Anecdotal Descriptions of Police Trauma

Several authors have provided descriptive analyses of post shooting trauma reactions (Carson, 1982; Lippert & Ferrara, 1981; Reiser & Geiger, 1984; Shaw, 1981). Solomon (1984) proposed that police pass through stages of shock, impact, and resolution following a shooting incident. He delineated the range of time that each stage should take and detailed a sequential intervention programme. Solomon & Horn (1986) describe 18 post shooting reactions reported by 86 police. These reactions have much in common with the diagnostic criteria for PTSD (American Psychiatric Association, 1994). These workers say "critical incident/post-shooting trauma can be conceptualized along the lines of realizing one's mortality" (p. 390). Solomon and Horn (1984) provide many inferences and recommendations but they lack sound explanation or empirical justification.

Williams (1987) compared the experiences of police with those of Vietnam veterans. She discusses secondary victimisation following police shootings and comments on the importance of fundamental and structural change in policing organisations.

Uncontrolled Studies of Police Trauma

Ford and his colleagues (1971) found that self-reported fear of death was not greater among police officers than in mail carriers or college students. This study had no outcome measure for distress and there was no investigation of individual variation within the occupational groups studied. This finding has been used to challenge the popular notion that fear of impending danger and physical harm are stressful to police

(Malloy & Mays, 1984) but it could also be an artefact of police cultural influences which may preclude the reporting of a fear of death (Van Maanen, 1973).

Spielberger and his co-workers (1981) found that the same three stressor events were given the highest stress ratings in both their mail survey and their pilot study of occupational experiences in policing (Spielberger et al., 1981): firstly, a fellow officer being killed in the line of duty; secondly, killing someone in the line of duty; and finally, exposure to battered or dead children. These results are only based on 17.3% of the original sample and so must be interpreted with caution.

Nielson (1981) investigated post shooting reactions in officers from several policing organisations. Only 24% of the respondents did not experience perceptual distortion following a shooting, whereas 92% had nausea, 59% had thought intrusions, 52% reported depression, and 21% reported anxiety. Only 8% of the sample did not report physical symptoms and 11% did not report psychological symptoms. The lack of an appropriate control group makes it difficult to determine the degree to which the shootings contributed to these problems.

Goodson (1983) identified exposure to traumatic incidents as a major source of acute stress in police especially criminal violence and abuse involving the self or others, accidents and mutilations, and public order situations.

Stratton (1984) investigated 60 Los Angeles deputy sheriffs who had been involved in a shooting between six months to three years from the time of data collection. This investigator did not attempt to ascertain the representativeness of the sample and the study had no control group of officers who were not involved in a shooting. Stratton found substantial individual variation in his data in that 30% of the participants reported being greatly affected by the shooting, 33% were moderately affected, and 35% said they were not affected at all.

Gersons (1989) explored the reactions of 37 Amsterdam police involved in serious shooting incidents over the period 1977 to 1984. These were circumstances

where people were either injured or killed. The investigator converted the DSM III criteria for PTSD (American Psychiatric Association, 1980) into a number of questions which were asked in a semi-structured interview. Gersons reported that 46% of these police either had PTSD at the time of the interview (19%) or at some prior time (27%). He indicated that only three police showed no trauma symptoms.

Duckworth (1986) investigated police attending the fire at the Bradford Football Stadium and found a significant number of police had psychological difficulties following the fire with 15% classified as likely cases and 15% as likely serious cases as measured by the General Health Questionnaire (Goldberg & Hillier, 1979).

In a study conducted on 271 Australian Federal Police, Coman & Evans (1991) found that: "these data from both job content and job context occupational events suggest that police officers are stressed primarily by organisational variables common to most occupational groups" (p. 164). Unfortunately, these investigators did not clarify how many of their research participants were operational police. Their sample represents a 21% response rate. There appear to be other problems with both the methodology and the conclusions drawn from the data. These writers seem to confuse the frequency of occurrence of a particular stressor with perceived stressfulness. There are internal contradictions in their reports of their findings where violent death of a partner in the line of duty, participation in an act of police corruption, shooting someone in the line of duty, attending a call to the non-accidental death of a child, confronting a person with a gun, and duty-related violent injury were perceived as the most stressful job content events. In this study police officers were not asked to concurrently rate job content and job context stressors and so their relative influence was never compared. Trauma and organisational variables also cut across the categories of job content and job context stressors.

The study conducted by Brown and Campbell (1990) on English police has problems comparable to the Coman and Evan's (1991) investigation and these authors reach similar conclusions. This is despite the finding that dealing with sudden deaths, violent offenders, and the victims of violence were the most frequently reported stressors

and had a high endorsement for "felt stress" (p.317). Brown and Campbell reported that they did not investigate traumatic incidents because their stressfulness is well recognised and researched and they are "relatively rare events to which police officers are infrequently exposed" (p. 305). The basis for such conclusions remains unclear.

O'Brien and Reznik (1988) investigated general stress levels among Australian police of all ages and across all ranks compared to a general population group. They did not directly measure PTSD. The General Health Questionnaire (GHQ) was used as a measure of general psychological distress (Goldberg & Hillier, 1979). These workers found that police experienced significantly more psychological distress and higher cholesterol levels irrespective of age, gender, or rank. Police frequently reported an inability to concentrate, feeling useless, incapable of decision making, feeling constantly under stress, and unable to enjoy life. Police also reported higher levels of substance abuse compared to the general population. This finding is of particular relevance given that substance abuse often occurs concurrently with PTSD (Boudewyns et al., 1991; Davidson et al., 1991; Green et al., 1992; Kulka et al., 1990; Shore et al., 1989; Sutker et al., 1994).

Westerink (1990) investigated 57 Australian police using questionnaire data. She assessed the types of traumatic events encountered on duty, reactions to those events including post traumatic stress symptoms, use and perceived value of consultations with welfare and mental health professionals, and levels of alcohol consumption. Some general population comparison data was used. There was no control group and a structured interview was not used to assess PTSD. The research participants were all less than one year from basic training, performing general operational duties in a large metropolitan area, and had an average age of 22 years. These police had a higher prevalence of severe emotional distress than the general population. Westerink found the majority of her sample of inexperienced police had significant exposure to potentially traumatising events. The events perceived as most traumatic for the whole group included death or injury to a child, removal of human remains, and those involving strong

emotional reactions. Westerink found that 5.26% of her sample fitted the diagnostic criteria for PTSD. None of the participants had received formal psychological assistance and only one participant reported receiving informal support. These police would happily recommend counselling for others, but would not personally pursue such an option.

British police teams involved in the recovery of human bodily remains following the Lockerbie disaster in 1988, the sinking of a pleasure craft in the Thames river in 1989, and a helicopter crash in 1989, were investigated by Thompson and Solomon (1991). The result showed minimal psychological distress, moderately raised levels of intrusive thoughts, and a decrease in absenteeism. These generalisability of these interesting findings are constrained by the lack of a suitable control group, a small non-representative sample, a strong reliance on experienced volunteers who had the option of withdrawal at any time, the nature of the tasks involved, and problematic outcome measures.

Griffiths and Watts (1992) examined the reactions of attending Australian police as part of a larger study on the Kempsey and Grafton fatal bus crashes which occurred two months apart at the end of 1989. A total of 56 people were killed and 64 were injured. Interviews and questionnaires were used to assess psychological difficulties at one month, three months, and twelve months following the accidents. Of the 43 police involved in the study " 60% stated that they had not recovered from the effects of these accidents at the time of the interview with 53.5% believing it was the most distressing experience of their lives" (p. 56). Unfortunately, the prevalence of PTSD was not formally assessed but these writers report high rates of attrition, transfers, stress leave, one suicide attempt, and one completed suicide among the 288 participating emergency personnel of which police were a part.

In another study Savery and his colleagues (1993) reported that 205 Western Australian police officers were stressed by threat of danger and physical violence. There was no control or comparison group in this study and the rates of PTSD were not assessed.

Manolias and Hyatt-Williams (1993) investigated the effects of shooting incidents on 25 United Kingdom police who were authorised to carry firearms. The majority of participants are reported to have had a marked emotional reaction after the shooting incident (67%) and there were three cases of severe PTSD (12%). Two interviews were conducted and the research findings are discussed in terms of subjective accounts of attitudes towards firearms, training, perceptual distortions during the shooting, official actions and senior officer attitudes, the attitudes of colleagues, the impact of the press and public, family reactions, litigation and appearances in court. A wealth of qualitative information is provided by these investigators. This study only had a small sample. There were large variations in time since the shooting incident. Standardised outcome measures were not used and there was a lack of control for potentially confounding variables.

Lee and Stoneham (1994) adapted Spielberger's Police Stress Survey (Spielberger et al., 1981) to survey 2230 Canadian research participants. They used stratified sampling techniques to select a largely representative group of the general population of the Royal Canadian Mounted Police. There was still a slight underrepresentation of female constables and civilian members. The survey instrument included 69 job events reflecting a range of potentially stressful situations associated with police work. Among regular police the highest perceived stress ratings were mostly assigned to job events which represented a risk of violence or injury. The first four events for perceived stressfulness were killing someone in the line of duty, fellow officer killed in line of duty, exposure to dead or battered children, and a lack of back up in crisis situations. High ratings were also given to paperwork demands and concerns about supervision and support. Where the ranks were found to differ significantly, constables always provide the highest stress ratings. Very few significant differences in mean stress ratings were observed between male and female constables.

More Systematic Investigations of Police Trauma

Lipson (1986) found that police attending the San Ysidro McDonald's restaurant massacre in 1984 had significantly higher levels of posttraumatic symptoms than a control group of police who were not involved. Mild to severe PTSD symptoms were found in 56% of attending police six months after the massacre. Unfortunately, this study did not use a structured diagnostic interview to make a diagnosis of PTSD and it is limited by the significant confounding of predictor and outcome variables. The frequency with which a police officer ate at a McDonald's restaurant before the massacre, the use of avoidance coping strategies, and accumulated life stress were significant predictors of the severity of trauma symptoms (Lipson, 1986).

Conversely, in a series of studies Alexander and his colleagues (Alexander & Wells, 1991; Alexander, 1993; Alexander et al., 1993) reach the conclusion that traumatisation is not a particularly important issue in policing. They argue that organisational stressors are far more pertinent and claim that their data supports this conclusion. Whilst there is evidence for the importance of organisational factors in police stress, Alexander et al. (1993) have no measure of traumatisation in their larger study of 758 Scottish police. Their conclusions minimising the role of traumatic stress appear to be inconsistent with some of their own research findings where higher exposure to physical danger was predictive of pathological anxiety, depression, days off work, and job dissatisfaction. Their criteria for separating trauma and organisational variables are not clearly delineated and they use a narrow definition of trauma exposure. The research project is not theory driven and involves the problematic practice of multiple comparisons between many variables (Hamilton, 1992). Alexander & Wells (1991) do specifically investigate traumatisation in a before and after comparison of police officers' reactions to body-handling after the Piper Alpha disaster. These researchers report that their study failed to demonstrate high levels of post-traumatic distress in the 50 police involved when they were compared with their own pre-disaster assessment scores and a matched control

group of police officers. There are some methodological problems with this study which suggests that this finding must be interpreted with caution. Pre-retrieval trauma symptom scores were not collected for either the experimental or matched control groups. The "traumatic event" in this study may not clearly fulfil the diagnostic criteria for a traumatic event (American Psychiatric Association, 1987; 1994) because the operational exercise was not either unexpected or sudden. The researchers indicated that the work was not likely to be traumatising to many participants. The police involved received more support than usual from both fellow officers and other personnel. This study relied on the Impact of Event Scale (IES) as the sole outcome measure for trauma symptoms. The IES does not measure heightened arousal and lacks validation with larger populations of people with PTSD (Davidson & Fairbank, 1993; Horowitz et al., 1979; Wolfe & Keane, 1993). The study does identify some organisational intervention strategies which are worthy of more systematic investigation. Alexander (1993) also conducted a three year follow-up of the 1991 study. The criticisms of the previous investigation are equally applicable. There were 35 research participants in the follow-up study. Alexander indicates that 26% of police officers reported intrusive flashbacks at three months following the disaster and 9% at three years. Three officers at three years, as compared to just one at three months, felt they were stressed because of their Piper Alpha duties. Anxiety scores showed a decline at three months and three years, compared to baseline. Alexander speculates about the reasons for this decline in anxiety scores suggesting that increased self-image, self-esteem as copers, ongoing benefits from team cohesiveness, and learning new coping strategies may explain the results. He emphasises the importance of good managerial and organisational practices in preventing negative traumatic stress reactions in police. Alexander (1993) did not have pre-retrieval measures of PTSD but anxiety and depression sometimes occur co-morbidly with PTSD (Davidson et al., 1991; Green et al., 1992).

Table 3.5: The Prevalence of Trauma Reactions in Police

Study Authors	Sample Characteristics	Measures	Comparison or Control Group	Morbidity
Spielberger et al., 1981	234 US police response rate of 17.3%	Mail survey	No	Highest stress ratings to fellow officer killed, killing someone, exposure to battered or dead children
Neilson, 1981	US Police from several departments Post shooting	Questionnaire	No	24% no perceptual distortion, 92% had nausea, 59% had thought intrusions, 52% depression, 21% anxiety, 8% no physical symptoms, 11% no emotional symptoms
Goodson, 1983	Not known	Questionnaire	No	traumatising events: criminal violence and abuse, accident and mutilation, public order situations
Stratton et al., 1984	60 US deputy sheriffs post shooting	Questionnaire	No	30% greatly effected, 33% moderately effected, 35% not effected
Lipson, 1986	176 US police attending the San Ysidro McDonald's massacre 70% response rate	SCL-90 R The Reaction Index for PTSD, IES, demographics, daily living and health questionnaire	Matched contrast group of non-attending police	Attending police had higher levels of PTSD, 56% of attending police had mild to severe PTSD six months after the massacre, relationship between presence of PTSD and other emotional difficulties, avoidance coping, accumulated life stress, & the frequency one ate at McDonalds related to severity of PTSD

Table 3.5: The Prevalence of Trauma Reactions in Police (Continued)

Study Authors	Sample Characteristics	Measures	Comparison or Control Group	Morbidity
Gersons, 1989	37 Amsterdam police post shooting	Questionnaire based on DSM-III converted to semi-structured interview	No	PTSD rates 46% 19% at the interview 27% prior to the interview
Duckworth, 1986	234 British police attending fire at Bradford football stadium	GHQ	No	15% likely case, 9% likely serious cases
O'Brien & Reznik, 1988	1051 Australian police by random sampling, 74% response rate	GHQ, Lifestyle risk Questionnaire	General population comparison group	Blood pressure elevated in male police over 29, Smoking elevated in female police of most ages, alcohol elevated in male police of most ages & in females of all ages Cholesterol and stress levels elevated in police across age and gender
Westerink, 1990	57 Australian probationary police	GHQ Questionnaire DSM--III-R criteria for PTSD	General population comparison on lifestyle risk	Higher severe levels of stress in police, 5.26% had PTSD,

Table 3.5: The Prevalence of Trauma Reactions in Police (Continued)

Study Authors	Sample Characteristics	Measures	Comparison or Control Group	Morbidity
Coman & Evans, 1991	271 Australian police response rate of 21%	Mail survey		Highest job content stress ratings violent death of partner, participation in police corruption, shooting someone, non-accidental death of child, confronting a person with a gun, violent injury to self
Thompson & Solomon, 1991	28 British police who had volunteered for victim recovery duties	GHQ-28, IES, EPQ	No	low levels of distress, moderately raised levels of intrusive thoughts, more extroverted and stable than average
Griffiths & Watts, 1992	43 Australian police involved in 2 fatal bus crashes	Interviews and questionnaires at 1, 3, & 12 months	No	60% not recovered 53.5% reported the bus crashes to be the most distressing experience in their lives

Table 3.5: The Prevalence of Trauma Reactions in Police (Continued)

Study Authors	Sample Characteristics	Measures	Comparison or Control Group	Morbidity
Manolias & Hyatt-Williams, 1993	25 British police authorised to carry firearms post shooting	Reaction Index for PTSD questionnaire and two interviews	No	12% severe PTSD, 67% marked emotional reaction post shooting
Alexander & Wells, 1991	50 Scottish police involved in body retrieval after the Piper Alpha Disaster	IES Hospital Anxiety and Depression scale (HAD), EPQ, Flotta Mortuary questionnaire, coping strategy scale, sick leave	Comparison of HAD predisaster assessments, Matched control group of police not involved in body retrieval,	Low levels of PTSD & psychiatric morbidity, no differences in sick leave 26% reported intrusive flashbacks
Alexander, 1993	35 police involved in previous Piper Alpha study-3yr follow-up	as above	as above	9% reported intrusive flashbacks, decline in anxiety scores compared to baseline

Current Intervention Programmes with Traumatised Police

There are very few controlled prevention and intervention studies into PTSD in general, and none on traumatised police (Solomon et al., 1992). There has been significant recent interest in traumatic stress reactions in emergency workers, including police, and a vast proliferation of strategies claiming to reduce, or entirely prevent traumatisation in these people. For instance, critical incident stress debriefing (Mitchell, 1983; Robinson, 1986) is derived almost entirely from the principles of brevity, immediacy, centrality, proximity, and expectancy that have been used during war, for many years, by military psychiatrists (Boman, 1982; McMains, 1986). The overriding goal of strategies based on these principles is to return the worker, be they soldier or police officer, back to operational duty as soon as possible. Unfortunately, some proponents of critical incident stress debriefing (CISD) make generalisations about the personalities and characteristic responses of emergency personnel without sound empirical substantiation (Mitchell & Bray, 1990). Surprisingly, there have been no systematic investigations into the efficacy of CISD. There is evidence from studies with Vietnam veterans and emergency workers that the claims made for the beneficial effects of CISD may not be scientifically based and that such interventions may not be predictive of long term mental health outcome (Griffiths & Watts, 1992; Robinson & Mitchell, 1993; Scurfield, 1992).

Mental health professionals who design programmes to prevent or treat the negative consequences associated with exposure to traumatic events in police, often do so with no guiding conceptual framework and without the benefit of controlled treatment outcome studies. Such an environment has been the fertile ground for the large scale international adoption of CISD and the implementation of practices such as the blowing up of animal carcasses as part of a trauma inoculation programme for police disaster identification teams (Miller, 1988). Police and other emergency workers have also been recruited into volunteer peer support programmes at an unknown personal cost.

There appear to be few different intervention options, from which police can choose, when they are recovering from stressful or traumatic events. There is some

evidence of an extraordinarily high rate of police retired as medically unfit with a psychiatric diagnosis (Police Association of NSW., 1990-1991). Chapter Two reviews the evidence for the relationship between police stress and increased risk of domestic violence, family disruption, substance abuse, depression and anxiety, cardiovascular disease and other physical health problems, absenteeism, job dissatisfaction, diminished organisational commitment, and poor work performance. There is also evidence for the persistence of PTSD and for its relationship with a substantially increased risk of suicide.

We cannot prevent police being exposed to traumatic events but it is possible that some current intervention programmes may simply further desensitise police to their feelings, perpetuate existing psychosocial difficulties, and cost a lot. We do not know. Since we cannot easily prevent operational police being exposed to potentially traumatising events, policing organisations have a responsibility to make occupational environments as favourable as possible to optimal functioning and recovery (NSW Occupational Health and Safety Act, 1983). There seems to be very little current focus on organisational issues which may perpetuate the negative effects of traumatisation and psychological distress (Toohey, 1993). In some policing organisations there is continued use of internal, centralised, management supervised, and structurally problematic employee assistance branches. Whilst they have the potential benefit of on-site employee advocacy, critics of these internal intervention programmes have concerns about confidentiality risks, the quality of services, and that clear separations exist between clinical and personnel functions (Chilvers, 1993b). Departmental health professionals are formally responsible to their employing policing organisations, and there is frequently some confusion as to the identity of their clients. For instance, is their client the individual police person seeking help or, is their client the policing organisation requiring healthy personnel?

The Influence of Personal, Trauma, and Recovery Variables

The literature on PTSD has identified the important influence of personal, trauma, and recovery factors in the development and maintenance of traumatic stress reactions.

There is considerable variation across studies but a number of personal factors seem to have be regularly implicated in the onset and severity of PTSD including pre-existing family of origin dysfunction, personal or family history of psychiatric disturbance, history of childhood abuse, neuroticism, locus of control, resiliency, hardiness, younger age, and prior trauma exposure (Antonovosky, 1979; 1987; Bremner et al., 1993; Breslau et al., 1991; Burton et al., 1994; Creamer et al., 1989; Davidson et al., 1991; Fairbank et al., 1994; Green et al., 1990; Helzer et al., 1987; Khamis, 1993; Kramer & Green, 1991; Kulka et al., 1990; McFarlane, 1989; Norris, 1992; Roth et al., 1990; Shore et al., 1989; Thompson & Solomon, 1991; Zaidi & Foy, 1994).

There also appear to be particular characteristics of a traumatic event which are more likely to make the event traumatising for an individual including the magnitude and severity of trauma exposure, perceived threat to life and limb, perception of severe physical harm or injury, the psychological proximity of the event, receipt of intentional injury or harm, exposure to grotesque sights, the violent or sudden death of a loved one, learning of exposure to a noxious agent, causing death or severe harm to another, multiple versus single exposure, bereavement and loss, and the non-accidental death of children (Brown & Campbell, 1990; Burton et al., 1994; Card, 1987; Coman & Evans, 1991; Creamer et al., 1989; Elder & Clipp, 1988; Fairbank et al., 1994; Foy et al., 1987; Goldberg et al., 1990; Green, 1993; Helzer et al., 1987; Kilpatrick et al., 1989; Kulka et al., 1990; Lee & Stoneham, 1994; Lipson, 1986; March, 1993; Pynoos et al., 1987; Savery et al., 1993; Shore et al., 1989; Spielberger et al., 1981; Winfield et al., 1990).

Consistency and perceived quality of social support and willingness to self-disclose has been demonstrated to have a positive impact on the recovery of traumatised people (Alexander & Wells, 1991; Creamer et al., 1989; Dutton et al., 1994; Hodgkinson & Shepherd, 1994; Kahana et al., 1987; 1988; Keane et al., 1985). There is some evidence for the positive impact of the traumatised person understanding their subjective reactions and feeling a sense of security (Creamer et al., 1993b). Although there are few studies available, some people even appear to experience enhanced psychological functioning following recovery from traumatisation (Antonovosky, 1979; 1987; Elder & Clipp, 1988; Herman, 1992; Kahana et al., 1987; 1988; Wilson, 1988).

The importance of the process of relationships between various personal, trauma, and recovery factors will be more fully elaborated in Chapter Five when a new model of traumatic stress reactions is presented. The relative contribution of some of these important variables in explaining traumatic stress reactions in police will be then empirically assessed.

Summary and Conclusions

This introduction to PTSD has attempted to justify a focus on traumatic stress reactions in police rather than other forms of pathology. The historical and political context of traumatisation has been characterised by periods of intense denial and minimisation of the potential for traumatic events to precipitate debilitating consequences for individuals. I have noted the unfortunate and almost exclusive focus on the deficits and weaknesses of traumatised people rather than their strengths, courage, resources, and creativity. The strong and pervasive influence of formulations that focus exclusively on pre-morbid vulnerability have been contextualised as owing much of their heritage to Freud's repudiation of his original trauma theory when faced with the threat of professional and social ostracism. Systematic research into traumatisation has been hindered by the conflicts between science and institutionalised ideologies and the vested interests of

people who minimise the costs of victimisation. I have noted the secondary victimisation often experienced by trauma survivors and the political activism which has given rise to the proliferation of published literature on PTSD in recent years. The content and anomalies of the diagnostic criteria for PTSD have been described as has its medical and legal status. I have identified some of the many unresolved issues in the study of traumatisation and the current lack of testable conceptual frameworks to explain PTSD. The need to move beyond descriptive analyses has been emphasised. There is convincing evidence that over half those people initially diagnosed with PTSD will continue to fulfil these diagnostic criteria for long periods of time, and sometimes for decades. I have described how other psychological difficulties such as substance abuse, depression, anxiety, and problems in interpersonal relationships often co-exist with PTSD. People with PTSD are far more likely to commit suicide. I have noted the variation in prevalence rates of PTSD as function of disparate populations and traumatic events, regular changes in the diagnostic criteria for PTSD in recent years, and the methodological sophistication of the studies. The methodological difficulties of many studies have been detailed and the limitations of comparison, generalisation, and replication have been described. I have noted the paucity of studies that systematically examine the relationships between personal, trauma, and recovery factors and the need for a core methodology in all studies of the epidemiology of traumatisation. Studies of the prevalence of PTSD in the general population, and among survivors of war and civil violence, disasters, individualised traumatic violence or injury, emergency workers, and police have been reviewed. The convincing evidence for high and persistent rates of PTSD among trauma exposed groups has been documented. I have critically reviewed previous studies of traumatisation in police and demonstrated problems associated with scientific soundness, conceptual clarity, and being theoretically informed. The dominant themes of either minimising or uncritically accepting high rates of traumatisation in police have been described. I have demonstrated that potentially traumatising events are frequently seen as extremely stressful by many police across studies and countries. I have presented evidence that even very inexperienced police are frequently exposed to potentially traumatising events and

that police do not seem to readily seek professional psychological assistance. The current intervention programmes to assist traumatised police have been described as narrowly focussed on individual ways of coping, structurally problematic, and lacking in systematic evaluation. Personal, trauma, and recovery variables which have helped to explain the onset and severity of traumatic stress reactions have been summarised.

The need for a conceptual model to explain the basic processes linking stressful life events and traumatisation has been repeatedly emphasised in the last two chapters of this thesis. There have been some conceptual contributions in this field. Four major groups of theoretical models of traumatic stress reactions will be evaluated against a set of established criteria in the next chapter.

Chapter Four

Conceptual Models of Traumatic Stress Reactions: A Review

Conceptual Models of Traumatic Stress Reactions: A Review

In this chapter some criteria for a model of traumatic stress reactions will be identified. These criteria are well-established (Foa & Riggs, 1993; Jones & Barlow, 1990) and address some of the unresolved issues in the study of traumatic stress reactions. Four major groups of conceptual models will be critically evaluated against these specific criteria.

Criteria for a Model of Traumatic Stress Reactions

Ideally, any theoretical model of traumatic stress reactions needs to be comprehensive enough to meet the following criteria :

- to explain the relationship between personal factors, characteristics of traumatic events, recovery environments, and traumatisation;
- to encompass the constellation of positive and negative sequelae following traumatisation;
- to explain the differential severity of symptoms in people;
- to explain the presence of PTSD in some individuals but not others experiencing similar traumatic events; and
- to address relevant empirical research (Foa & Riggs, 1993; Jones & Barlow, 1990).

Evaluation of Major Theories of Traumatic Stress Reactions

There have been some valuable contributions to our understanding of traumatic stress reactions from a number of theoretical traditions. Previous conceptualisations do not

appear to fulfil the identified criteria for a model of traumatic stress reactions. The limitations of current formulations of traumatic stress reactions and the need for an integrative theory has been noted by some prominent writers in this field (Baum et al., 1993; Wilson, 1994; Wilson & Raphael, 1993). In this chapter, I wish to establish the need for an integrative theory of traumatic stress reactions. My emphasis will be on the inability of the psychodynamic, cognitive/behavioural and information processing, biological, and socio-cultural traditions to meet some of the identified criteria for a model of traumatic stress reactions. This analysis is intended to be specific rather than exhaustive. It is not intended to diminish other useful contributions to our understanding of the ways in which people experience traumatic life events.

Psychodynamic

Freud investigated the traumatic nightmares of World War I veterans. He proposed that trauma occurs when an emotionally intense event penetrates the ego's defences and floods it with uncontrollable anxiety. This is the energy overload or the stimulus barrier definition of trauma (Freud, 1920). These overwhelming impulses disrupt functioning. This conceptualisation emphasises the severity of the stressor, the influence of mitigating factors, and the disintegration associated with failed modulation of the stimulus barrier (Brett, 1993).

There are two other traditional psychoanalytic views which have been applied to traumatic stress reactions. The first is associated with Freud's recapitulation of his original trauma hypothesis. Freud clearly stated that his "hysterical" female patients were survivors of childhood sexual assault and that this was the basis of their psychopathology (Masson, 1984). His more socially acceptable theory of reaction to stress is the now classic psychoanalytic formulation of symptom formation based on infantile conflict. Regression to the original infantile conflict occurs when the person is frustrated. In this conceptualisation current personal difficulties are seen as reflecting unresolved feelings

from an earlier conflict. Defences keep the person fixated at the point of the original trauma resulting in developmental arrest. If the combined effects of the current frustration and the infantile conflict are great enough, symptoms will develop. This is called a "complemental series". The infantile conflict is usually seen as the primary aetiological factor in the development of symptoms, but if a current life experience has sufficient valence it could combine with a relatively minor infantile conflict to create symptoms (Fenichel, 1945). The second conceptualisation is an extension of the stimulus barrier formulation and related to regression in the form of a repetition compulsion of the traumatic event. Freud used this explanation to explain intrusive posttraumatic symptomatology in World War I veterans. He suggested that penetration of the stimulus barrier by a stressful life experience results in regression to very primitive defence of repetition compulsion. During repetition compulsion, the traumatic event is constantly re-enacted while the individual attempts to master the experience. These later attempts at mastery, as manifested in intrusive symptomatology, are presumed to alternate with avoidance and denial of the traumatic event (Brett, 1993; Freud, 1939).

Later psychodynamic theorists have taken one of three major positions in explaining traumatic stress reactions. Firstly, characteristics of the individual and infantile conflict completely explain trauma symptoms that is, the traumatic event is largely irrelevant (Fenichel, 1945). Secondly, all symptoms are caused by the nature of the traumatic event and individual factors are not important in explaining the aetiology of traumatic stress reactions (Kardiner & Spiegel, 1947). Finally, there are interactional models in which the meaning of a particular life event to an individual influences whether it becomes traumatic (Hendin & Hass, 1984; Krystal, 1985). The proponents of interactional models suggest that pre-existing vulnerabilities help determine whether an event is experienced as overwhelming and the specific nature of subsequent symptomatology (Brett, 1993).

Bonifacio (1991) articulated a psychodynamic approach to the psychology of policing as was described in Chapter Two. His central tenet is the concept of conflict. He

proposes that this conflict is caused by mixed feelings between the police officer, policing organisations, the public, spouse and family, friends, and work peers. Bonifacio argues that this conflict results in both objective and superego anxiety. Objective anxiety is caused by being overwhelmed by a powerful working environment and superego anxiety is precipitated by the experience of pleasure from work that is morally challenging. Bonifacio seems to adopt the classic psychoanalytic formulation of symptom formation and sees the cause of all police stress as residing in human nature. He suggests that human nature is unlikely to change.

Evaluation against the specified criteria

There are promising theoretical contributions from self-psychology which describe the overwhelming of the ego's resources by a traumatic event, the reconstitution of the ego following a traumatic event, the importance of the integration of powerful and painful feelings, the mastery of conflicts, and the potential for growth in ego strength following a traumatic event (Deitz, 1986). Such models have begun to explain the importance of personal factors, characteristics of traumatic events, recovery environments, and traumatisation. Deitz (1986) considers the possibility of positive as well as negative consequences following traumatisation. He can account for differential severity in symptoms and is able to explain individual variation in the onset of PTSD in people experiencing similar traumatic events. Psychodynamic theories and therapies are also comprehensive enough to consider changes in experience as well as changes in behaviour. They are typically concerned with both the intentions and the meanings of behaviours.

However, psychodynamic models do not fulfil some of the identified criteria for a model of traumatic stress reactions. Therapeutic approaches derived from psychodynamic models are mechanistically based and interested in the therapist's meanings or interpretations of a traumatic event rather than how such an event is perceived by the

client (Viney, 1990). Psychodynamic models of traumatic stress reactions are largely premised on a "defensive theory of human motivation" (Kelly, 1955, p. 1101). The classical model of symptom formation cannot explain the influence of the traumatic event except as a precipitant to unresolved childhood conflicts (Deitz, 1986). This formulation is not supported by the now robust research finding of a dose/response effect in traumatisation (March, 1993), in other words, the magnitude of the traumatic stressor bears a direct relationship to the risk of trauma symptoms. Stimulus barrier or energy overload models do not differentiate between adult trauma and infantile conflict. The repetition compulsion explanation is based on an alternation between intrusive re-enactment of the traumatic event and avoidance against remembering. This argument is problematic given the requirement for the concurrent presence of intrusive and avoidance symptomatology for a diagnosis of PTSD (American Psychiatric Association, 1987; 1994). Later psychodynamic theorists only account for limited aspects of the symptomatology of PTSD (Dietz, 1986; Emery & Emery, in press; Hendin & Hass, 1984; Krystal, 1985, Parson, 1988). They do not adequately address or explain the process of relationships between personal, trauma, and recovery factors. They also shed very little light on recent empirical findings concerning the relationships and the relative contributions of trauma and personal variables in influencing mental health outcome (Brett, 1993).

Cognitive/Behavioural and Information Processing Theories

In this section conditioning theories, information overload, and computer analogy information processing theories will be described and evaluated against the specified criteria.

Conditioning theories of PTSD

Early conditioning theories described traumatisation as the result of a single-trial pairing of a conditioned stimulus with an unconditioned stimulus (Foa et al., 1989). More

sophisticated conceptualisations have been based on Mowrer's two-factor learning theory (Becker et al., 1984; Kilpatrick et al., 1985; Keane et al., 1985; Mowrer, 1947). Traumatisation is seen to occur through the processes of both classical and instrumental conditioning. It is suggested that these conditioning experiences result in the acquisition of fear and avoidance behaviour. This process reportedly occurs through two stages. Firstly, a neutral stimulus becomes temporally associated with an unconditioned stimulus that evokes fear and distress. This conditioned stimulus is then temporally associated with another neutral stimuli so that the conditioned stimulus becomes repugnant. Many environmental stimuli develop the capacity to engender fear and anxiety through these processes of higher order conditioning. Secondly, the organism learns to avoid or escape from the noxious stimuli and this behaviour is rewarded by a reduction in the distress associated with the presence of the conditioned stimulus (Foa et al, 1989; Foy et al., 1987; Keane et al., 1985). This explanation has been used in discussing PTSD in Vietnam veterans (Keane et al., 1985) and survivors of rape (Becker et al., 1984; Kilpatrick et al., 1985). These theorists use the concepts of stimulus generalisation and second order conditioning to explain the diversity of stimuli that precipitate anxiety in the traumatised person (Foa et al., 1989).

Evaluation against the specified criteria

Conditioning theories based on Mowrer's two factor theory help explain fear reactions to previously neutral stimuli in the traumatised person. They also account for the way traumatised people avoid situations that may be objectively non-threatening to others and in spite of the fact that such avoidance may cause considerable disruption to their functioning (Foa et al., 1989). These theories have also given rise to therapeutic interventions such as systematic desensitisation and flooding for the treatment of PTSD. Workers using these strategies have had some success in ameliorating some trauma symptoms (Cooper & Clum, 1989; Keane et al., 1989; Solomon, 1992).

However, the theories informing these techniques do not fulfil the specified criteria for a model of traumatic stress reactions. Their underlying assumptions are basically mechanistic and reductionist (Winter, 1992). Conditioning conceptualisations do not explain the relationships between personal, trauma, and recovery factors. They do not encompass the positive and negative consequences that have been associated with PTSD. Conditioning theories have difficulty explaining individual variation in both the presence and severity of symptoms. The trauma survivor is seen as the product of environmental contingencies rather than as a reflective, feeling, and experiencing person who brings strengths and vulnerabilities, behavioural choices, and a context to stressful life events. In not considering the meaning of various symptoms to a traumatised person, exposure based therapies risk eliminating coping strategies which may have immediate survival value to an individual (Neimeyer, 1987a) and they may inadvertently exacerbate existing difficulties (Pitman et al., 1991). Conditioning theorists are able to explain the avoidance symptoms of PTSD but have more difficulty accounting for persistent intrusive and arousal problems and some relevant empirical research (Foa & Riggs, 1993).

Information overload

In an attempt to understand the nature of traumatisation, Horowitz reconstrued some psychodynamic concepts by using information processing terms (Horowitz, 1986). Energy overload was replaced with the notion of information overload. Emotions are described as reactions to discrepancies between internal and external information. This is the "Mismatch Hypothesis". It is argued that this new information inherent in the traumatic experience will remain in active memory until it can be brought into accord with existing inner models. This is the central tenet of cognitive processing models of post trauma reactions (Creamer, 1993a). PTSD is seen as the result of an individual's inability to integrate a traumatic event into an existing cognitive schema. PTSD is conceived as an aberration of the normal response to stressful life circumstances. Traumatic events are repeated in active memory. This repetition overwhelms individual coping strategies

resulting in the development of a regulatory mechanism to inhibit the intrusions of the traumatising event. The inhibitory mechanism is represented by avoidance and numbing symptoms and they alternate with intrusive memories of the traumatic event. The numbing symptoms reduce anxiety and are seen as defensive attempts to slow down the cognitive processing of the traumatic event. When this inhibitory mechanism fails, traumatic memories intrude. Horowitz (1986) proposed a buffering role of quality social support on trauma symptomatology and suggested that the lack of positive and cohesive social networks may diminish the endurance of the traumatised person. He also suggested that traumatic events may alter the synaptic transmission of neurochemicals and result in fundamental changes in the arousal systems of traumatised people (Horowitz, 1986; Jones & Barlow, 1990).

Evaluation against the specified criteria

Horowitz's (1986) model is one of the more comprehensive explanations of traumatic stress reactions. He attempts to explain the development and the maintenance of each of the symptoms of PTSD. Horowitz discusses the role of moderating influences such as social support in the recovery environment. He is able to explain some relevant empirical research and the delayed development of PTSD (Jones & Barlow, 1990).

However, Horowitz's model has a number of problems. Like the repetition compulsion model from which it is partially derived, there is a theoretical reliance in Horowitz's model of an alternation between intrusive and numbing symptoms. There is no systematically obtained evidence to support this presumed alternation in symptoms. Jones and Barlow (1990) in trying to draw parallels between the aetiology of Panic Disorder and PTSD assume the same theoretical reliance, although they can only describe such alternation of symptoms as an "ubiquitous observation" (p. 305). Furthermore, the requirement for the concurrent presence of intrusive and avoidance symptoms does not allow for a diagnosis of PTSD (American Psychiatric Association, 1994). The "Mismatch Hypothesis" does not apply to those individuals who already have schemas of the world

as dangerous and the self as worthless (Foa & Riggs, 1993). In such cases, the traumatic event is presumably readily assimilated into existing schemas. The issue of differential development of PTSD in individuals exposed to the same stressor is also not explained by Horowitz (Horowitz, 1986; Jones & Barlow, 1990). Finally, Horowitz's model does not explain the creation of new inner schemas following traumatisation and therefore has difficulty explaining the experience of some positive long term consequences following traumatisation (Elder & Clipp, 1988; Kahana et al., 1987; 1988).

Computer analogy information processing theories

In the computer analogy information processing theories knowledge is accumulated during a life time and is represented in a person's memory by inner models or schemata. These inner models exert influence upon "the encoding and interpretation of new information that falls within the domain of that schema" (Foa & Riggs, 1993, p. 276). Several information processing hypotheses are proposed as likely mechanisms for PTSD symptoms for instance, storage, activation, relative accessibility, avoidance, retrieval, attentional bias, and arousal (Litz & Keane, 1989).

The most recent and comprehensive mainstream theoretical account of PTSD proposes a curvilinear relationship between existing schemas and the development of PTSD (Foa & Riggs, 1993). People with exaggerated notions of a safe world will be vulnerable to the mismatch hypothesis and unable to integrate their traumatic experience within existing schemas. Those with exaggerated pre-existing schemas of danger and personal incompetence will strengthen these maladaptive pre-existing views of the self and the world. Individuals with less rigid schemas who are able to see the world as sometimes safe, and sometimes dangerous, and themselves as sometimes competent, and sometimes incompetent, will have less difficulty incorporating the trauma experiences and should therefore recover more easily (Foa & Riggs, 1993). These authors go on to present an information processing model of the aetiology of PTSD. They attempt to

hypothesise about the relationships between personal, trauma, and recovery variables and traumatisation. In this model failure to successfully process a traumatic event can result in chronic PTSD.

Personal factors are described as pre-trauma schematic models. Some schematic models are said to include most life experiences especially those related to the self and the individual's perception of their world. The world schema is described in terms of a continuum of physical and psychological safety. The self schema is conceived along a continuum of competence and self-reliance. These dimensions are also discussed in terms of the predictability and controllability of individuals' interaction with their environment. These theorists suggest these schemas will be altered depending on the subjective impact of a life experience and the extent of the disparity between the new life experience and existing schemas. Chronic PTSD may develop when the trauma event violates existing positive schemas or when the trauma event further confirms existing negative schemas. Individuals with flexible schemas about safety and competence are said to be the least vulnerable to developing PTSD and the most likely to recover from traumatising events (Foa & Riggs, 1993).

Trauma variables are discussed in terms of the memories of the traumatic event by a traumatised person. These memories are said to be influenced by actual events and the psychological characteristics of the traumatised person. Foa and Riggs (1993) specifically apply their model to survivors of adult rape and they propose that this experience may result in an easily activated and intense fear structure. The memory structure is said to include representations of the actual rape and representations of the behavioural and physiological responses of the survivor. These traumatic fear memories which are said to be more intense, have a greater number of representations, a lower activation threshold, and to be more fragmented and disorganised than other fear memories. They hypothesise that content of trauma memory records will be significantly biased towards trauma relevant cues and towards remembering threat-related emotions like guilt, shame, and fear. Foa and Riggs (1993) suggest than repeated activations of each individual memory

fragment may be necessary to process the fragmented rape memory. They describe the necessity for the fear memory to be activated and for the presence of incompatible corrective cognitive and affective information to achieve a reduction in fear. The incompatible information is also said to promote alterations in meaning structures leading to a more organised memory record. Successful trauma resolution is seen to occur when the trauma memory is organised, develops new meaning, and is brought into accord with existing schemas.

The recovery environment is described as the memory records of events that have occurred since the traumatic experience and they are influenced by pre-trauma psychological characteristics and memories of the trauma. Foa et al. (1989) suggested that trauma memories include strong emotions such as fear, shame, guilt, disgust, and anger. There is a conflict between the need to organise the memories and make them compatible with existing schemas and the desire to avoid painful emotions contained in the memory record. Foa and Riggs (1993) say this conflict is manifested in an alternation between intrusive and numbing and avoidance symptoms. The failure of avoidance symptoms and the ubiquitous nature of environmental cues is said to explain the symptoms of heightened physiological arousal. Successful emotional processing is seen to result in more flexible schemas about safety and competence.

Foa and Riggs (1993) discuss the relevance of their theoretical framework in explaining the predictive value of personal characteristics (eg. prior psychiatric difficulties), trauma factors (eg. severity of the assault), and memories of post trauma processing (eg. social support) on the onset and maintenance of PTSD in survivors of rape.

Evaluation against the specified criteria

This theory acknowledges the significant and violating impact of a traumatic stressor; the important role of the cognitive processing of a traumatic event; and the contribution of personal, trauma, and recovery variables to mental health outcome. The model helps to

explain the differential severity of trauma symptoms in people, individual variation in response to similar traumatic events, and some recent relevant research. Workers from this tradition also report having successfully used exposure therapies and stress inoculation strategies to treat survivors of rape (Foa et al., 1991; Foa & Riggs, 1993).

However, this model is still somewhat detached from the feelings, environment, background, and historical context of the traumatised person (Mahoney, 1991). Foa and Riggs (1993) perform an unexplained conceptual leap, from the organising and assimilating of traumatic memories into pre-existing schemas, across to the trauma survivor developing more flexible schemas about safety and competence. Their approach provides no clearly articulated developmental process linking the past, present, and future of the traumatised person. Consequently, they have some problems explaining the process of relationships between personal, trauma, and recovery factors and traumatisation even though they have described the relevance of all these issues (Foa & Riggs, 1993). There is no explanation for personal growth or for moving towards optimal functioning. The constellation of positive and negative sequelae following traumatisation are not explained. Dissociative phenomena are mentioned but their relevance and meaning is not clearly articulated. The role of emotions other than fear is acknowledged but not specifically explained in their conceptualisation.

These workers seem to be primarily concerned with the validity of the client's memory of the traumatic event. This thinking underpins such therapeutic interventions as cognitive restructuring. Such a perspective is consistent with the notion of cognitive primacy and with cognitive rationalist tradition from which their information processing model is derived (Beck et al., 1979; Mahoney, 1991; Neimeyer, 1985a; Winter, 1992). The client's difficulties are assumed to result from cognitive errors. This analysis appears to imply that there is a correct way to view a traumatic event. These workers suggest one limitation to the use of their model namely, the scarcity of reliable and valid assessment techniques to measure schemata and schematic change (Foa & Riggs, 1993). Content analysis scales and repertory grids have been adequately fulfilling this function for some

decades in the clinical and research work of personal construct psychologists (Viney, 1988; Winter, 1992).

Biological

There are two major biological models of traumatic stress reactions namely, those concerned with changes in opiod levels and those concerned with changes in neuronal pathways. These conceptualisations are briefly described and then critically evaluated.

The opiod hypothesis

This is an extrapolation from the animal model of inescapable shock leading to the hypothesis that changes in levels of various neurochemical and endogenous opiods are the principal causes of PTSD symptoms (Krystal et al., 1989; van der Kolk et al., 1984). Changes in behaviour are mediated by neurotransmitter activity (Jones & Barlow, 1990). PTSD symptoms such as restlessness and psychological withdrawal are explained by drawing parallels with studies undertaken with non-human species. This work has resulted in a variety of drug treatments prescribed according to clinical presentation for example, anti-depressants and anxiolytics for anxiety and depressive symptoms, and adrenergic blocking agents for symptoms of nightmares or intrusive thinking. These pharmacological interventions have met with varying degrees of success in ameliorating the symptoms of PTSD (Solomon et al., 1992; van der Kolk & Saporta, 1993).

Changes in neuronal pathways

In this model traumatic events are said to cause permanent changes in, or sometimes the death of, neuronal pathways which may result in alteration in neurochemical activity (Kolb, 1987; 1993). PTSD symptoms are proposed to result from cortical and sub-cortical changes. These workers suggest that the heightened arousal characteristic of

PTSD may result in relatively stable neurobiochemical changes leading to cases of untreated PTSD that last for many years. These changes may be similar to the permanent damage reported in people's hearing following exposure to extreme noise (Jones & Barlow, 1990; Kolb, 1993).

Evaluation against the specified criteria

Biological models have provided some interesting hypotheses about the physiological mechanisms which may underlie the development and maintenance of PTSD. These theories have also informed the development of diagnostic tests which attempt to distinguish those people who have PTSD (Kolb, 1993).

Research that has examined traumatic memory indicates that trauma may interfere with something called "explicit memory" namely, the conscious processing and recall of experience. When people are traumatised they are said to experience something which is called "speechless terror" (van der Kolk, 1994). In effect, the overwhelming emotional impact of the event interferes with people's capacity to capture the experience in symbols or words (Le Doux, 1991; van der Kolk, 1994; van der Kolk & van der Hart, 1991). It is proposed that trauma does not inhibit another memory system called "implicit memory". Implicit memory is the type of memory used by animals, like cats and dogs. It is also the memory system that controls conditioned emotional responses, skills and habits, and sensorimotor sensations. There is evidence that as children mature, they shift from primarily sensorimotor (motoric action), to perceptual representations (iconic), to symbolic and linguistic modes of organisation of mental experience (van der Kolk & van der Hart, 1991). Trauma is said to be implicitly rather than explicitly processed. These implicit sensorimotor memories are disassociated from and inaccessible to explicit declarative memory. Disassociated memories are said to exist but they are not integrated into what we regard as normal everyday memory. Traumatic memories return intrusively in a disassociated form via the sensorimotor systems. They are often context-free and can

involve feelings, sounds, smells, tastes, and visual images in the form of flashbacks, nightmares, or traumatic re-enactments. Traumatic memories are often triggered when the person encounters reminders of the traumatic event and experiences extreme arousal. It is proposed that the re-release of stress hormones may actually consolidate the strength of the traumatic memory trace. Long term potentiation of neuronal connections made during intense autonomic arousal are hypothesised to be at the core of the intrusive reliving of traumatic experiences. This happens when people find themselves in a situation which resembles the original traumatic event. The traumatised person is seen as being developmentally stuck "as the trauma is fixed at a certain moment in a person's life, people live out their existences in two different stages of the life cycle, the traumatic past, and the bleached present" (van der Kolk and van der Hart, 1991 p. 448).

Unfortunately, the role of neurobiochemical systems is not nearly so clear as is proposed by these theorists. It is not yet known how these biological changes work. These writers do not explain the delayed development of PTSD symptoms in trauma survivors. The process of relationships between personal, trauma, and recovery factors is not explained. Emotional numbing symptoms seem to be simplified into analgesia precipitated by traumatic stressors. Opiod hypothesis theorists do not account for research demonstrating the moderating role of social support on PTSD symptoms nor the dose/response effect in traumatisation (Jones & Barlow, 1990). Research supporting permanent neuroanatomical changes in people with PTSD is also lacking at this time. This model fails to account for the presence of PTSD in some trauma survivors and not others. It also does not explain clinical and research evidence demonstrating that people can not only survive but thrive following the most horrific of traumatic experiences (Elder & Clipp, 1988; Kahana et al., 1987; 1988).

In general, biological explanations for traumatic stress reactions have often been used as an alternative rather than as a compliment to psychological explanations. They have frequently diverted attention away from the meaning of a traumatic life event for a particular person. Biological models have sometimes encouraged a view of traumatic

stress reactions where the survivor is seen as sick, and needing to be cured, rather than as playing a critical role in their own healing process. Biological formulations sometimes ignore the multiplicity of factors which influence the ongoing emotional and physical health of individuals (Bannister, 1985; Winter, 1992).

Socio-Cultural

In these models individual physiological, emotional, and cognitive factors may reciprocally interact with the person's social environment and culture. These social and cultural variables are important in determining what constitutes meaning, in influencing the interpretation of events, and in directing behaviour. There has been an observation of consistency of central PTSD symptoms across cultures and societies. PTSD may represent a universal human response to the cognitive disruption of a sense of order and meaning. It is proposed that social and cultural variables may be especially relevant in influencing individual expressions of various symptoms like emotional withdrawal, numbing, and shame (Boehnlein, 1989).

Combined theoretical models

A number of writers have attempted to integrate some very disparate theoretical traditions to generate clinical treatment models which have utility in facilitating the recovery of traumatised individuals (Foa et al., 1991; Herman, 1992; Loo, 1993; Marmar & Horowitz, 1988; McCann & Pearlman, 1990; Scurfield, 1985). These workers have developed sensitive and comprehensive analyses of the processes of traumatisation. They have suggested sequential, concurrent, and multiple treatment interventions which not only acknowledge individual differences, but also the complexity and the extreme human suffering associated with traumatic stress reactions.

Evaluation against the specified criteria

These models have some intuitive appeal. As a result of their all encompassing nature, they are not entirely inconsistent with some of the other theoretical formulations, including the one I will present in the next chapter.

Many proponents of sociocultural models attempt to synthesise various aspects of the other theoretical models. Sociocultural models do not fulfil any of the identified criteria for a model of traumatic stress reactions. The assumptions underlying combined theoretical traditions are very dissimilar. The eclecticism of combination approaches is to be applauded in a field where there are still many unresolved issues and trauma survivors report difficulties in so many areas which are central to their well-being. Eclecticism appears to have been accepted at the cost of theoretical integration. Scant attention has been paid to the fact that these diverse interventions have competing and contradictory views of an individual's circumstances, of their capacity to change, and of their ability to influence the outcome of events (Bannister & Fransella, 1986; Harter, 1988; Karst, 1980; Mahoney, 1991; Neimeyer, 1988; 1993; Neimeyer & Harter, 1988; Winter, 1992). Despite their attributes, these mixed formulations do not fulfil the criteria for a model of traumatic stress reactions.

Summary and Conclusions

In this chapter the strengths and limitations of current formulations and the need for an integrative theory of traumatic stress reactions has been confirmed. Four major groups of theoretical models of traumatic stress reactions have been critically evaluated against specific established criteria. The results of this evaluation are illustrated below in Table 4.1. I have noted the major attributes of each of these formulations and identified the benefits of technical eclecticism in treating trauma survivors. Some important explanatory factors appear to be repeated across most of the major formulations. These predictive influences include constitutional and neurophysiological factors, pre-existing

vulnerabilities, past life experiences, the magnitude, subjective impact, and severity of trauma exposure, the psychological proximity and individual meaning of particular traumatic experiences, and the quality, meaning, and availability of social networks. I have indicated that a lack conceptual clarity is the cost for the use of combined clinical treatment models which are often informed by an understanding of these predictive influences but have contradictory views of the human condition and change processes. In the next chapter a personal construct model of traumatic stress reactions will be presented and evaluated against the criteria. This new model will attempt to subsume these recurring explanatory factors.

Table 4.1: Major Theories of Traumatic Stress Reactions.

Criteria Met	Psycho-dynamic	Biological	Cognitive / Behavioural Information / Processing	Socio-Cultural
The relationship between personal, trauma, recovery factors and traumatisation.	✘	✘	✘	✘
The constellation of negative and positive sequelae	✘	✘	✘	✘
The differential severity of symptoms	✔	✘	✔	✘
The presence/absence of PTSD in individuals exposed to similar traumatic events	✔	✘	✔	✘
Recent relevant research	✘	✘	✔	✘

Chapter Five

A Personal Construct Model of Traumatic Stress Reactions

A Personal Construct Model of Traumatic Stress Reactions

This presentation of a personal construct model of traumatic stress reactions will make its assumptions explicit. I will articulate a proposal for the relationships between personal factors, traumatic events, recovery environments, and traumatisation. An explanation for the intrusive, avoidant and numbing, and physiological symptoms of PTSD will be offered. The multiplicity of positive and negative consequences that can follow exposure to traumatic events will also be addressed. I will attempt to explain individual variation in symptom presentation and in reaction to similar traumatic events. This theoretical model will undertake to subsume the important predictive influences which appear to be repeated across most of the major formulations of traumatic stress reactions and in the relevant empirical literature. I will discuss how a personal construct theoretical model of traumatic stress reactions is different to the other models reviewed. Finally, a summarising comment on the value of personal construct concepts for enhancing our understanding of traumatic stress reactions will be given.

Assumptions of a Personal Construct Model of Traumatic Stress Reactions

This formulation of traumatic stress reactions is consistent with, but extends the models of psychological functioning and disorder propounded by Kelly (1955), constructivist metatheory as outlined by Mahoney (1988; 1991), and the frameworks for adult development discussed by Viney (1992a) and Botella and Gallifa (1993). This working theoretical model of traumatic stress reactions is based upon the assumptions of proactive cognition, morphogenic nuclear structure, self-organising development, and an holistic view of human functioning. These assumptions are discussed in more detail below.

Proactive Cognition

We come to events as embodied, thinking, anticipating, feeling, and experiencing beings. We do not simply react to events. There is a fluid and reciprocal relationship between us and our personal, social, and occupational environments, our history, our sensations, our culture, our context, and our behaviours. Conditions can be favourable or unfavourable for the formation of new personal theories and ongoing optimal personal development (Kelly, 1955; Mahoney, 1988; 1991).

Morphogenic Nuclear Structure

We are organised so that centre or core processes determine and influence peripheral processes. Core processes are concerned with experiences of reality, self or identity, value or worth, and power. "Core constructs are those which govern a person's maintenance processes - that is those by which he maintains his identity and existence" (Kelly, 1955, p. 482). Core and peripheral processes are organised into a coherent system and in this model are called constructs. Constructs that influence other constructs in the system are described as superordinate to them, while these latter are described as subordinate. The highest level of superordinancy is constituted by core constructs. Construct systems can change if they are able to deal with new events, that is, the system is permeable. Peripheral constructs are easier to change since they are less central and important to existence. All constructs, both core and peripheral, are bipolar. One pole, the emergent pole, indicates a way in which repeated patterns of people or things are similar. The other pole, the implicit end, indicates repeated patterns of how people or things contrast. Bipolar constructs provide people with alternate paths with which to predict and interpret events (Botella & Gallifa, 1993; Kelly, 1955; Mahoney, 1988, 1991; Neimeyer, 1987b; Viney, 1992a; Winter, 1992).

Self-Organising Development

A person's choices are focussed on increasing the likelihood of successful predictions rather than simply maximising his or her level of pleasure. In his "Man the Scientist" concept, Kelly (1955) saw us all as scientists whose ultimate aim was to predict and control our worlds. Each person is continually trying to make meaning out of experiences. Sometimes personal theories are partially or completely inadequate to make meaning out of particular experiences. Our least viable predictions or constructs are more likely to be eliminated than our more viable constructs (Mahoney, 1988; Neimeyer, 1987a; Winter, 1992). The process of transition in changing personal meanings or construing is generally cyclical and involves three major cycles of construction namely, Circumspection-Preemption-Control, the Creativity Cycle, and the Experience Cycle (Kelly, 1955; Viney, 1992a).

Circumspection-Preemption-Control (CPC)

The CPC cycle is concerned with decision-making. Circumspection is where we take a broad view of our relevant field. Preemption is where we make a choice to deal with some aspects of the field rather than others in order to focus on a particular issue. Control is when we behave according to the decisions we have made.

The creativity cycle

The creativity cycle is associated with the development of new constructions and consists of two contrasting processes namely, loose and tight construing. Loose construing allows people to engender a wide variety of new ideas and meanings for life events. Their anticipations about events can vary but they are related to each other in a recognisable way. Tight construing enables people to test the viability of these new ideas or meanings by using unchanging predictions. Alternation between loose and tight construing is

essential for the development of new constructs or for variation in the way old constructs are applied (Kelly, 1995; Viney, in press).

The experience cycle

The successful completion of experience cycles is critical to ongoing psychosocial development and increasing cognitive complexity. The experience cycle is characterised by anticipation, investment, encounter, confirmation and disconfirmation, and constructive revision. Anticipation is associated with personal hypotheses about the meanings of situations and life events. These hypotheses are hierarchically organised within a broader frame of reference. Just as scientific hypotheses are derived from a more comprehensive theory, anticipations are connected to the individual's personal construct system. Investment and encounter are concerned with the way people approach or encounter life events with varying degrees of personal investment. These life events may be associated with difficulties which are circumscribed and resolvable (well-structured), or they may be associated with problems involving no apparent resolution for example, moral dilemmas (ill-structured). Confirmation and disconfirmation are concerned with whether the predictions or anticipations derived from a person's construct system are validated or invalidated. Constructive revision is the optimal result of the invalidation of a person's construct system and involves the development of new personal theories. The consequence of successfully completing an experience cycle can be a more complex personal construct system. A person can become more differentiated, integrated, and flexible, and increasingly capable of negotiating life events (Botella & Gallifa, 1993; Kelly, 1955; Mahoney, 1988, 1991; Neimeyer, 1987a; Viney, 1992a; Winter, 1992).

An Holistic View of Human Functioning

People are whole beings with changing feelings, thoughts, and ways of behaving. The arbitrary division often made between cognition, emotion, and behaviour is seen as

theoretically and practically limiting. Thinking and feeling are equal ways of knowing. Notions of cognitive primacy are rejected (Kelly, 1955; Mahoney, 1991; Neimeyer, 1987a).

Relationships Between Personal Factors, Characteristics of Traumatic Events, Recovery Environments, and Traumatisation

Traumatisation sometimes occurs when an event is construed as a "threat" in Kellian terms that is, "the awareness of imminent comprehensive change in one's core structures" (Kelly, 1955, p. 489). Traumatisation is a threat to the core processes or core roles, of an individual, organisation, community, or society. These core processes are concerned with identity or self, sense of reality, value or worth, and power (Mahoney, 1991). Core roles involve "one's deepest understanding of being maintained as a social being" (Kelly, 1995, p. 502). Traumatisation, depending on its severity and its unique psychological proximity for an individual, is accompanied by threat, anxiety, fear, guilt, shame, and anger. These emotions have very specific definitions and are explained as teaching people something about the adequacy of their attempts to make meaning from experiences (McCoy, 1981; Neimeyer, 1993). Threat is "awareness of imminent comprehensive change in one's core structure". Anxiety is "awareness that the events with which one is confronted lie outside the range of convenience of the construct system". Fear is "awareness of imminent incidental change in one's core structure". Guilt is "awareness of dislodgment of the self from one's core role structure" (Kelly 1955, p. 561). Shame is "awareness of dislodgment of the self from another's construing of your role" (McCoy, 1977, p. 121). Anger can be used as a vehicle for personal empowerment or destruction and is the awareness of invalidation of constructs leading to hostile or aggressive behavioural options (Higgins, 1994; McCoy, 1977).

Personal Factors

There is an extensive literature trying to link both personality traits and other personal characteristics to traumatic stress reactions. Some workers have argued that these personal vulnerabilities or strengths play a causal role in determining who will be traumatised by particular traumatic events (Fenichel, 1945). Others have been less definite in suggesting that these factors actually determine outcome following exposure to a traumatic event, but support the moderating influence of what are sometimes proposed to be fixed and static traits such as "Neuroticism", "Hardiness", "Resiliency" and "Locus of Control" (Antonovosky, 1979; 1987; McFarlane, 1989; Solomon et al., 1989; Wilson, 1989; Wilson et al., 1988). Other personal factors have often been treated in the literature as if they were absolute characteristics with predictable and unvarying influences on the way someone might respond to a traumatic event. For example, a personal or family history of psychiatric disorder has often been treated in this way.

Despite methodological difficulties with many studies, there is clear empirical support for the moderating role of personality processes and past experiences on mental health outcome, following exposure to traumatic stressors. Some of these personal risk factors were introduced in Chapter Three and they include a history of family psychiatric disorder, parental poverty, a history of child abuse, family dysfunction, female gender, younger age, prior physical illness, neuroticism, introversion, prior psychological difficulties, behaviour problems in childhood, early separation from parents, lower standard of formal education, extroversion, and prior trauma exposure (Bremner et al., 1993; Breslau et al., 1991; Burton et al., 1994; Creamer et al., 1989; Davidson et al., 1991; Fairbank et al., 1994; Green et al., 1990; Helzer et al., 1987; Khamis, 1993; Kramer & Green, 1991; Kulka et al., 1990; McFarlane, 1989; Norris, 1992; Roth et al., 1990; Shore et al., 1989; Zaidi & Foy, 1994).

Personality processes do seem to moderate the perception, evaluation, and cognitive processing of traumatic experiences (Wilson et al., 1985; Solomon et al., 1989). It is my contention that these empirical findings are consistent with and more

eloquently accounted for by a personal construct model of traumatic stress reactions than by previous explanations articulated in the literature. In this model, people's choices are directed towards maximising the extent to which they can predict the world, not towards maximising their pleasure as is proposed in some hedonistic explanations of behaviour (Kelly, 1955; Winter, 1992). It is proposed that personality "traits" such as "Neuroticism", "Hardiness", "Resiliency", and "Locus of Control" are not absolute and unchanging but rather fluid and fundamental personal theories or core processes confirmed by experiences. People bring these personal theories (personal construct sub-systems) to life events resulting in specific predictions about how their owners will cope with stressors. These personal theories are complex and interrelated systems of meaning (Neimeyer, 1987a). Individual characteristics and past personal experiences influence and are influenced by these dynamic personal theories in a reciprocal and ongoing way.

Neuroticism, in particular, has been found to predict PTSD in firefighters and young urban adults (Breslau et al., 1991; McFarlane, 1989) and it had a consistent relationship with psychological distress in a police team involved in the recovery of human bodily remains (Thompson & Solomon, 1991). In this model, a person who scores highly on a Neuroticism scale (Eysenck & Eysenck, 1975) may have a core role of construing themselves as a worrier, as someone who is highly strung, and to whom catastrophic things might happen. This is described as having a negative personal theory. In these circumstances the loss of "Neurotic" symptoms such as continually feeling miserable and being worried about health might be threatening because of the guilt evoked by a comprehensive assault to the person's core role. Ironically, the persistence of neurotic symptoms may be less painful and uncomfortable than a full scale assault to a critical part of how the person has maintained themselves as a social being (Kelly, 1955; Winter, 1985). In this model, the person scoring highly on the Neuroticism Scale would be anticipating further stressful life events and catastrophic outcomes from such events. This is sharp contrast to viewing these neurotic symptoms as simply an indication of a heightened level of physiological arousal (Eysenck & Eysenck, 1975). In this model, such heightened arousal could be construed in a variety of ways which would be

consistent with the person's past life experiences and their anticipations about their current and future circumstances. The person scoring highly on a Neuroticism Scale is not perceived as a passive victim of biological processes, unconscious libidinal forces, or inexpedient reinforcement contingencies but as someone actively searching for meaning in their life experiences. It is simply more psychologically viable for the person to maintain their neurotic symptoms. In maintaining their neurotic symptoms, the person avoids a threat to their core processes and the relatively far more uncomfortable feelings associated with such a threat (Eysenck & Eysenck, 1975; Kelly, 1955; Winter, 1985). The psychological processes through which a person creates such meanings for life events are viewed as similar to the epistemological processes that are involved when new knowledge is created in a professional discipline (Novak, 1990).

Recruits come to a Police Academy with already established but continually changing personal theories. The structure and content of these theories and their relationships will be dependent to a large extent on previous validation and invalidation experiences of prior predictions from their family and friends, educational or work environments, and the wider society. The nature of the theories will also depend upon what recruits have made of these validation or invalidation experiences.

Police recruits are already in a state of transition when they enter a Police Academy. They are either experiencing all or some of the following life changes: undertaking a new course of study and experimenting with a new occupational role; being separated, often for the first time, for extended periods from family and friends; being socialised into a paramilitary organisation; undertaking the developmental tasks of late adolescence or early adulthood; or alternatively as a more mature student undertaking a significant career change, involving study, with major personal and social implications; and experiencing the upheaval involved in geographical relocation, sometimes on several occasions.

All recruits will be experiencing some uncomfortable feelings signalling the need for revision of their construct systems (Viney, 1980). Recruits will experience a range of

feelings of differing intensities, depending upon whether a particular life event signals the need for a change in the very essence of the way they view their personal power, their personal worth, their sense of reality and their identity (core processes), or some less significant change (peripheral processes). Their feelings and the intensity of these feelings will also vary depending upon whether this change is all encompassing (comprehensive) or relatively trivial (incidental) (McCoy, 1977). Consequently, the psychological proximity of life events will depend on people's unique construct system. Two broad options for action, with infinite possibilities for individual variation, are available in response to these feelings. Two extreme responses will be discussed.

Aggressive elaboration of the personal construct system

If people join policing when they are developing optimally towards cognitive complexity, they will have presumably been living, working, or playing in environments that were favourable to the formation of new constructs. Some police will be aggressively elaborating their personal construct systems. Aggressiveness has a very special meaning in this context. It means "the active elaboration of one's perceptual field" (Kelly, 1955, p. 508). It involves the tendency to make a choice that extends a person's predictive system without endangering it (McCoy, 1977). Aggressive elaboration can involve the formation of new constructs or new meanings for particular life experiences; extending (broadening the range of convenience) of personal theories in order to make them better predictors of future life events, that is, finding new ways of applying the old theories; or increasing the internal consistency of their personal theories so recruits can make more viable predictions (Winter, 1992).

Police recruits continuing to choose an "aggressive" option for action will be moving from being relatively cognitively simple and literalistic, especially if they were in late adolescence when they entered the Police Academy, through the processes of successive completion of experience cycles (Botella & Gallifa, 1993). They will be allowing themselves to feel the discomfort and disruption of sometimes painful and

extremely uncomfortable emotions, signalling the need to develop new constructs or new meanings for experiences. This will happen even when they have to cope with ill-structured problems such as difficult moral choices and ethical dilemmas (Botella & Gallifa, 1993). They will be functioning optimally and becoming increasingly cognitively complex. These individuals will be able to deal with new events because they will be able to change their personal theories that is, they will have permeable superordinate constructs. These police will eventually view even powerful, painful, and extremely uncomfortable feelings as opportunities to change positively. They will allow themselves to express their feelings in a safe and validating environment. When such an environment is not available they will continue to try to find it. They will develop ubiquitous and quality social networks with widely dispersed dependencies (Kelly, 1955; Walker et al., 1988). They will risk experimenting in their attempts to develop new meanings for stressful life events including traumatic events. It is proposed that people are not bestowed with fixed personality attributes that protect them from traumatic life events. These people have worked in the past and continue to work very hard to form creative new ways of understanding such life events. They can be helped or hindered at every point in their journey through life by environments and people that are favourable or unfavourable to optimal functioning. This explanation involving aggressive elaboration and successful completion of experience cycles towards cognitive complexity, allows for clear links to be drawn between past, present, and future behaviour, although it does not prescribe individual solutions for any particular life event. This proposal also provides for the psychological acceleration seen in some trauma survivors following recovery from traumatisation towards increasing psychological integrity and differentiation (Elder & Clipp, 1988; Herman, 1992; Kahana et al., 1987; 1988).

Hostile efforts at confirmation of predictions without personal change

Other police will already be filtering their experiences through failed predictions of their environment when they are recruited. This is hostile behaviour in Kellian terms. It is "the

continued effort to extort validational evidence in favor of a type of social prediction which has already proved itself a failure" (Kelly, 1955, p. 510). Those police who have formed fundamental personal theories with predictive value in an invalidating and unfavourable environment, are likely to have negative views of themselves, their value, their perceptions of reality, and their personal power. They are more likely to anticipate and construe events as traumatising. When they do experience traumatising events, such events will again confirm the viability of their negative views and make these negative personal theories even stronger. These police may experience various problems coping with the transitional life events described above. They will be more susceptible to traumatisation and its negative sequelae when exposed to traumatic events.

This hostile behaviour may only occur following traumatisation in those police previously coping aggressively with transitional life events and still, until that point in time, moving towards cognitive complexity. These police may have found the experience of extremely painful and excruciatingly uncomfortable feelings signalling the need for comprehensive and immediate core process change (traumatisation) just too overwhelming. It is argued that this will happen to nearly all individuals at certain levels of severity and magnitude of such life events for example, high combat exposure, political torture, sadistic child abuse (Cunningham & Silove 1993; Foy et al., 1987; Herman, 1992, 1993; Oksana, 1994; Smith, 1993). No one is immune to ongoing full-scale assault to core processes or ongoing dislodgment from core roles. This accounts for the dose-response phenomena now clearly documented in the trauma literature by explaining how such horrific life events could represent a direct and prolonged threat to the very psychological survival of any human being (Fairbank et al., 1994; March, 1993). Police in these circumstances may have experienced a single or series of traumatising events which have represented a full scale assault on their sense of reality, identity, personal value, and personal power. They may have felt completely dislodged from their core roles. In addition, they may be in a personal, social, or occupational environment which is unfavourable to the formation of new personal meanings.

In such situations personal theories which involve a positive view of self, value, reality, and power are very likely to fail them. Personal theories involving a negative view of these core processes will be made stronger. Either way such police will be left in a disorganised, fragmented, and highly vulnerable state. In such a state they are likely to continue to use shattered or now even more negative personal theories in future situations.

The symptoms of PTSD are ways of surviving a wholesale assault on the people's very essence without endangering whole systems. These people are engaged in creative but ultimately self-destructive attempts to avoid the feelings they fear will psychologically, socially, occupationally, or even physically annihilate them. They are making desperate attempts to protect themselves from further threat by staying awake, fighting, and becoming detached and estranged from relationships so that they will not be hurt again. They want confirmation of their old shattered personal theories and the predictions that arise from these theories. Police in this situation will now not be completing experience cycles and moving towards increasing cognitive complexity. Instead, they will be anticipating life events and predicting the future through constructs that failed to predict an event that was traumatising. As a consequence, the personal theories of these police officers will be predicting further threat. They will be stuck in the anticipation stage of the experience cycle and this may help explain the severity and persistence of PTSD symptoms in some individuals (Neimeyer, 1987a). After traumatisation, those trying to extort evidence for their old theories without change will have inflexible and rigid views of themselves, their world, and their future.

Some new police recruits will be moving towards cognitive complexity, successfully completing experience cycles, and remaining open to new experiences in a reflective and flexible way. Most will be in the middle of the vulnerable process of forming new constructs in response to external life events. Others will already be filtering their experiences through failed predictions of their environment. All police recruits do not start this process from the same position. When faced with stressful transitional or traumatising events, police will choose aggressive or hostile behavioural options or

various combinations of both (Kelly, 1969). "Hostile" behaviour may manifest itself in various trauma symptoms. The occurrence, unique individual expression, and duration of these urgent behavioural questions will depend on the structure and content of people's personal construct systems, characteristics of traumatic events, and the favourableness of recovery environments.

Characteristics of Traumatic Events

In this personal construct model of traumatic stress reactions I take critical, rather than the radical, constructivist views. This means that I assume there is a true reality and that individual constructions of that reality are equally true for each person (Mahoney, 1991).

These is substantial research evidence suggesting that there are particular characteristics of a traumatic event which are more likely to make the event traumatising for an individual. Some specific risk factors that appear to occur across many different traumatic events were introduced in Chapter Three including the magnitude and severity of trauma exposure, perceived threat to life and limb, the psychological proximity of the event, receipt of intentional injury or harm, exposure to grotesque sights, the violent or sudden death of a loved one, learning of exposure to a noxious agent, causing death or severe harm to another, multiple versus single exposure, bereavement and loss, and the non-accidental death of children (Breslau & Davis, 1987; Brown & Campbell, 1990; Burton et al., 1994; Card, 1987; Coman & Evans, 1991; Creamer et al., 1989; Elder & Clipp, 1988; Fairbank et al., 1994; Foy et al., 1987; Goldberg et al., 1990; Green, 1993; Green et al., 1985; 1989; Helzer et al., 1987; Kilpatrick et al., 1989; Kulka et al., 1990; Lee & Stoneham, 1994; Lipson, 1986; March, 1993; Pynoos et al., 1987; Rowan & Foy, 1993; Savery et al., 1993; Shore et al., 1989; Speed et al., 1989; Spielberger et al., 1981; Winfield et al., 1990).

These studies often assume that it is possible to disentangle the subjective impact and intensity of a particular traumatic event from specific characteristics of the traumatic event itself (March, 1993). These investigations have varied in their methodological

sophistication and their findings have sometimes also been in conflict. However, it is clear that the severity and magnitude of traumatic events are extremely important and that individuals do not have to be victims to develop PTSD following a traumatic event.

In this model, the common thread linking the traumatic events in these studies is that the events were construed as a "threat" in Kellian terms to core processes, including core roles, for a significant number of the trauma survivors. This explanation is consistent with empirical findings where greater appraisal or perception of life threat during a traumatic event is predictive of PTSD symptoms (Creamer et al., 1989; Kilpatrick et al., 1989; Riggs et al., 1992; Rowan & Foy, 1993). This proposal also finds support in studies demonstrating that perceived uncontrollability, unpredictability, perceived degree of life threat of the traumatic event, subjectively experienced exposure to injury and death, loss of significant others, and psychological isolation after the trauma are the best predictors of PTSD (Foa et al., 1989; Wilson et al., 1985). This proposal is further supported by the positive correlations found between perceived uncontrollability and measures of re-experiencing and arousal symptoms in adult survivors of rape (Kushner et al., 1992).

Most police will be exposed to traumatic stressors as part of their operational policing experience (Lee & Stoneham, 1994; Spielberger et al., 1981; Westerink, 1990; Williams, 1987). There is evidence that some of these traumatic stressors will be construed as a threat to core processes by some officers (Duckworth, 1986; Gersons, 1989; Goodson, 1983; Griffiths & Watts, 1992; Lipson, 1986; Manolias & Hyatt-Williams, 1993; Neilson, 1981). This model predicts that there are some characteristics of traumatic events that are more likely to represent a threat to core processes. For example, if police identify with the victims, if police feel powerlessness to influence the outcome, if the event involves impossible moral choices and ethical dilemmas (ill-structured problems), and if police perceive that their own life is in danger. These assertions are consistent with other evidence suggesting the important role of personal identification with a traumatic event on the subsequent development of trauma symptoms (Creamer et al., 1989; Hodgkinson & Shepherd, 1994; Lipson, 1986). The profoundly

negative impact of a psychologically close relationship between a perpetrator and a child has also been extensively documented in cases of child sexual assault (Bass & Davis, 1988; Herman, 1992; Oksana, 1994; Rowan & Foy, 1993; Smith, 1993). There is evidence that greater appraisal or perception of life threat is predictive of PTSD (Creamer et al., 1989; Kilpatrick et al., 1989; Riggs et al., 1992; Rowan & Foy, 1993).

These research results support a critical role for the psychological proximity of life events. They also indicate that the ongoing threat represented by repeated exposure to potentially traumatising events is conducive to traumatisation and unfavourable to recovery.

Recovery Environment

The trauma literature has often focussed on individual ways of coping as being a critical factor in determining who will be traumatised and by what events. Intervention efforts have frequently been targeted under the best conditions at strengthening these individual ways of coping. Under the worst conditions the traumatised individual experiences secondary victimisation and is labelled mentally ill or seen as a malingerer. This experience has been well-documented in the lives of many returning war veterans and has occurred for many other traumatised people (Herman, 1992; Wilson et al., 1988). Such a legacy for police is typified by the statement of one senior police officer - "If it is too hot in the kitchen get out".

In this model it is suggested that societies, organisations, and families are often more willing to help facilitate change in one or several traumatised individuals or alternatively to discard, discipline, or incarcerate them, than to look at making fundamental changes in their own ways of functioning. This is because of the threat represented by traumatised individuals and traumatic events to their own core processes and core roles. Traumatised police people may challenge the core processes of policing organisations that is, male, paternalistic, strong, unemotional, hierarchical, and goal-oriented. As a consequence, the managers of policing organisations may experience threat

and anxiety and sometimes react to the trauma survivor with hostile behaviour. It is immediately easier for them to extort confirmation for outdated theories and ways of operating than it is to experience the upheaval involved in making fundamental structural changes and developing new understandings of these traumatising events and their causes (Raphael & Wilson, 1993; Toohey, 1993).

Consistency and perceived quality of social support has been shown to have a positive effect on the personal, social, and occupational functioning of traumatised people as I have indicated in Chapter Three (Creamer et al., 1989; Dutton et al., 1994; Hodgkinson & Shepherd, 1994; Kahana et al., 1987; 1988; Keane et al., 1985). Individuals who are exposed to traumatic stressors appear to be helped by understanding their personal reactions and feeling a sense of security (Creamer et al., 1993b). There have not previously been any theoretically coherent explanations for this empirical evidence. I suggest that social support is only one element influencing the favourability of an environment.

An environment favourable to recovery from traumatisation will have the following characteristics. First, it will be validating to the formation of new personal theories (core processes). It will gently confirm a sense of personal power, unique identity, positive personal value, and a reality that can make meaning out of traumatising experiences. It will allow for the gradual development of continuity between the past, the present, and the future of the traumatised person (Viney, 1993). Second, it will be safe enough for the expression of powerful and fundamental emotions. Finally, it will be conducive to trial and error experimentation or the trying on of new personal meanings (Kelly, 1955).

Unfortunately, in their working environment police are likely to be repeatedly exposed to ongoing traumatic stressors representing to some repeated exposure to threat to core processes. Threat provides the most unfavourable condition of all for the formation of new constructs (Kelly, 1955; Watson, 1993). Aspects of the political and social reality of policing, police-community relations, organisational climate,

psychological and welfare interventions, and currently available sources of job satisfaction may combine to create conditions largely unfavourable to the formation of new constructs for traumatised police officers or for police officers experiencing transitional life events. This view is supported by research findings on the negative impact of policing environments (Coman & Evans, 1991; Savery et al., 1993; Winter, 1993). The work of Applegate and his colleagues (1989) is of particular interest in this respect. They found that length of service as an operational police officer was associated with less well developed personal construct systems. They also found that the degree of abstractness of a police person's frame of reference predicted the use of persuasion messages that acknowledged the individuality of the receiver (person-centred). This was in contrast to the link between concreteness and persuasion messages that relied on roles and other external characteristics (position-centred). The relationship between person-centred communication and cognitive abstractness is strong and well-documented (Applegate et al., 1989).

Sadly, the experience of police is not unique. Recovery environments appear to be unfavourable for many traumatised people. This has been documented in veterans, people surviving sadistic torture, internment, domestic violence, and child sexual assault (Herman, 1992; Loo, 1993; McCann & Pearlman, 1990; Oksana, 1994; Raphael & Wilson, 1993; Wilson et al., 1988). Ideally, all people would live, work, and play in environments which were optimal to their functioning. Not only would these environments decrease the vulnerability of people to traumatisation but they would also be conducive to recovery. In policing organisations creating such environments involves extensive systemic changes. This is equally true of families, communities, and societies.

People who develop trauma symptoms also have a right to treatment opportunities which respect their efforts, acknowledge their courage, recognise their simultaneous strength and fragility, and empathise with the difficulty of their struggle. In this model, such interventions attend immediately to urgent safety and survival issues. Treatment is highly individualised and acknowledges the fluid and reciprocal relationship between people, their context, and their behaviours. Interventions are characterised by trust and

confidentiality. Helping relationships are ethical, collaborative, gentle, and provide consistent support. The traumatised person is able to freely experience and express all feelings at their own pace (Neimeyer & Harter, 1988). Individuals seeking help are empowered with resources and abilities to choose their own life course. Helpers facilitate a sense of continuity between the past, present, and the future of the traumatised person (Kelly, 1955; Mahoney, 1991; Neimeyer, 1993). The therapeutic strategies used to facilitate this process can be technically eclectic providing they are both integrated and consistent with the assumptions of a personal construct model of traumatic stress reactions. For example, the exposure based treatments of the conditioning theorists can be seen as graduated trial and error experiments in formulating new meanings for traumatising events. The free association of psychodynamic formulations could be used, in collaboration with a trauma survivor, as a way of gently loosening constructs (Bannister & Fransella, 1986; Neimeyer, 1988; Winter, 1992). Such an approach would allow for both treatment versatility and theoretical coherence (Harter, 1988; Neimeyer, 1988; 1993).

Explanation for the Intrusive, Avoidant and Numbing, and Physiological Symptoms of PTSD

Core processes represent the very essence of people's sense of power, identity or self, sense of value or worth, and reality (Mahoney, 1991). These are the constructs that allow people to make their most fundamental predictions about themselves, their world, and their future. These personal theories represent their current selves and are essential to their psychological survival. Under conditions of threat they experience a wholesale and sudden assault to these core processes, potentially shattering their previous identities and evoking their most powerful emotions including overwhelming terror, powerlessness, rage, and humiliation.

The full spectrum of negative sequelae following traumatic events will have psychological survival value for some individuals. This includes PTSD and associated problems such as substance abuse, overwork, overeating, depression, obsessive compulsive behaviour, panic disorder, somatic complaints, and seemingly entrenched character and personality changes diagnosed as Borderline Personality Disorder, Complex PTSD, and Multiple Personality Disorder (Gunderson & Sabo, 1993; Herman, 1992, 1993; Oksana, 1994; Smith, 1993). In this personal construct model the symptoms of PTSD have psychological and physical survival value until traumatised people are able to form new core constructs and to develop new meanings to understand traumatic events. They allow traumatised people to continue to make predictions and receive some validation, however minimal. The discussion of the symptoms of PTSD is separated into the DSM-IV symptom groupings for ease of explanation but these symptoms are interrelated and overlapping (American Psychiatric Association, 1994).

Intrusive or Re-experiencing Symptoms

Intrusive or re-experiencing symptoms are reminders of the traumatising event. These reminders include dreams, flashbacks, and psychological and physical distress associated with traumatic events. Such symptoms have survival value when people enact any one of a number of aggressive or hostile behavioural options such as seeking help or hiding under the house. The powerful emotions (if feelings are not disassociated from the content) and physiological reactivity that sometimes accompany these reminders can be seen as recollections of the threat represented by the traumatic event. These forceful prompts signal the need for revision of the construct system if the experience cycle is to be completed. If people have no superordinate meanings for these events, these intrusive recollections will continue to occur (except when the numbing and avoidant symptoms are successful). These recollections signal the need for a new and better prediction system. Dreams, nightmares, and flashbacks of traumatising events may also be seen as attempts to loosen and thereby reduce the anxiety associated with the inadequacy of the

construct system (Kelly, 1955). Traumatic events represent threat to the psychological, social, occupational, and perhaps physical integrity of the people involved and they generate overwhelming emotions. Unless the avoidant and numbing symptoms are completely successful people keep re-experiencing traumatic events until they can understand them and predict when they might happen again.

Re-enactment of the traumatic event

This phenomenon is not discussed in DSM-IV for adults, although it is described in children (American Psychiatric Association, 1994). Re-enactment of traumatic events in adults is well-documented in the literature on traumatic stress reactions (Herman, 1992; 1993; McCann & Pearlman, 1990; Wilson, 1989). In this personal construct model, it is part of the way unresolved traumatising events continue to intrude into the lives of trauma survivors. It is consistent with my description of the "hostile" behavioural option after exposure to traumatising life events. This behaviour is seen in its most literal form amongst some survivors of horrific domestic violence or political captivity who will sometimes return to terrible situations of abuse even when in a situation seemingly capable of sustaining economic and social independence. Herman's detailed descriptive analysis of traumatic bonding is useful in understanding this behaviour (Herman, 1992). The same phenomena are seen in some Vietnam veterans who experienced high combat exposure and yet returned for another tour of duty and swam with dangerous sharks for recreation (Wilson, 1989). I suggest that all trauma survivors need to keep re-enacting aspects of the traumatic event for which they have formed no new meanings. This helps to understand the entrenched victimology seen in some survivors of traumatic events. The exercise of hostile behavioural option also explains the less sensational re-enactments so characteristic of trauma survivors who are developmentally stuck and not completing experience cycles.

Persistent Avoidance of the Trauma or Numbing

Avoidance and numbing symptoms are also ways that people survive extreme psychological injury and protect themselves from any future such injuries. These strategies may be essential survival tools in traumatic environments or environments unfavourable in other ways to recovery. Such survival skills can be creative and may include avoiding feelings, conversations, activities, places, or people associated with traumatic events. Disassociating from the entire content or from the sights, feelings, sounds, or smells, of traumatising events, are useful means of avoiding overwhelming experiences. Being detached and estranged from others, being unable to envisage a future, and having a restricted range of feelings are other ways people try to keep themselves safe from traumatising events.

These strategies can be seen as efforts to protect the core processes of traumatised people from further threat or dislodgment by allowing them to act, think, or try to feel, as if threatening events did not occur. This happens to allow traumatised people to continue to make predictions with the old construct system and to avoid enormously painful feelings which signal a need for immediate and sometimes complete revision of core processes. Some people will go to great lengths, sometimes in the most destructive ways, to avoid this challenge to core processes.

These methods are usually only partially successful and necessitate marked constriction in the social, perceptual, and emotional worlds of people with PTSD. This explains the relationship difficulties and extreme social isolation often seen in trauma survivors. They may go from one extreme form of behaviour to the other extreme for example, from complete celibacy to sexual promiscuity. Promiscuity may also be associated with re-enactment of the traumatic event for survivors of child sexual assault. This is "slot-rattling" or a change in behaviour related to going from one pole of the construct to the other pole without changing the underlying construct or personal meaning (Kelly, 1955; Winter, 1992). Such behaviour has been documented in police going from law enforcement to law breaking and violence (Winter, 1993).

Substance abuse is often used to assist both survivors and their supporters in avoiding the threats to core processes that are represented by traumatic events. Alcohol and other drug abuse may also be seen as attempts at loosening to reduce the anxiety associated with the inadequacy of the construct system (Kelly, 1955). If trauma survivors do not allow themselves to feel the emotions associated with traumatic events they may not feel as immediately vulnerable but they also sentence themselves to not being able to experience other feelings such as love, compassion, warmth, joy, and spontaneity. Instead they may be cynical, detached, authoritarian, and cold, as has been reported in police (Klockars, 1985; Reiner, 1985; Van Maanen, 1978).

The complete disassociation of the content of traumatic events or of identities formed during traumatic experiences serves people as the most extreme ways of protecting core processes from further threat and the overwhelming emotions associated with such threats (Bass & Davis, 1988; Herman, 1992; Lifton, 1986, 1993; Smith, 1993; Oksana, 1994). Amnesia for childhood experiences of abuse is well-documented and is most often found in adult survivors who have experienced particularly violent and prolonged abuse, multiple perpetrators, physical injury, and threat of death upon disclosure of the abuse (Briere & Conte, 1993; Cromwell et al., 1993; Herman, 1992; Oksana, 1994; Smith, 1993). It is suggested that although the links between the content of the person's experience of the traumatic event and the rest of the construct system are seemingly unavailable, the powerful emotions generated by the assault to core processes remain in various forms for example, body armouring, somatic complaints, body memories, alternative identities. These ways of surviving are precipitated thereafter by events generating similar feelings to traumatic events. The emotions generated by these latter events will be construed as a threat to core processes when there are no new meanings to understand the original events that were traumatising.

There are few theoretical conceptualisations that attempt to account for PTSD in perpetrators of violence. One such formulation is the doubling phenomenon described by Lifton when discussing the brutalising and horrific "experiments" performed by Nazi doctors. In doubling, the Nazi doctors were said to be making a psychological adaptation

to avoid objective and superego anxiety. This adaptation allowed them to select the people who would be killed in the gas chambers and to inflict sadistic torture in the name of healing the Nordic race. Lifton suggests that these doctors formed a part self which could function autonomously from the other self and perform evil acts. The formation of a part self is described as a way of allowing these doctors to kill and maim others to overcome their own death anxiety and avoid guilt (Lifton, 1986; 1993). In a personal construct model of traumatic stress reactions, trauma symptoms, including extreme symptoms such as disassociated identities, sometimes follow in such cases because of dislodgment from core roles evoking guilt or shame (Kelly, 1955; McCoy, 1977). Such reactions are compatible with Kelly's (1955) fragmentation corollary which says "a person may successively employ a variety of construction systems which are inferentially incompatible with each other" (p. 83). Complete disassociation can develop as a way of surviving a wholesale assault to core processes including core roles (Cromwell et al., 1993; Landfield, 1982; Leitner, 1987). The phenomenon of disassociated identities is described amongst survivors of organised sadistic child abuse who are often forced by means of extreme physical or psychological coercion to commit violent acts towards others. These situations are deliberately orchestrated by perpetrators so that the traumatised and disassociated identities of these horrifically victimised children will perform acts of unbelievable violence on behalf of the group. These children are then told they acted by choice and are murderers (Oksana, 1994; Smith, 1993).

Traumatising events do not have to be completely dissociated from consciousness. For example, an adult daughter does not have a police officer's grandchild in the most recently approved child restraint, although it is still one that meets safety standards, and the police officer reacts in an extremely angry way which is out of proportion to the current situation. For him it has become a matter of life and death. He has not resolved his feelings concerning a motor vehicle accident involving a drunk driver and the slow and agonising death of an infant about the same age and appearance as this grandchild. He has transferred these feelings to the current situation. This police officer has not developed new meanings to complete this very challenging and disturbing

experience cycle and is "hostilely" using failed predictions from his old personal theory about being able to keep his family completely safe. This explanation of the avoidance and numbing symptoms of PTSD helps account for some research findings. Winter (1993) compared the personal construct systems of police officers whose response to stress involved law breaking or violence with the construct systems of police referred for psychological assessment for other reasons. Winter found that police involved in law breaking or violence displayed tighter construct organisation and used fewer constructs concerned with the intensity of feelings (Winter, 1993). Cromwell et al. (1993) found evidence for the disassociation of trauma-related constructs in traumatised Vietnam veterans and survivors of a mass shooting compared to their non-traumatised counterparts (Cromwell et al., 1993). Lipson (1986) found that avoidance coping was related to the severity of PTSD in a controlled study of police attending a civilian massacre.

Delayed onset of PTSD

Most theoretical models have difficulty explaining the delayed onset of PTSD symptoms. In delayed PTSD individuals appear to function adequately and then only later develop trauma symptoms. A personal construct model of traumatic stress reactions can account for this phenomenon in at least two ways. First, these people were not really asymptomatic at all. They were simply not experiencing intrusive symptoms because the numbing and avoidance symptoms were largely successful. These people may have completely disassociated from the content of the traumatic event. Such a delay in intrusive and physiological symptoms may also be assisted by substance abuse, overwork, excessive exercise, overeating, and a myriad of other ways to avoid feelings. Emotions generated by later life events, such as feeling especially vulnerable when physically ill, may be construed as threats to core constructs when there are still no new meanings to understand the original events that were traumatising. Second, events may be only later construed as threats to core processes. An example is the young police officer who only

later developed PTSD when she heard that the horrifically mutilated murder victim was a woman she had grown to know and like during her community policing duties (Higgins, 1994).

Heightened Physiological Arousal

For traumatised people traumatic events are not over. They have not completed the experience cycle and are stuck at the point of traumatisation. These symptoms of heightened arousal can be explained as an attempt to protect the person from the next traumatising event. They are consistent with Kelly's (1955) fundamental postulate which says "A person's processes are psychologically channelized by the ways in which he anticipates events" (p. 46). In the case of unresolved traumatisation people are anticipating further threat. The continued "hostile" use of failed constructs explains symptoms of irritability and destructive expression of anger. People can use anger and rage as a vehicle for personal empowerment and protection or destruction. When anger and rage are used to extort evidence for failed theories they can result in extreme physical and emotional violence directed towards others or the self. These behaviours, along with emotional numbing and detachment, help to explain the severe interpersonal problems of many trauma survivors. Without the constructs to give meaning to and predict the next traumatic event, trauma survivors need to stay vigilant for possible threats. This explanation is consistent with the two most robust findings on the biology of PTSD namely, higher baseline sympathetic nervous system activity and hyperreactivity to trauma-related cues (Pitman, 1993). It is not surprising that traumatised people find it difficult to relax into peaceful and refreshing sleep when they are expecting a further threat to core processes. Nor is it astonishing that such people would have difficulty concentrating when they truly believe, sometimes with great current validity, that they may be dealing with a situation of life and death any second. An exaggerated startle response can be understood in terms of a personal construct definition of startle, "sudden awareness of a need to construe events" (McCoy, 1977, p. 117).

This explanation helps us understand some important empirical findings. Litz and Keane (1989) found that people with PTSD respond to perceived threat using a survival mode of functioning that was formally adaptive for example, hypervigilance, exaggerated startle response, and selectively attending to internal and external threat cues. Foa et al. (1991) found an attentional bias towards trauma-related information in adult rape survivors with PTSD. Gerardi et al. (1989) found that psychophysiological measures can successfully discriminate veterans with and without PTSD at rates ranging from 77% to 95% (Gerardi et al., 1989).

The Differences Between a Personal Construct and other Models of Traumatic Stress Reactions

This personal construct model of traumatic stress reactions is quite distinctive in terms of its basic assumptions. The high level of abstractness of this formulation allows it to subsume many of the therapeutic techniques derived from other conceptualisations of traumatic stress reactions while still remaining rationally integrated (Kelly, 1955; Winter, 1992).

Psychodynamic models of traumatisation are based on a hydraulic model of the person who is seen to be driven by libidinal forces. In a personal construct model people are viewed as inherently active and self organising. There are some similarities between psychodynamic and personal construct formulations and many of the defence mechanisms of the psychoanalytic tradition have been reconstrued in personal construct terms (Kelly, 1985; Neimeyer, 1980; Rychlak, 1981; Ryle, 1985; Winter, 1992). The psychodynamic concept of secondary gain is not entirely different to the idea of the survival value of trauma symptoms. However, symptoms are not viewed as a symbolic and substitute means of gratifying unfulfilled desires (Winter, 1992). This personal construct model of traumatisation is not based on a defensive theory of human motivation and sees behaviours like therapeutic resistance as representing particularly vulnerable

areas in the meaning systems of the traumatised person (Neimeyer, 1980). In psychodynamic models the traumatised person is seen as having insight if they accept therapeutic interpretations and showing resistance if they reject such analyses (Kelly, 1955). This personal construct model of traumatisation emphasises the creation and development of meaning by the traumatised person rather than probing into the unconscious to find and then therapeutically interpret hidden intentions (Epting, 1984; Kelly, 1955). There is considerable similarity in the way psychodynamic and personal construct theorists use therapeutic transference and in the latter model of traumatisation, the therapist is construed as central in validating the development of new meanings to accommodate the traumatising event. However, this personal construct model of traumatisation views the therapeutic relationship as empowering and collaborative rather than as vehicle for the transference of childlike dependencies (Kelly, 1955). Both psychodynamic and personal construct formulations of traumatisation consider changes in behaviour and experience and are concerned with intentions and meanings but the former have mechanistic origins while the latter have phenomenological derivations (Viney, 1987; Winter, 1992).

In contrast to conditioning theories of traumatisation, this model is not deterministic, static, or manipulative in its interventions. It does not assume that the future of all people must represent a simple repetition of their prior learning histories and it does not try to modify behaviour without taking account into the underlying meaning of various behaviours. This personal construct model of traumatisation has no difficulty with the client experimenting with different kinds of behaviours prior to fully understanding the meaning of their symptoms, providing the primary researcher is the client rather than the therapist (Kelly, 1970; Winter, 1992). In this personal construct model of traumatisation interventions such as systematic desensitisation to traumatic experiences would not be considered in terms of conditioned relationships between stimuli and responses, but in terms of the psychological survival value of particular symptoms. More sophisticated conditioning theories have begun to consider their exposure based therapies as disconfirming expectancies about catastrophic consequences.

Such workers have also considered the important relationship between symptoms and predictability (Rachman, 1983; Seligman & Johnson, 1973; Winter, 1992). In this personal construct model of traumatisation, various behavioural strategies could be used for clinical intervention. For instance, relaxation techniques could be used as a way of loosening construing and experimenting with states of lowered physiological arousal. Self-monitoring and behavioural analyses could be used as ways of tightening more viable personal constructs about identity, worth, perceptions of reality, and personal power to influence the outcome of events. Collaboratively negotiated "homework" exercises could be viewed as ways of examining and testing the viability of new personal meanings for traumatic experiences and associated symptoms. The complexity of the construct system could be gently extended by the use of such interventions as activity scheduling. The dilemmas in the construing of relationships and the symptoms of emotional numbing could begin to be resolved by the use of behavioural contracts concerning such negotiated tasks as the constructive physical expression of anger. Graduated exposure to previously avoided reminders of a traumatic event may also encourage dilation or the broadening of the perceptual field to allow for re-organisation of personal meanings on a more comprehensive level (Dunett, 1985; Kelly, 1955; 1970; Neimeyer, 1985c; 1986; Rachman, 1983; Seligman & Johnston, 1973; Viney, 1981; Winter, 1988; 1992). In this personal construct model of traumatisation, the therapeutic use of such behavioural strategies may teach the traumatised person something about the past psychological survival value and future viability of their symptoms. Such strategies would only be used to facilitate new meanings for trauma symptoms and for understanding subsequent behavioural changes. This stands in sharp contrast to the mechanistic and reductionist assumptions of conditioning theories of traumatisation. The persistence of self-destructive behaviour is difficult to explain in terms of the environmental contingencies and reinforcement schedules of conditioning models but understandable when viewed in terms of a traumatised person's attempts to anticipate future experiences and to confirm prior predictions (Butt & Bannister, 1987; Kelly, 1969;

Winter, 1992). In this personal construct model of traumatisation it is seen as important to look beyond the face value of symptoms and examine their purpose.

This personal construct model of traumatisation shares some commonalities with cognitive/behavioural and information processing of traumatisation, especially theories which employ the concept of schemata. Some personal construct theorists have even thought of schemata as similar to a cluster of constructs (Neimeyer, 1985b). However, a personal construct formulation of traumatisation is based on a more holistic approach to human functioning which does not view emotions and behaviour as secondary to cognition. There are also other incompatibilities at a metatheoretical level between these formulations. Information processing terms are derived from a mechanistic theoretical tradition and are often preoccupied with corrective techniques. A personal construct model of traumatisation assumes that knowledge and experience involve the proactive participation of individuals in protecting and perpetuating their psychological integrity. In contrast, information processing theories derive from the tradition of realism which is concerned with the validity rather than the viability of the clients' difficulties (Mahoney, 1988; 1991; Winter, 1992). Therapies derived from a personal construct model of traumatisation attempt to facilitate overall development towards increasing cognitive complexity in the traumatised individual. Strategies derived from information processing models such as cognitive restructuring appear to urge the traumatised person to adopt the therapist's apparently more valid and rational perceptions of the traumatising event (Foa & Riggs, 1993; Harter, 1988). In a personal construct model of traumatisation the very psychological essence of the traumatised person is examined rather than simply encouraging the person to talk to themselves differently about the traumatic event (Epting, 1984; Rowe, 1978). The latter approach may potentially precipitate "slot-rattling" rather than basic changes in the way the person makes meaning out of a traumatising event (Huber & Altmaier, 1983; Kelly, 1955; Winter, 1992). Powerful and negative emotions are viewed by information processing theories of traumatisation as problematic and in need of control or elimination. A personal construct model of traumatisation explains overwhelming feelings as primitive and powerful ways of knowing that the person's

meaning system is inadequate to accommodate the traumatising event. Intense feelings and periods of disorganisation are seen as normal parts of development. It is quite feasible to have concurrent intrusive and avoidant and numbing symptoms. There is no theoretical reliance on an alternation between these two symptom groupings of PTSD. In a personal construct model of traumatisation mental health is related to personal theories, previous validation and invalidation experiences, behavioural choices, characteristics of traumatic events including their psychological proximity, and the favourableness of the recovery environment (Kelly, 1955; Mahoney, 1991).The relationship between all these factors is viewed as fluid and reciprocal rather than as static and unchanging.

This personal construct model of traumatisation is not incompatible with some of the various biological hypotheses that have been propounded to explore trauma symptoms and in particular the processes of traumatic memory (van der Kolk, 1994). Kelly (1955) clearly stated that "any event may be viewed either in its psychological or in its physiological aspects" (p. 11). These models could be viewed as complementary rather than as mutually exclusive. Chronic states of heightened arousal are explicable in personal construct terms as failures to anticipate the meaning of traumatic life events (Mancuso & Adams-Webber, 1982). Anti-depressant or anxiolytic medication could precipitate a reconstruing of identity in the traumatised person but this reconstruction of self may be as a sick patient (Dawes, 1985; Winter, 1992).

Sociocultural and other combined theoretical models are not rationally integrated although they share the technical eclecticism of a personal construct model of traumatisation. The theoretical traditions informing psychodynamic, cognitive behavioural and information processing, biological, and socio-cultural traditions have very different views on human nature, individual plasticity, personal power to influence the outcome of events, the self, adaptation, and the change process. In contrast to other formulations of traumatic stress reactions, a personal construct model of traumatisation emphasises lifelong development and considerable plasticity within individual limits. In this model, there is considerable opportunity to influence the outcome of events by virtue of behavioural choices but these exist within the constraints of individual contexts. The

development of self is seen as essential to all viable personal change. Adaptation is seen as organising individual activity in co-ordination with constantly variable opportunities and confinements. The process of change results from repeated experimental efforts to gain dynamic equilibrium (Mahoney, 1991).

Evaluation of a Personal Construct Model of Traumatic Stress Reactions

It is proposed that this personal construct formulation meets the criteria identified for a theoretical model of traumatic stress reactions. A viable and integrated explanation for the relationships between personal factors, characteristics of traumatic events, aspects of the recovery environment, and traumatisation has been suggested. This model encompasses the spectrum of negative and positive sequelae following traumatic events, including PTSD. The differential severity of symptoms in people has been examined in some detail as has the presence of PTSD in some individuals but not others experiencing similar trauma. A parsimonious yet eloquent explanation for recent research bearing on these issues has been provided. The model provides a testable conceptual framework which can assist in efforts to prevent and treat the debilitating effects of unresolved traumatisation. A developmental process linking the past, present, and future, of the trauma survivor without prescribing individual solutions for any particular life event has been proposed. Aspects of this personal construct model of traumatic stress reactions have been successfully tested with the cooperation of two large samples of police. The research programme in which this testing has been conducted will be described in the next chapters.

Chapter Six

The Research Programme for Traumatic Stress Reactions in Police

The Research Programme for Traumatic Stress Reactions in Police

In this chapter I will identify my major objectives in undertaking this research programme with police. I will provide a rationale for the methodology of this research programme among a variety of other possible options. I will discuss some of the inherent difficulties in studying trauma in the workplace and some of the methodological strengths of the approach which was selected. I will discuss the ways in which the research hypotheses are informed by a personal construct model of traumatisation and the earlier reviews of the theoretical and empirical literature. I will describe the sampling strategy and the psychometric properties of the various measures chosen to test the hypotheses. The significance and some of the constraints of the methodology will then be outlined. I will specify my research question and hypotheses and then briefly summarise this chapter.

Goals

This research programme has three major goals.

The first goal is to empirically evaluate some aspects of a personal construct model of traumatic stress reactions. This research will endeavour to specifically investigate some predictions about the influence of personal factors, characteristics of traumatic events, and aspects of the recovery environment on the presence and severity of trauma symptoms in police. Predictions about how personal theories and trauma symptoms may change over time will also be empirically evaluated.

The second goal is to compare the levels of traumatisation in inexperienced police and constables with one year of operational experience. This research aims to establish some normative baseline epidemiological data on the levels of Posttraumatic Stress Disorder in this high risk occupational group.

The third goal is to identify and elaborate upon some of the major theoretical and empirical implications of a personal construct model of traumatisation for policing organisations. This research programme will undertake to focus on contextualised, practical, and systemic changes which may assist in the prevention and treatment of traumatic stress reactions in police.

Overview of the Methodological Options

There are number of theory relevant measures that on face value could have be used to evaluate some aspects of this personal construct model of traumatisation. However, this research programme included a repeated measures study which investigated changes in personal theories and trauma symptoms over time. Many constructivist research methods are state measures and do not provide consistency over time. It is also difficult to generalise from the findings of methods which are exclusively focussed on individuality and uniqueness if one is also undertaking to establish normative baseline epidemiological data (Viney 1992b). It was not possible to use content analysis of verbal communications as a way of testing the research predictions despite their significant advantages in facilitating a minimally intrusive, collaborative, and participatory research approach between investigators and participants (Viney, 1988; 1992b; Winter, 1992). Most of the content analysis scales measure transitory psychological states which confound with the symptoms of PTSD. For example, the Sociality Scale was designed to measure the extent to which a person is currently experiencing satisfying interpersonal relationships (Viney & Westbrook, 1979). Traumatised police would be likely to have low scores on Sociality because significant interpersonal problems are part of the diagnostic criteria for PTSD. Such a prediction would be circular. Similar problems apply to the use of the Total Anxiety, Hostility (Gottschalk et al., 1969), and the Cognitive Anxiety Scales (Viney & Westbrook, 1976). This research programme set out to empirically test the influence of some variables over time and would not have been well-served, in this regard, by other theory relevant state measures such as narrative reconstructions, self-characterisations, or

repertory grids (Clarke, 1991; Kelly, 1955; Neimeyer, 1993; Viney, 1992b;1993, Winter, 1992). Some constructivist methods of data collection emphasise the important contribution of both the data collector and the data contributor to research investigations. These methods acknowledge the critical influence of personal understandings of the research process by the investigator and the research participants and emphasise the impact of their interactions (Viney, 1992b). Unfortunately, the collection of such important qualitative information was not possible because of time constraints on the availability of the research participants.

A Rationale for the Chosen Methodology

Current Problems in Investigating Trauma in the Workplace

A multiplicity of methodologies and assessment instruments of varying psychometric value are currently being used in the study of work-related trauma. This phenomenon creates difficulties in comparing studies. Most research in this area is also constrained by being retrospective, cross-sectional, and uncontrolled (Paton & Smith, 1995). It has been cogently argued that the assessment of work-related trauma should be consistent with the symptom groupings for Posttraumatic Stress Disorder in the Diagnostic and Statistical Manual for Mental Disorders (DSM) because this would allow investigators to compare their findings (American Psychiatric Association, 1987; 1994; Paton & Smith, 1995). The development and nature of traumatic impact in occupational settings is not well understood and it has recently been described as the highest priority for investigations into work-related trauma (Paton & Smith, 1995). Research directed towards the identification and investigation of populations at risk for traumatisation is also lacking and would allow for the development of important normative data. The risk factors for traumatisation have often been assessed by looking only at the frequency of exposure to potentially traumatising events, rather than also investigating the subjective impact of these events. Consistent methodology has not been applied across different occupational groups and situations (Baum et al., 1993; Green, 1994; Paton & Smith, 1995, Raphael et

al., 1989). There are very few theoretically driven studies into work related trauma and many of the measures used have not been consistent with sound psychometric practice (Baum et al., 1993; Paton & Smith, 1995). Few studies into work related trauma have focused on identifying and testing the characteristics of events which are likely to be traumatising to individual employees. It has been suggested that the content of symptom inventories need to be initially informed by DSM symptoms for PTSD and then there is a need for ongoing psychometric evaluation of these measures (American Psychiatric Association, 1987; 1994; Paton & Smith, 1995). There is a also a need for baseline symptomatology data for high-risk occupations to enable reliable assessment studies to investigate the magnitude of work-related trauma. These studies need to take account of the influence of personal, trauma, and recovery variables on mental health outcome (Paton & Smith, 1995). The post event recovery environment has recently been described as an under researched area (Griffiths & Watts, 1992; Paton & Smith, 1995; Prince, 1992). The importance of longitudinal designs in work-related trauma has been repeatedly emphasised because of their ability to facilitate the investigation of change over time and the drawing of causal inferences (Lidgard, 1986; Paton & Smith, 1995).

Methodological Strengths of the Research Programme

The development of a conceptual model of traumatic stress reactions has allowed for the clear articulation of explanatory variables which are expected to be associated with trauma symptoms in police. The research participants in these studies were drawn from the general population of novice police recruits and probationary constables police in NSW, Australia. The sample was both large and apparently representative of these groups. The State of NSW has the largest policing organisation in Australia with 12845 serving police employees as at the end of December, 1994. Standardised, reliable, and valid measures have been used where possible and a structured interview was conducted to make a diagnosis of PTSD. Hypotheses were tested using a unified statistical process involving exploratory data analysis, statistical model formulation, model fitting, model checking,

interpretation, and inference (Hamilton, 1992; Weisberg, 1985). Such an approach has considerable advantages over the use of seemingly distinct and unrelated statistical techniques (Hamilton, 1992; Weisberg, 1985). In the first study, novice recruits acted as a comparison group for police who had twelve months operational experience (probationary constables). In a second study, these novice recruits were also tested again after twelve months of operational experience. Significant attempts have been made to identify and take account of potentially confounding variables. The design of this research programme will allow for comparisons with other epidemiological investigations of traumatic stress reactions and many of the findings should be both replicable and generalisable within various limitations which will be explored below.

There are two major ways in which the differences between two groups can be compared that is, between two independent groups (the between subjects design) or between the same group from one occasion to another (the within subjects design). All research designs have some advantages and some disadvantages. The cross-sectional study had the disadvantage of needing to control for individual variation between the novice police recruits and the probationary constables. In the repeated measures study many, but not all, of these individual differences from time one to time two were eliminated. However, familiarity, practice, learning, and motivational changes may have significantly altered the way in which police in the repeated measures study answered the questionnaires on the second occasion (Burns, 1990). Both between subjects and within subjects designs were used in this research programme to maximise the likelihood that, between them, they would begin to provide a systematic empirical evaluation of some aspects of a personal construct model of traumatic stress reactions.

The Links Between Theory And Research Design

The extensive theoretical and empirical literature on PTSD and police stress (which was critically reviewed in Chapters Two, Three, Four, and Five) has repeatedly identified the

important influence of personal, trauma, and recovery factors in the development and maintenance of traumatic stress reactions. Key concepts arising both from this review of the currently available information and a personal construct model of traumatisation, emphasise the role of constitutional and neurophysiological factors; pre-existing vulnerabilities and past life experiences; the magnitude, subjective impact, and severity of trauma exposure; the psychological proximity and individual meaning of particular traumatic experiences; and the quality, meaning, and availability of social networks.

It has been argued that a personal construct model provides a theoretically integrated and viable explanation of traumatic stress reactions which subsumes these key concepts and addresses some previously inadequately answered questions. These questions relate to the process of relationship between personal factors, characteristics of traumatic events, aspects of the recovery environment, and traumatisation. The questions are also concerned with individual variation in response to similar traumatic events and differential severity and duration of symptoms in traumatised people. Issues such as the dose/response effect and psychological growth and acceleration following traumatisation are discussed. The model attempts to explain traumatisation in people who have not been the object but the perpetrators of threat and the subjective impact of particular characteristics of traumatic events and recovery environments.

Predictions Arising from a Personal Construct Model of Traumatic Stress Reactions

Not all aspects of this personal construct model of traumatic stress reactions can be evaluated in one doctoral research programme, but the influence of some particular explanatory variables will be empirically evaluated. In this section I discuss the personal, trauma, and recovery factors which are anticipated to predict trauma symptoms in police.

Personal Factors

It has been proposed that police recruits do not start from the same position of vulnerability to stress when they join policing organisations. Police are expected to differ according to their unique personal construct systems at recruitment and according to their behavioural choices in response to life events at various points in their career. In broad terms, they may choose between fully experiencing painful feelings, completing experience cycles, and moving towards cognitive complexity or continuing to use negative personal theories in a "hostile" manner. Those police who are not completing experience cycles and who have impermeable constructions of their personal power, their personal worth, their reality, and their identity are more likely to anticipate and construe life events as traumatising. It is expected that trauma symptoms are particularly likely to occur in those police who have impermeable negative personal theories. Some of these police may have spent their childhood in families where personally significant adult members were manifesting enduring psychological symptoms as a result of not completing experience cycles. Such an environment would not be conducive to the formation of new constructs and ongoing development towards cognitive complexity. It is also expected that police who have long histories of confirmation of negative views of themselves and the world will be more vulnerable to potentially traumatising events. Such continual disconfirmation of self affirming predictions may be evidenced by previous experiences of childhood abuse or neglect. Potentially traumatising events will confirm the predictive power of these negative personal theories and make them even stronger.

Characteristics of Traumatic Events

It is anticipated that the presence and severity of trauma symptoms will depend upon the unique construct system of individual police, their previous validation and invalidation experiences, aggressive and hostile behavioural choices, and on the magnitude, nature, and subjective impact of exposure to life events. A personal construct model of traumatisation predicts that nearly all individuals will develop trauma symptoms at certain

levels of severity, magnitude, and subjective impact of exposure to some life events. It is anticipated that these trauma symptoms will have psychological and physical survival value until the traumatised person is able to form new core constructs and to develop new meanings to understand such events. In this model no one is immune to full-scale assault to core processes or dislodgment from core roles. Some types of life events are expected to represent a threat to the core processes of almost everyone and will therefore be more likely to precipitate trauma symptoms. It is expected that these events are likely to involve horrific sights, unjust death, or represent a significant threat to the person's physical and psychological integrity. In this model, the frequency of exposure to such life events weighted by their subjective impact on the police officer is expected to be associated with trauma symptoms. These symptoms will be more severe and of longer duration if police are in a personal, social, or occupational environment which is unfavourable to the formation of new personal meanings.

This personal construct model predicts that there will be significant individual differences in the psychological proximity of most stressful life events. Psychological proximity depends upon whether a particular event signals the need for a change in the very essence of the way the police person views their power, worth, reality, identity, and social roles or some less significant change. Feelings and their intensity are envisaged to vary depending upon whether this change is all encompassing or relatively trivial. It is anticipated that events involving significant personal identification or a perception of life-threat are more likely to represent a threat to core processes. These events are expected to be more likely to precipitate overwhelming emotions such as threat, anxiety, fear, guilt, shame, and anger which signal the need for a change in the construct system and to sometimes be associated with trauma symptoms.

The Recovery Environment

This personal construct model of traumatic stress reactions proposed that an environment favourable to recovery from exposure to traumatic events would have the following

characteristics. First, it would be validating to the formation of new personal theories by gently confirming a sense of personal power, unique identity, positive personal value, and validating a reality that could make meaning out of traumatising experiences. This would allow for the gradual development of continuity between the past, present, and future of the traumatised person. Second, it would be safe enough for the expression of powerful and fundamental emotions. Finally, it would be conducive to experimentation or the trying on of new ways of construing the self and the world. The reviews in Chapters Two and Five of the contextual factors impacting on policing environments suggested that such occupational milieus may not be conducive to optimal adult development or recovery from stressful life events. This finding is also anticipated because operational police are likely to be repeatedly exposed to ongoing traumatic stressors representing to some repeated exposure to threat to core processes. The literature reviews suggested significant structural and fundamental problems in the way some policing organisations select, train, and promote their employees. Some policing organisations appear to be characterised by inappropriate managerial styles, job designs, and systems for police accountability. Some policing environments seem to discourage self-disclosure or the expression of feelings. The currently available primary and secondary interventions into traumatic stress reactions in police have not been systematically evaluated and their therapeutic efficacy still remains unclear. It is expected that these factors combine to create an occupational environment for some operational police which may be unpredictably threatening and unsafe, disempowering, devaluing, and invalidating. Such an environment is unlikely to be supportive of the expression of powerful emotions, personal initiative, or inevitable mistakes. The literature review in Chapter Two indicated that the weight of evidence suggests that some policing environments may not be favourable to the formation of new personal theories and the completion of experience cycles because of these contextual factors. It is therefore expected that even quite inexperienced police will be more likely to exhibit trauma symptoms than novice police recruits. It is also proposed that the perceived availability of different sorts of social support for police will not be associated with the amelioration of

trauma symptoms in a clear way, because it is only one element in recovery environments. Some policing environments appear to have other contextual features which may exert a powerful negative influence on the likelihood of people forming new personal meanings with which to understand and recover from traumatising life experiences.

Sampling Strategy

This research programme involved an opportunity sample drawn from the population of all new police recruits and probationary police constables in the State of NSW, Australia. The research participants were volunteers from a number of naturally occurring and accessible police academy classes. No alternative sampling strategy was possible in this research programme because of the considerable problems associated with obtaining permission and gaining suitable access to the population. Opportunity sampling is often used in other trauma research because it is impossible to predict when a traumatising event will occur. Opportunity sampling may somewhat limit the generalisability of the results obtained from this research programme. These constraints are related to the increased possibility of sampling error compared to such alternatives such as random, systematic, stratified, cluster, or stage sampling methods (Burns, 1990).

Despite these difficulties with possible selection bias the sample size was large and representative of the general police population of novice recruits and police with one year of operational experience. In Chapter Seven I have presented a comparison of this sample of research participants to the bigger population of all NSW police recruits entering policing between the years 1990-1994 and to Victorian police in training in 1994. The participation rates in this research programme were also high. In the cross-sectional study 98% of the new recruits and 92% of the probationary constables participated in the study. The response rate in the repeated measures sample was 86%. This is a very high response rate for a longitudinal study investigating traumatic stress reactions (Baum et al., 1993). More detailed information on the characteristics of the

research participants, procedures, and findings are provided in Chapters Seven and Eight.

Specific Measures used to Evaluate Aspects of a Personal Construct Model of Traumatic Stress Reactions

Personal Factors

The self-report questionnaires which were used to collect information on demographic details, background factors, relevant reported past history, and personal theories will be described in this section. A questionnaire to assess demographic details, background factors, and reported relevant history of the research participants was specifically designed for this research programme. The content of the questionnaire drew on key concepts from the relevant empirical and theoretical literature (Bremner et al., 1993; Breslau et al., 1991; Burton et al., 1994; Creamer et al., 1989; Davidson et al., 1991; Fairbank et al., 1994; Green et al., 1990; Helzer et al., 1987; Khamis, 1993; Kramer & Green, 1991; Kulka et al., 1990; McFarlane, 1989; Norris, 1992; Roth et al., 1990; Shore et al., 1989; Thompson & Solomon, 1991; Zaidi & Foy, 1994) and was largely consistent with a core methodology recommended for disaster research (Raphael et al., 1989). The strength of this questionnaire was on its face validity and no attempt was made to investigate its psychometric properties.

Demographic details

Questions were asked concerning such personal characteristics as age, gender, marital status, number of children, spouse and relatives in the police service, completion of Higher School Certificate (HSC) or equivalent, highest completed qualification, primary ethnic origin, primary language spoken at home, religious affiliation, mother or female guardian's occupation, father or male guardian's occupation, personal occupation prior to

joining the police service, geographical location during the previous twelve months, and state of overall physical health.

Background factors and reported relevant past history

Questions were asked concerning such background details as personal and family history of emotional difficulties, parental marital discord, perception of childhood happiness, previous history of child sexual abuse, childhood physical abuse, and childhood emotional abuse or neglect, previous exposure to traumatic events, motivation for joining the police service, coping style, and current and past use of alcohol, tobacco, caffeine, and prescribed medications.

Personal theories

In this research programme the Neuroticism Scale of the Eysenck Personality Questionnaire (EPQ) was used as a measure of negative personal theories because of its relative stability over time (Chattopadhyaya et al., 1990; Eysenck & Eysenck, 1975; Gong, 1984; Hosokawa, et al., 1993; Munro, 1986; Sanderman et al., 1991; Wilson & Doolabh, 1992). This consideration was especially important for the design of the repeated measures study. The use of the Neuroticism Scale has also been suggested in a core methodology for disaster research because of its correlations with psychophysiological responses and psychological disorder in community samples (Raphael et al., 1989). Neuroticism Scale scores predict PTSD in firefighters and young urban adults at risk (Breslau et al., 1991; McFarlane, 1989). Neuroticism Scale scores had a relationship with psychological distress in a police team involved in the recovery of human bodily remains (Thompson & Solomon, 1991). Neuroticism Scale scores also distinguished pathological levels of anxiety, intermediate to high risk alcohol consumption, job dissatisfaction, and absenteeism in Scottish police (Alexander et al., 1993).

A personal construct model of traumatisation proposes a very different way of looking at personality traits such as Neuroticism. In this research programme high scores on the Neuroticism scale are not understood primarily as a measure of physiological arousal (Eysenck & Eysenck, 1975). The person scoring highly on a Neuroticism scale is perceived as someone actively searching for meaning in their life experiences (Eysenck & Eysenck, 1975; Kelly, 1955; Winter, 1985). Personal theories such as those measured by the Neuroticism Scale are not viewed as absolute and unchanging but they are seen as relatively stable because they reflect core rather than peripheral processes which are repeatedly confirmed by experiences. Peripheral processes are easier to change because they are less important to psychological integrity. In a personal construct model of traumatisation core processes represent the highest level of superordinancy in complex and interrelated systems of meaning (Neimeyer, 1987a). Core construct systems are concerned with the maintenance of identity and existence and can only change if they are permeable enough to be able to deal with new experiences. It has been proposed that people bring these personal theories (personal construct subsystems) to life events resulting in specific predictions about how their owners will cope with stressors.

The Neuroticism Scale has strong predictive power and relative reliability and validity across cultural and societal boundaries (Chattopadhyaya et al., 1990; Gong, 1984; Hosokawa et al., 1993; Kline and Barratt, 1983; Munro, 1986; Sanderman et al., 1991; Wilson & Doolabh, 1992). A person scoring highly on the Neuroticism Scale has been described as a "worrier" with constant emotional overreactivity and preoccupation with things not going well (Eysenck and Eysenck, 1975). In this research programme high scores on Neuroticism are seen as reflecting a particular world view or personal epistemology where the person is anticipating stressful life events and catastrophic outcomes for these events. Such experiences will provide further confirmation for these negative personal theories and make them even stronger.

Characteristics of the Traumatic Event

The development of a questionnaire to assess the specific characteristics of traumatic events was informed by key concepts arising from the relevant literature on police stress and important trauma variables (Brown & Campbell, 1990; Burton et al., 1994; Card, 1987; Coman & Evans, 1991; Creamer et al., 1989; Elder & Clipp, 1988; Fairbank et al., 1994; Foy et al., 1987; Goldberg et al., 1990; Green, 1993; Helzer et al., 1987; Kilpatrick et al., 1989; Kulka et al., 1990; Lee & Stoneham, 1994; Lipson, 1986; March, 1993; Pynoos et al., 1987; Savery et al., 1993; Shore et al., 1989; Spielberger et al., 1981; Winfield et al., 1990). Additional information and insights were provided by preliminary meetings and discussions with probationary constables and student police officers. A number of shifts were also spent with operational police. Test runs on the questionnaires were conducted with student police officers, some police academy instructors, and operational police. The researcher received feedback on the content and clarity of instructions for particular questions. There are no psychometrically evaluated inventories into workplace or police trauma although it has been recently recommended that the development of such instruments should be given significant priority in the research agendas of people investigating traumatic stress reactions (Paton, 1992; Paton & Smith, 1995). The measures used to assess the specific aspects of exposure to potentially traumatising events in this research programme are described in this section.

Exposure to traumatic events

Research participants were asked to record the type of traumatic event, the frequency of exposure, and their perceived level of distress generated by specific traumatic events. These events included attending an autopsy, a death message involving a deceased child, a suicide completed by violent means, natural disasters, man-made disasters, terrorism, handling bodily remains, handling a body a significant time after death, exposure to grossly mutilated bodies, multiple fatalities, death or serious injury of a fellow worker at work, death of someone from their personal life at work, killing someone at work,

serious accident at work, serious assault at work, use of extreme physical force on someone at work, exposure to battered and dead children, exposure to children in pain, witnessing a brutal death or assault, investigating child abuse, investigating domestic violence, attending a sudden infant death, and any other traumatic event not mentioned.

The nature of traumatic events

Research participants were asked to identify the traumatic event which they had experienced as most personally distressing. They were then asked about their degree of personal identification with the traumatic event, perceived subjective distress during the traumatic event, perceived subjective distress in relation to the traumatic event now, perception of the traumatic event as unjust, perception of the traumatic event as preventable, attribution for the cause of the traumatic event, the recency of the traumatic event, length of exposure, frequency of exposure, perception of personal influence available, and exercised, in determining the outcome of the traumatic event, extent of unexpectedness, extent to which the traumatic event had a strong influence on each of their five senses, perception of life threat, perception of threat of serious injury, perception of extent of life and death responsibility, time of arrival at the traumatic scene, frequency of self-disclosure after the traumatic event, and perception of their degree of cognitive integration of the traumatic experience.

The Recovery Environment

The measures used for perceived availability of social support, trauma symptoms, and PTSD are described in this section.

Perceived availability of support when needed

Developing ways of reliably assessing the pertinent aspects of recovery environments for traumatised people has been recently described as deserving of higher priority (Paton & Smith, 1995). There are no psychometrically validated social support scales in the study

of traumatic stress reactions and so it is not unusual for investigators to develop questions specifically designed for their own research programme (Creamer, 1993b; Green & Berlin, 1987; Green et al., 1985). Participants in this research programme were asked questions designed to assess their perception of the availability of various forms of social support when it was needed following exposure to a traumatic event which had been particularly personally distressing to them. These questions were informed by the empirical literature which demonstrates that consistency and perceived quality of social support can have a positive impact on the recovery of traumatised people (Alexander & Wells, 1991; Creamer et al., 1989; Dutton et al., 1994; Hodgkinson & Shepherd, 1994; Keane et al., 1985). Participants were asked questions on three different types of social support that is, information and advice, practical assistance, and emotional support because these three types of social support appear to be associated with different psychological processes (Dunkel-Schetter et al., 1987).

The frequency of trauma symptoms

There are no standardised assessment instruments to assess the impact of work-related trauma (Paton & Smith, 1995). Questions concerning the frequency of trauma symptoms were adapted from DSM-III-R criteria for PTSD as has been recently recommended (American Psychiatric Association, 1987; Paton & Smith, 1995). Research participants answered a trauma symptoms inventory where they were asked to specify their single most personally distressing traumatic event. These events were coded according to the Diagnostic Interview Schedule (DIS) protocol for qualifying and non-qualifying life events (Robins et al., 1988). These questions were used to assess specific levels of trauma symptomatology in the intrusive, avoidance and numbing, and heightened arousal categories and to identify the top and bottom 10% of scorers to be interviewed using the DIS. Participants scored their experience of each trauma symptom for its frequency. The frequency of occurrence of particular symptoms were quantified on a scale ranging from not at all (scored as 0) to all the time (scored as 8).

PTSD

The PTSD module of the Diagnostic Interview Schedule (DIS) was used in this study in order to make a diagnosis of PTSD. Structured interviews were conducted with 20% of the research participants. The top and bottom 10% of scorers on the symptoms inventory adapted from the DSM-III-R criteria for PTSD participated in a structured DIS interview (American Psychiatric Association, 1987). The DIS (Robins et al., 1988) has been used extensively in epidemiological research into traumatic stress reactions (Breslau et al., 1991; Davidson et al., 1991; Goldberg et al., 1990; McFarlane, 1988; 1989; O'Toole et al., 1993; Shore et al., 1989). The DIS has been shown to have good reliability over time (Robins, 1989). The DIS also performed well in the validation pre-tests of the National Vietnam Veterans Readjustment study when it was administered by a clinician although it detected only one in four of the most serious cases of PTSD when it was administered by a lay interviewer (Blank, 1993; Kulka et al., 1990). McFarlane (1988; 1989) had similar experiences when using the DIS in his studies with firefighters. However, the prevalence of a DIS diagnosis for PTSD was not affected by the gender or profession of the interviewer in the national epidemiological study of Australian Vietnam veterans (R. P. Marshall, personal communication, January, 1995). The DIS was administered by the same clinical investigator throughout this research programme for practical and financial reasons but a random sample of the diagnoses of PTSD were independently verified by another trained mental health professional who listened to a random selection of 5% of the completed audiotapes for DIS interviews. There was no disagreement observed between diagnoses assigned by the clinical investigator and the independent judge. A similar approach to provide independent verification of the diagnosis of PTSD was used in recent study of veterans from the "Desert Storm" conflict (Sutker et al., 1994). No attempt was made to independently assess the concurrent validity of the diagnostic material obtained by the DIS by using the data obtained from the self-report symptom inventory. This decision was made because there were are no psychometrically standardised symptom inventories which assess the impact of work-related trauma to

serve as satisfactory criterion in any proposed validational comparisons (Paton & Smith, 1995; Sutker et al., 1994; Viney, 1992b) .

The researcher asked about exposure to traumatic events. The research protocol has clearly articulated qualifying and non-qualifying events. Questions are asked about symptomatology and their duration in relation to three separate traumatic events. All symptom items had to be linked by the research participant to the specific traumatic event being discussed as has been recently recommended (Kilpatrick and Resnick, 1993). An individual had to have one intrusive symptom, three symptoms of emotional numbing or avoidance, and two symptoms of heightened arousal associated with one traumatic event in order to qualify for a diagnosis of PTSD. The symptoms also needed to have been present for at least a month (American Psychiatric Association, 1987).

Significance and Limitations of the Methodology

The necessity of using an opportunity sampling strategy, places some restrictions on the extent to which it will be possible to generalise from these research findings, to the whole population of novice recruits and police with one year of operational experience, unless one assumes that this naturally occurring sample of class groups in NSW police organisations, is just one of the possible samples that could have been randomly selected had this strategy been possible. Such an assumption can only be made with caution (Burns, 1990).

There does not appear to be any systematic normative epidemiological data on the levels of work-related traumatisation in policing organisations, either nationally or internationally. This reality will add to the significance of the findings of this research programme but will also make it impossible to consider the fuller implications of these research findings when there is still no appropriate comparison data from other policing organisations.

This research programme is limited by its use of the "experimenter orientation model" of data collection (Viney, 1992b p. 192). In this model, it is assumed that only the data collector is influential and only the research participants are influenced. Such a model ignores the potentially powerful impact of the personal perceptions and interactions that take place during the research process. This research programme ignores anything but very structured subjective experiences. It is possible that interaction processes and private interpretations could significantly influence the nature of the research findings (Viney, 1992b).

This research programme used the DSM-III-R criteria to make a diagnosis of PTSD because DSM-IV criteria had not been finalised during the data collection period (American Psychiatric Association, 1987; 1994). It has been argued that the DSM-III-R criteria for PTSD are especially problematic for the assessment of work-related trauma because they do not distinguish between normal distress following a traumatic event and PTSD. By suggesting in Criterion A that a traumatic event must lie outside the normal range of human experience, DSM-III-R criteria for PTSD fail to acknowledge that some high risk occupational groups like police may be exposed to potentially traumatising events on a very regular basis (Paton & Smith, 1995).

Although the repeated measures prospective research design has considerable advantages, it is still limited by the fact that it was only possible to use two waves of data within the time frame of this doctoral thesis. The reliability of any measured changes is likely to have been markedly improved by the inclusion of more observation times and this may be possible in future follow-up studies (Paton & Smith, 1995; Willett, 1989).

Many of the measures used in these studies are preliminary instruments which await psychometric evaluation. Few relevant and appropriately standardised research instruments exist in the study of work-related traumatic stress reactions. The Neuroticism Scale of the EPQ (Eysenck & Eysenck, 1975) is being used in a novel way. It has been argued that the Neuroticism Scale can be used as a measure of a negative personal epistemology or world view rather simply as a measure of symptomatology. The

measures used in this research programme may exert some influence on the generalisability of the findings.

Despite their limitations these measures are favourably comparable with those used in other trauma studies and they are broadly consistent with the various recommendations for core methodologies in trauma research and for the investigation of work-related trauma (Baum et al., 1993; Green, 1994; Paton & Smith, 1995; Raphael et al., 1989). The trauma measures are informed by DSM symptom groupings and subjective impact as well as frequency of trauma exposure will be investigated. The influence of personal, trauma, and recovery factors on traumatisation will be assessed and aspects of the post trauma environment will be investigated. The studies have identified and will investigate important aspects of traumatic events which might predict traumatisation. These studies will provide an opportunity to test various aspects of a personal construct model of traumatisation and they will supply some important baseline and normative data on recruits and probationary constables against which the magnitude, development, and course of traumatic stress reactions in police can be reliably assessed (Paton & Smith, 1995; Raphael et al., 1989).

The Research Question

The research question concerns whether there will there be higher prevalence rates of diagnosable Posttraumatic Stress Disorder in probationary constables with twelve months operational experience compared to that of novice police recruits? This question is consistent with the second goal of the research which aims to establish some normative baseline epidemiological data on the levels of Posttraumatic Stress Disorder in this high risk occupational group. It is expected from the personal construct model of traumatisation that the answer will in the affirmative because the contextual factors influencing operational police are seen as more unfavourable to the formation of new personal meanings and optimal adult development compared to those of most novice police recruits.

This research will then endeavour to specifically investigate some hypotheses drawn from a personal construct model of traumatisation about the influence of personal factors, characteristics of traumatic events, and aspects of the recovery environment on the presence and severity of trauma symptoms in police. Hypotheses concerning how personal theories and trauma symptoms may change over time will also be empirically evaluated.

Hypotheses

The Cross-Sectional and Repeated Measures Studies of Traumatic Stress Reactions in Police

1. Trauma symptoms will be associated with being a probationary constable with twelve months operational experience because the occupational milieu of policing is largely unfavourable to the formation of new personal meanings and optimal adult development.

2. Trauma symptoms will be associated with police having negative personal theories as evidenced by higher levels of Neuroticism.

3. Trauma symptoms will be associated with police having previous experiences of an unfavourable and invalidating environment as evidenced by a family history of psychological assistance for emotional difficulties.

4. Trauma symptoms will be associated with police having previous experiences of an unfavourable and invalidating environment as evidenced by a previous history of child abuse or neglect.

5. Trauma symptoms will be associated with police having personally identified with a traumatic event because of high levels of threat to their fundamental personal meanings (core processes).

6. Trauma symptoms will be associated with police having a perception of life threat because of high levels of threat to their fundamental personal meanings (core processes).

7. Trauma symptoms in police will be associated with the type of traumatic stressor because of the full scale assault some of these events have represented to their fundamental personal meanings (core processes).

8. Trauma symptoms in police will be associated with the frequency of total trauma exposure and its subjective impact because of the ongoing high levels of threat to their fundamental personal meanings (core processes).

9. Trauma symptoms in police will not be associated with their perceived availability of social support in a clear way because it is only one element in a less than optimal occupational context and recovery environment.

The Repeated Measures Study of Traumatic Stress Reactions in Police

10. People who have negative and impermeable personal theories, as evidenced by Neuroticism, are more likely to anticipate and construe life events as traumatising, as evidenced by trauma symptoms after twelve months of operational policing.

11. Traumatising events will confirm the predictive viability of negative personal theories and make them stronger, as evidenced by increases in Neuroticism scores over time as a function of trauma symptoms after twelve months of operational policing.

12. Trauma symptoms in novice police recruits will be associated with their trauma symptoms after twelve months operational policing, because they will be anticipating further threat, and exposure to potentially traumatising life events confirms these predictions.

Summary and Conclusions

In this chapter I have identified my major objectives in undertaking this research programme with police. I have provided a rationale for the methodology of this research programme among a variety of other possible options. I have discussed some of the inherent difficulties in studying trauma in the workplace and some of the methodological strengths of the approach which was selected. I have discussed the ways in which the research question and hypotheses are informed by a personal construct model of traumatisation and the earlier reviews of the theoretical and empirical literature. The sampling strategy and the psychometric properties of the various measures chosen to test the hypotheses have been described. The significance and some of the constraints of the methodology have been outlined. I have also specified my research question and hypotheses. In the next two chapters the procedures and findings of this empirical evaluation will be described.

Chapter Seven

The Cross-Sectional Study of Traumatic Stress Reactions in Police

The Cross-Sectional Study of Traumatic Stress Reactions in Police

The Police Recruitment Education Programme (PREP) in NSW, Australia, is modular in nature. The training programme is a combination of residential and field-based components divided into five phases. Residential training takes place at the police academy located Goulburn which is in the south west of NSW. Field training takes place in police stations where the probationary constable is placed with a particular operational patrol. During the first 26 weeks of training police recruits have student officer status. They enter Phase One at the Police Academy for 8 weeks. Student police then spend the 4 weeks of Phase Two attached to a policing patrol. They then return to the academy for 14 weeks of Phase Three training. At the end of Phase Three, successful student police people are formally sworn in and change status to probationary constables. Probationary constables then enter a 48 week period of on the job probationary training attached to a policing patrol. At the end of this period, they return for Phase Five (2 weeks) at the Police Academy prior to graduation as police constables (MacDonald et al., 1990).

The Research Participants

Sampling

The sample was drawn from all new police recruits and probationary police constables from the following Police Academy of NSW classes:

- New recruits (Phase One) about to enter intake Classes 250 (January, 1992) and 251 (April, 1992) N = 238.

- Probationary constables (Phase Five) Classes 245 (October, 1991) and 246 (January, 1992) returning to complete formal training at the Police Academy of NSW after their twelve months field service N= 512.

The participation rates in this research programme were high, namely 98% for the new recruits, and 92% for the probationary constables. Four of the new recruits were not available at the time of testing. Among the probationary constables in this sample 653 had commenced training and of these 5 students withdrew from PREP, 30 resigned, 11 had their enrolment terminated, and 12 were relegated to later classes. Six hundred and three student police people were sworn in as probationary constables and 556 graduated as confirmed police. Of these 556 police, 2 were delayed students from previous classes. Of the probationary constables potentially available to be a part of this study 44 chose not to volunteer.

Age

The new recruits in the study ranged in age from 18 to 39 with a mean age of 23 years and standard deviation of 4 years. The probationary constables ranged in age from 19 to 35 with a mean age of 22 years and a standard deviation of 3 years.

Gender

Most of the research participants were male (75%) with women constituting less of the sample (22%), and some missing data (3%). There were differences between the groups in gender, as demonstrated in Figure 7.1, with new recruits having a higher a representation of women (32%) than probationary constables (18%). It was Departmental policy to recruit more women during these intakes to begin to address gender and status inequities between men and women in the Police Service in NSW (Sutton, 1992).

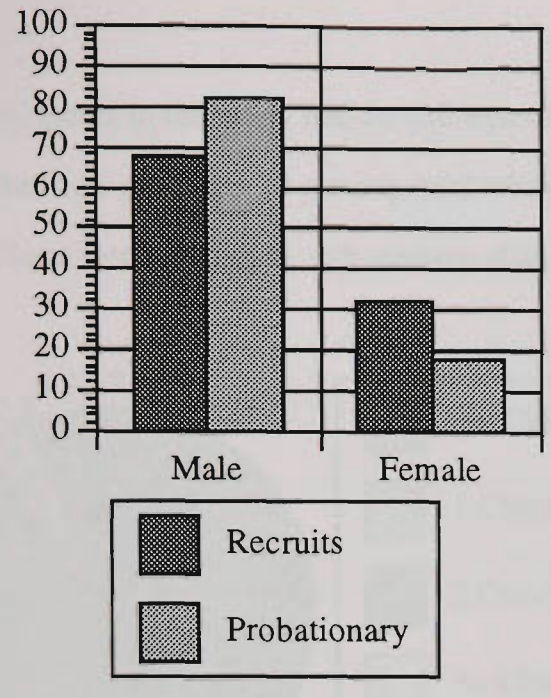

Figure 7.1: Gender Differences Between the Groups

Marital Status

As shown in Figure 7.2, most of the sample were single (79%), with some married or living together (17%). Only 12 participants were divorced or separated and only 2 participants were remarried. There were 19 participants with missing data on this question (3%).

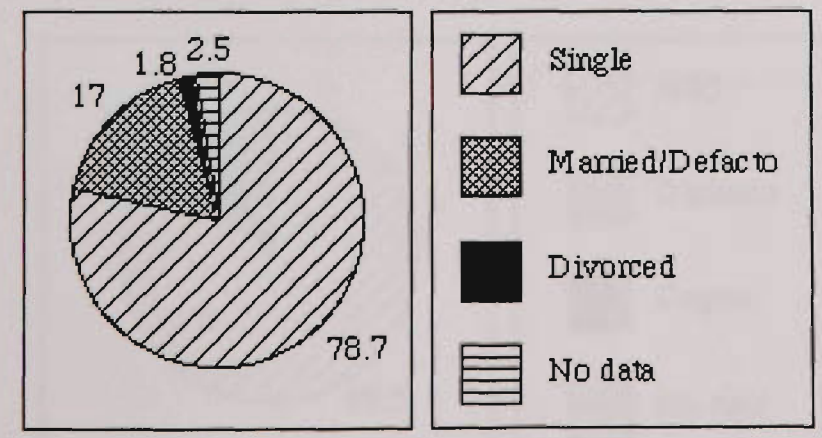

Figure 7.2: Marital Status

Children

Most of the research participants in this study had no children (90%), a few had one child (30 participants), fewer had two children (20 participants) whilst only 8 participants had three or more children. There were 21 people with missing data on this question. This is shown in Figure 7.3.

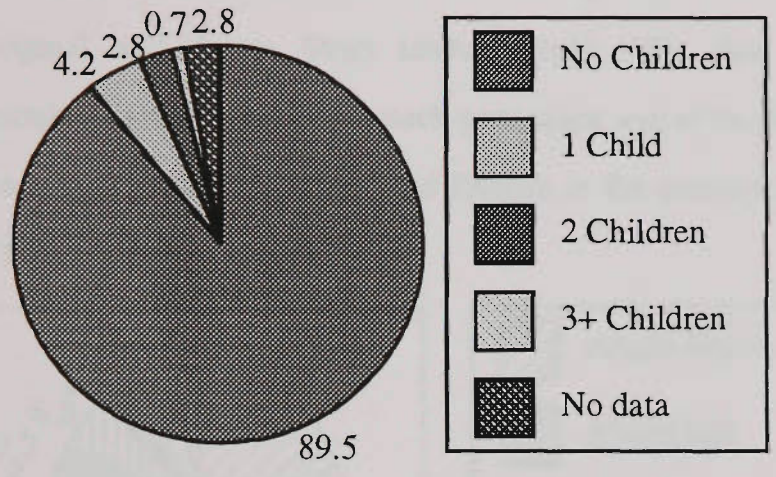

Figure 7.3: Number Of Children

Educational Level

As is demonstrated in Figure 7.4 , the majority of participants had completed the Higher School Certificate (HSC) or an equivalent qualification (86%).

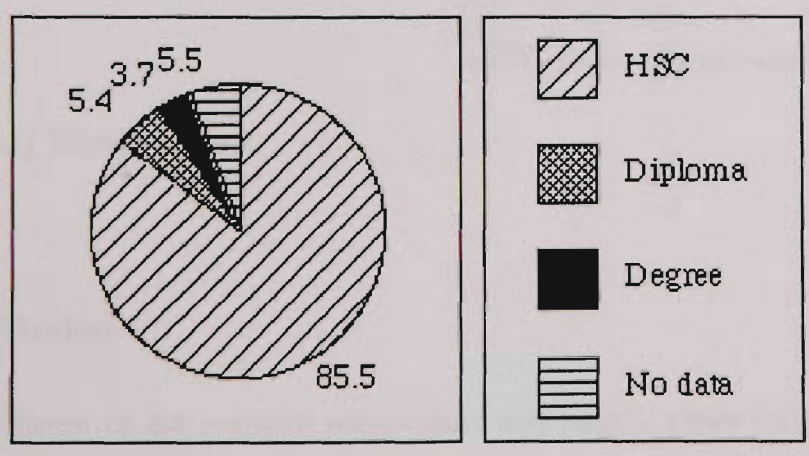

Figure 7.4: Educational Level

Primary Ethnic Origin

The study participants were strongly Anglo-Saxon Australian in primary ethnic origin (78%). There was variation across other groups. Aboriginal and Torres Strait Island people represented (2%) of the sample, Northern European (3%), British (7%), Mediterranean (3%), Asian (1%), Other (4%), and missing data (3%). The new recruits had more Aboriginal and Torres Strait Island people (6%) than the classes of probationary constables where only one research participant was of this background. The vast majority of research participants (94%) had English as the primary language spoken in their home. This is shown in Figure 7.5.

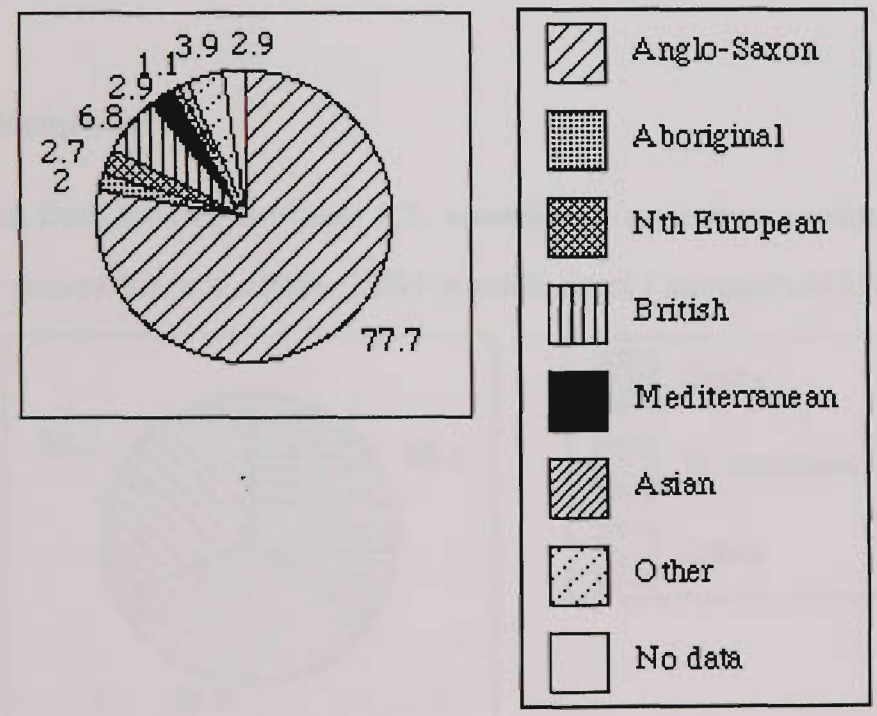

Figure 7.5: Primary Ethnic Origin

Religious Affiliation

The religious affiliation of the research participants was largely either Catholic (36%) or Anglican (35%). The rest of the research participants were spread across a variety of affiliations as is demonstrated in Figure 7.6.

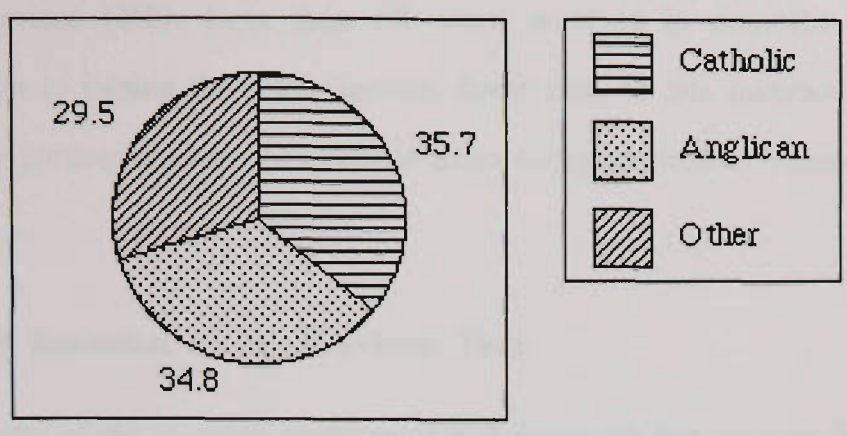

Figure 7.6: Religious Affiliation

Father's Occupation

As is apparent from looking at Figure 7.7, most people came from backgrounds where their father's occupation was a trade (35%) or professional / managerial (33%).

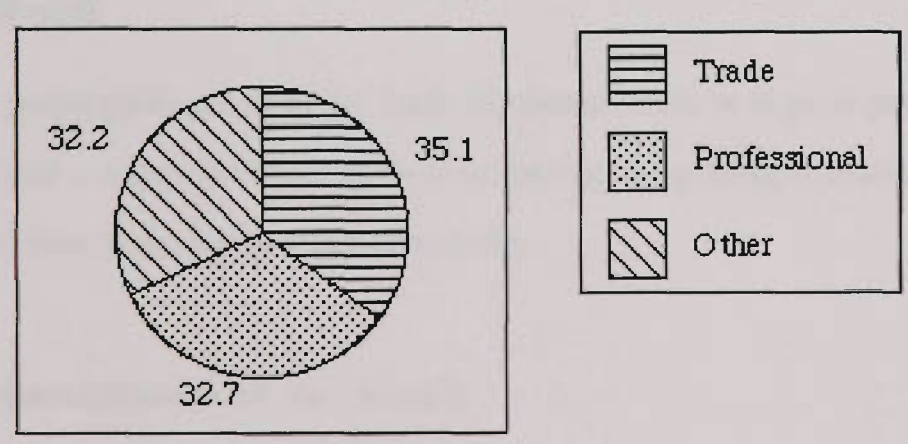

Figure 7.7: Father's Occupation

Occupation Prior to Policing

Most research participants were students prior to joining the Police Service (27%) with a reasonable number involved in clerical positions (18%), trade (16%), unskilled occupations (16%) and professional/managerial positions (10%). Of the rest, only a small percentage were unemployed (2%), serving as defence personnel (3%) or working in the

emergency services (2%). Less than 1% were involved in domestic duties as an occupation prior to joining the police service. Some data on this question was missing (3%) and some participants saw the question as not being applicable to them (3%).

Geographical Location in the Previous Year

The vast majority of the research participants had spent the last year in the city (83%) rather than the country (14%). There was some missing data on this question (2%) and less than 1% had spent the previous year overseas. As would be expected, given that most operational experience during PREP occurs in the Sydney Metropolitan Area, more probationary constables (92%) had spent the preceding year in the city when compared to the new recruits (69%).

Physical Health

Most of the people participating in this study felt themselves to be in good physical health (64%). The new recruits were more likely to see themselves as being in excellent physical health (30%) than probationary constables (23%).

The Representativeness of the Sample

It was possible to compare some the demographic features of these research participants with two other groups: 1) on age and gender parameters with the 229 training police in Victoria, Australia as at December, 1994 (Victoria Police, 1994); and 2) on age, gender, educational background, occupational background, and ethnic background with the other police recruited in NSW between 1991 and the end of 1994. There were over 3000 police recruited during this time period (Bradley, 1994). These details are depicted in Table 7.1. Clearly, the research participants in this study appear to be representative of the police in training in the two largest policing organisations in Australia.

Table 7.1: Comparisons of Research Participants with General Population of Police Recruits

Demographic Variable	This Sample at Recruitment	Other NSW Police Recruits 1990-1994	Victorian Police in Training, December, 1994
Average Age	22	22.5	24
Gender	22% female; 78% male	25% female; 75% male	21% female 79% male
Educational Background	76% Higher School Certificate 6% Tertiary 7% School Certificate 11% Trade	70% Higher School Certificate 11% Tertiary 1% School Certificate 18% Trade	
Ethnic Background	9% NESB	7% NESB	-
Occupational Background	3% Managers/ Administrators 3% Professional 4% Paraprofessional 18% Trade 22% Clerical 14% Sales & Service 2% Plant, Machine, Drivers 19% Labourers 22% Students/Non Employed	3% Managers/ Administrators 2% Professional 7% Paraprofessional 18% Trade 23% Clerical 18% Sales & Service 3% Plant, Machine, Drivers 15% Labourers 14% Students/Non Employed	-

The Research Procedure

Formal permission to conduct the research programme was obtained from the Police Service of NSW in September, 1991. The study had the co-operation of the Police Association of NSW and the Police Federation of Australia and New Zealand. The research programme was approved by the Ethics Committee of the University of Wollongong, Australia and complied with their requirements concerning the informed consent of research participants, confidentiality, freedom to discontinue participation, and the ready availability of an information, referral, and support network of suitably qualified mental health professionals.

The Collection of Questionnaire Information

All questionnaire information was collected by the researcher at the Police Academy of NSW. As participants entered the room they were asked to sit with a space in between them and their nearest neighbour given the personal and confidential nature of the questions. The researcher and the project were generally introduced to the study participants by the Coordinator of Phase Five. The researcher provided information on the background and purposes of the project and on her professional experience in the area of traumatic stress reactions. Participants were informed that some people would also be asked to be involved in an interview relating to their experiences of traumatisation. They were informed of the selection process and timing for the interviews. Participants were told that those asked to be available for an interview would be representative of the range of answers provided by the bigger group. Participants were informed that those among them who had experienced traumatising events could be unsettled by answering some of the questions. Telephone numbers were provided for confidential additional information, support, or referral. They were informed that all individual information was strictly confidential and that neither the Academy nor the Police Service would have access to any of the questionnaires. All participants received an information and consent letter and were

asked to provide their written consent to participate in this research programme on the following understanding:

1. This research study would be carried out in the manner conforming with the guidelines set out by the National Health and Medical Research Council.
2. The general purposes, methods, demands, possible risks, inconveniences and discomforts which may occur during the study had been made known.
3. They were volunteering to take part in this study.
4. They were free to discontinue their participation at any time without prejudice to their relationship with the Police Academy, Police Service, or the Police Association.

Participants were invited to ask questions prior to starting the questionnaires or at any time during completion by simply raising their hand. The researcher was available at all times.

The Collection of Interview Information

Structured interviews were conducted by the researcher with the top and bottom 10% of scorers on trauma symptomatology. This information was provided from questionnaire data collected during the previous week. The purpose of the interview was to identify those participants with diagnosable PTSD. The people interviewed could only be selected from among those participants who had provided viable trauma symptomatology information when answering the questionnaires and a registration number from which they could be individually identified. For new recruits interviews were held prior to any field experience namely, during the first three weeks of Phase One. Interviews for probationary constables were held during the second week of the two weeks of Phase Five which was just prior to graduation.

The Coordinator of Phase Five, who was unfamiliar with the selection criteria for interviews, spoke with the research participants selected and informed them of the date and times for individual interviews. All interviews were private and conducted in a closed office. Participants were assured of complete confidentiality. Interviews generally lasted between 10 to 40 minutes. Interviews were audio taped for methodological reasons but only with the permission of the person being interviewed. Referral information and follow-up was provided where appropriate and at the discretion of individual participants.

Analysis of the Data

In this section the prevalence rates of PTSD in novice police recruits and probationary constables will be reported. The application of a unifying statistical process to the presence and severity of trauma symptoms will also be presented.

The Prevalence of PTSD in Police

In the current research programme PTSD was assessed using the PTSD module of the DIS (Robins et al., 1988) to conduct a structured interview.

The current prevalence rates for PTSD were as follows:

- Probationary constables 6.05% (31 from 512 or about 1 in 16 probationary constables).
- Novice police recruits 3.36% (8 from 238 or about 1 in 33 novice recruits).

It was not meaningful to analyse these data using inferential statistics to help identify important explanatory variables for the occurrence of PTSD, because of the low percentages involved. However, it was possible to use a two-stage statistical procedure to determine important predictors of the probability of having trauma symptoms and the severity of these symptoms.

The Process of Statistical Analysis

To understand the viability, or otherwise, of the specific anticipations derived from the theoretical model, it was necessary to examine the effects of each of the explanatory variables and in turn control for the effects of all the other variables on the frequency of trauma symptoms. For example, if other variables are equal across all cases in the research programme how much influence does the group variable, probationary police constable, exert on the frequency of trauma symptomatology? The process of statistical analysis in this study involved five steps namely, exploratory data analysis, statistical model formulation, statistical model fitting, statistical model checking, and interpretation and inference (Hamilton, 1992; Weisberg, 1985). The first four of these five steps will be described in more detail below. Chapters Nine and Ten will discuss the interpretations, inferences, limitations, and implications that can be drawn from the analyses of the data.

Exploratory Data Analysis

Exploratory data analysis identified the distribution of the data and the nature of the relationships between the variables including their normality and constancy of variance (Burns, 1990). There were a large number of research participants with no reported trauma symptomatology resulting in a spike at zero in the distribution of this data. It was therefore inappropriate to model these data by using a single distribution.

Model formulation

The initial descriptive exploration provided information to allow for the formulation of a variety of statistical models. The process of statistical model formulation progressively approximated the best predictors of the outcome variable, in this case, the frequency of trauma symptoms. The selection of variables for the statistical models involved the use

of stepwise regression procedures. Decisions about the inclusion of particular variables were based upon several criteria of statistical significance, simplicity and fit, and context. The use of this partially manual strategy to identify important predictor variables, minimised the hazards of an exclusively automated search of the data (Hamilton, 1992). Although they are frequently used, fully automated stepwise regression procedures have several problems. Multiple comparisons of variables in fully automated searches lead to an increased risk for over interpreting relationships which may have occurred purely by chance, namely Type I errors. There is also an increased risk of excluding variables as for example, when they are strong relationships between several important predictor variables (Hamilton, 1992; Weisberg, 1985).

Model Fitting

The next stage in the statistical process involved the fitting of statistical models. The data were modelled in two stages. The stage one model was for the presence or absence of trauma symptomatology and an iterative reweighted least squares multiple regression model was used for estimation. The stage two model was for the severity of trauma symptomatology, given its presence, namely with all the zero scores excluded. In this second model, errors were assumed to approximate a normal distribution, after the data were transformed because the underlying distribution was skewed. An ordinary least squares multiple regression, ignoring truncation, was used for estimation (Hamilton, 1992; Weisberg, 1985).

Stage one: Model specification for the presence/absence of trauma symptoms

Presence or absence (one or more trauma symptoms present versus no trauma symptoms) on a logistic regression scale. The logit form of the model is:

Logit ($\underline{p}$) = constant + effect of novice police recruit + probationary constable + demographics + reported relevant past history + total frequency of trauma exposure +

type of trauma exposure + recency of trauma exposure + length of trauma exposure + Neuroticism Scale scores + total frequency of trauma exposure weighted by subjective impact + personal identification with the traumatic event + perception of life + perceived availability of social support when needed following trauma exposure + possible interaction effects between variables.

Where Logit $\underline{p} = \log(\underline{p}/(1-\underline{p}))$

Where $\underline{p}$ is the probability of the expression of trauma symptoms.

Stage two: Model specification for severity of trauma symptoms, given its presence

The model can be expressed as:

E (log PTQTOTF) = constant + effect of novice police recruit + probationary constable + demographics + reported relevant past history + total frequency of trauma exposure + type of trauma exposure + recency of trauma exposure + length of trauma exposure + Neuroticism Scale scores + total frequency of trauma exposure weighted by subjective impact + personal identification with the traumatic event + perception of life threat + availability of social support when needed following trauma exposure + possible interaction effects between variables.

Where E is the expected level of the mean and where log PTQTOTF is the transformed value of the frequency of trauma symptomatology.

Model Checking

In this step the assumptions of the two statistical models were successfully examined using standard diagnostics. The purpose of these procedures was to check each of the models for their respective assumptions concerning linearity, normality, constant variation, leverage, and outliers. Residual plots, quantile-quantile plots, leverage plots, and plots of influence were used in this process (Hamilton, 1992; Weisberg, 1985)

Results

The results will be presented in two separate sections in accordance with the way the data were statistically modelled. The first part will describe the best predictors for the probability of developing trauma symptoms using iterative reweighted least squares multiple regression. The second part will describe the best predictors for severity of trauma symptoms, given its presence, using ordinary least squares multiple regression.

The Presence of Trauma Symptoms in Police

Probationary Constables Compared to Novice Recruits Alone

When group was considered alone as an explanatory variable for the probability of having trauma symptoms, it was found that the probability of having trauma symptoms was increased for probationary constables rather than for novice police recruits. This difference was significant $p < .001$. The odds of having trauma symptoms were increased by 228% by being a probationary constable.

The regression coefficients, standard error, the chi square statistic, and its significance level are shown in Table 7.2 The effects are depicted graphically in Figure 7.8.

Table 7.2: The Probability of Trauma Symptoms and Being a Probationary Constable

	Coefficient	**Standard Error.**	**Chi square**	**p <**
Novice Recruits	0.00	0.00		
Probationary constable	1.19	0.19	40.6	.001

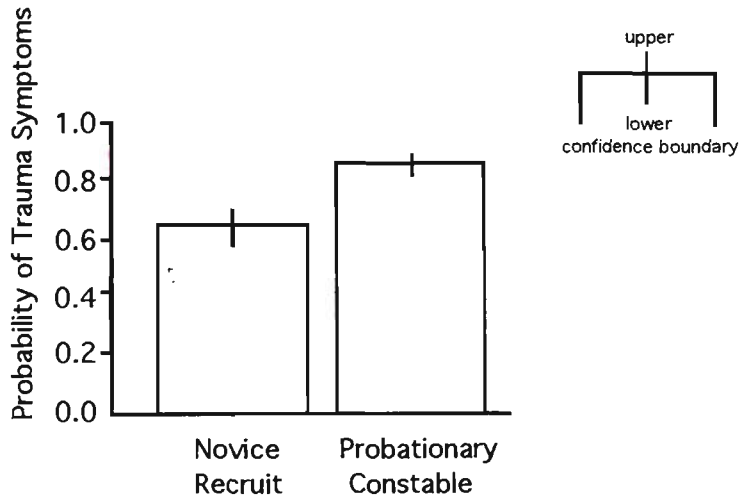

Figure 7.8: The Probability of Trauma Symptoms and Being a Probationary Constable Alone

Other Explanatory Variables

The effects of each of the explanatory variables on the frequency of trauma symptomatology were then considered. The probability of having trauma symptomatology was significantly increased by the following factors:

- being a probationary constable,

- having a reported family history of professional psychological assistance for emotional difficulties,
- type of trauma exposure,
- Neuroticism Scale scores,
- being exposed to the current sources of information and advice which were perceived as available following a traumatic event or such information and advice being relevant.

The odds of having trauma symptomatology were increased by being a probationary constable by 107%, by high Neuroticism Scale scores by 6%, and by the type of trauma exposure. Traumatic events, including a sudden infant death, news of sudden death or accident, and needing to give a death message to the relatives of a deceased child, increased the odds of having trauma symptoms by 667%. Seeing someone very badly hurt or killed increased the odds of having trauma symptoms by 487%. The combined effect of events involving physical assault, narrow escape, threat, sudden injury or accident, military combat, rape, and other's experience increased the odds of having trauma symptoms by 399%. Experiences of mutilated and decomposed bodies, autopsies, pointing a revolver at someone, and other trauma increased the odds of having trauma symptoms by 66%.

The odds of having trauma symptoms were decreased by not having a reported family history of professional psychological assistance for emotional difficulties by 50%, not having exposure to current sources of information and advice perceived as available following a traumatic event by 34%, or by such information and advice following a traumatic event not being relevant by 67%.

The regression coefficients, standard errors, the chi squares and their significance levels are shown in Table 7.3. The chi square statistics are adjusted for all the other variables in the model. The effects are depicted graphically in Figures 7.9, 7.10, 7.11, 7.12, and 7.13.

Table 7.3: The Probability of Trauma Symptoms

	Coefficient	**Standard error.**	**Chi square**	**p <**
Constant	0.79	0.49		
Novice recruits	0.00	0.00		
Prob. constables	0.73	0.27	(df1) 7.26	.007
Family history-yes	0.00	0.00		
Family history-no	-0.69	0.36	(df1) 3.97	.046
Information-yes	0.00	0.00		
Information-no	-0.41	0.29		
Information irrelevant	-1.10	0.29	(df2) 15.08	.001
Trauma irrelevant	0.00	0.00		
Trauma visual	1.77	0.45		
Trauma death	2.04	0.47		
Trauma other	0.51	0.29		
Trauma combined	1.61	0.42	(df4) 43.34	.001
Neuroticism Scale	0.061	0.023	(df1) 7.45	.006

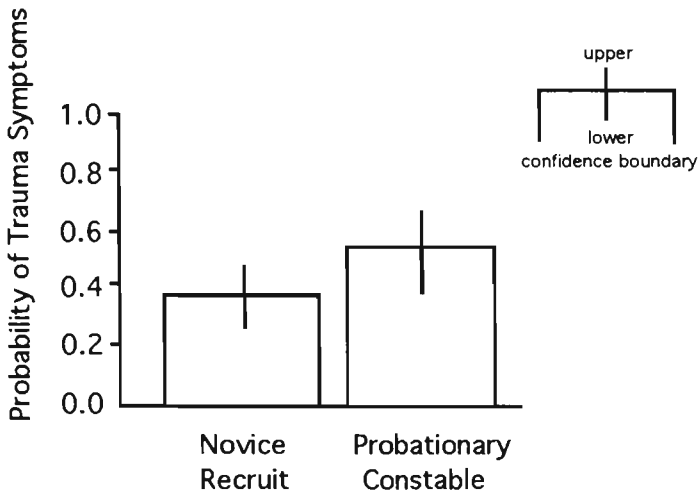

Figure 7.9: The Probability of Trauma Symptoms and Being a Probationary Constable

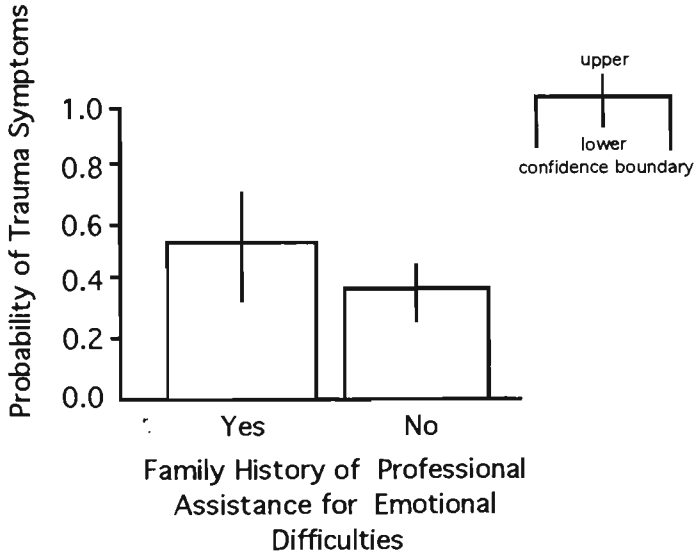

Figure 7.10: The Probability of Trauma Symptoms and a Reported Family History of Psychological Assistance For Emotional Difficulties

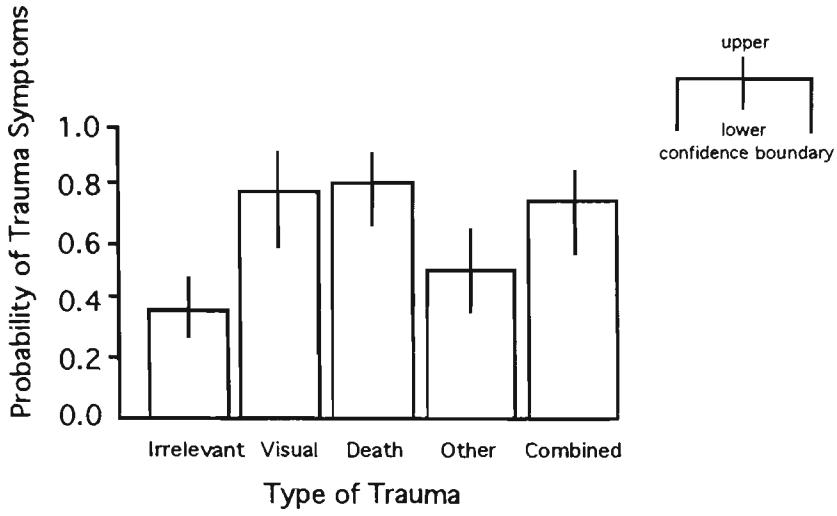

Figure 7.11: The Probability of Trauma Symptoms and Type of Trauma

Key to Type of Trauma: *Death*: a sudden infant death, news of sudden death or accident, and needing to give a death message to the relatives of a deceased child; *Visual*: seeing someone very badly hurt or killed; *Combined*: physical assault, narrow escape, threat, sudden injury or accident, military combat, rape, and other's experience; *Other* : mutilated and decomposed bodies, autopsies, pointing a revolver at someone, and other trauma.

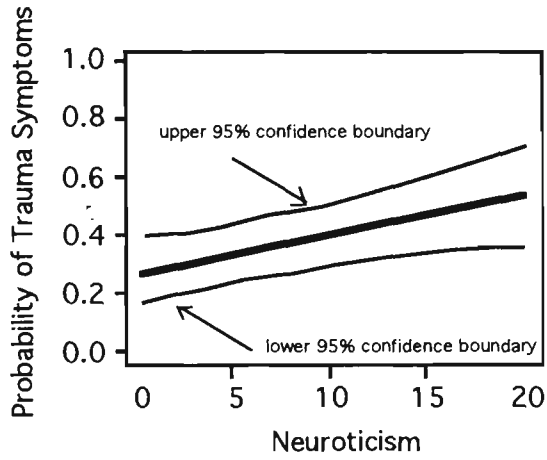

Figure 7.12: The Probability of Trauma Symptoms and Neuroticism Scale Scores

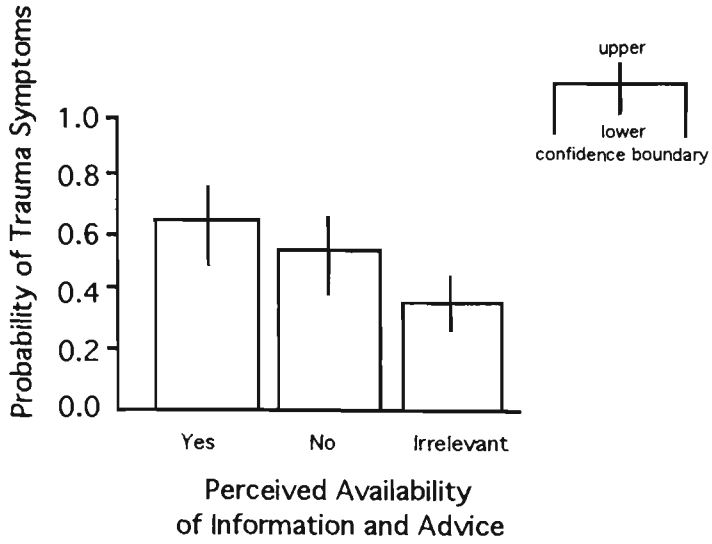

Figure 7.13: The Probability of Trauma Symptoms and Perceived Availability of Information and Advice

The Severity of Trauma Symptoms in Police

Probationary Constables Compared to Novice Recruits Alone

Group was considered alone for its influence on the log of the severity of trauma symptomatology when all the zero scores were excluded. The severity of trauma symptomatology was greater for probationary constables than novice police recruits. This difference was significant $p < 0.025$. The percentage increase in severity was 20% for probationary constables. Hereafter, when severity of trauma symptoms are discussed it will mean the transformed or the log of the severity score.

The regression coefficient, standard error, the F value, and its significance level are shown in Table 7.4. The results are depicted graphically Figure 7.14.

Table 7.4: The Severity of Trauma Symptoms in Novice Police Recruits and Probationary Constables

	Coefficient	**Standard Error**	**F (1,575)**	**p <**
Novice recruits	0.00	0.00		
Probationary constable	0.18	0.08	5.04	.025

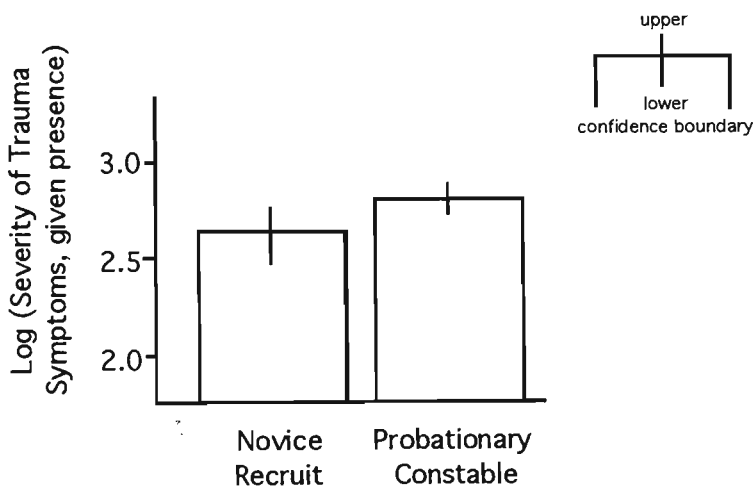

Figure 7.14: The Severity of Trauma Symptoms in Probationary Constables and Novice Police Recruits

Other Explanatory Variables

When all the zero scores were excluded the effects of each of the explanatory variables on the severity of trauma symptoms score were then considered by, in turn, controlling for the effects of all of the other variables.

The best predictors for the severity of trauma symptoms were as follows:

- perception of life threat,

- total exposure to traumatic events weighted by subjective impact,
- personal identification with the traumatic event,
- a reported history of childhood emotional abuse or neglect,
- being of Catholic religious faith,
- high Neuroticism Scale scores,
- and currently available sources of emotional social support following a traumatic event being perceived as relevant to the research participant, whether or not it was perceived as available.

The percentage increase in severity was 30% for perception of life threat, 35% for total exposure to traumatic events weighted by subjective impact, and 6% for high Neuroticism Scale scores.

The percentage decrease in severity was 19% for not having personally identified with the traumatic event, 32% for not having a reported history of childhood emotional abuse of neglect, 14% for being of non-catholic religious faith, and 22% for currently available sources of emotional social support following a traumatic event not being applicable.

The regression coefficients, standard errors, the F values, and their significance levels are shown in Table 7.5. The F values given are adjusted for all the other variables in the model. The effects are depicted graphically in Figures 7.15, 7.16, 7.17, 7.18, and 7.19.

Table 7.5: The Severity of Trauma Symptoms

	Coefficient	**Standard Error**	**F (1,476)**	**p <**
Total exposure weighted by subjective impact	0.29	0.07	18.98	.001
No childhood emotional abuse/neglect	-0.39	0.16	6.17	.013
Trauma identification No or irrelevant	-0.21	0.07	8.40	.004
Perception of life threat yes	0.26	0.09	8.64	.003
Emotional support irrelevant	-0.25	0.08	10.18	.002
Religion other	-0.16	0.07	5.37	.021
Neuroticism Scale	0.06	0.01	96.71	.001

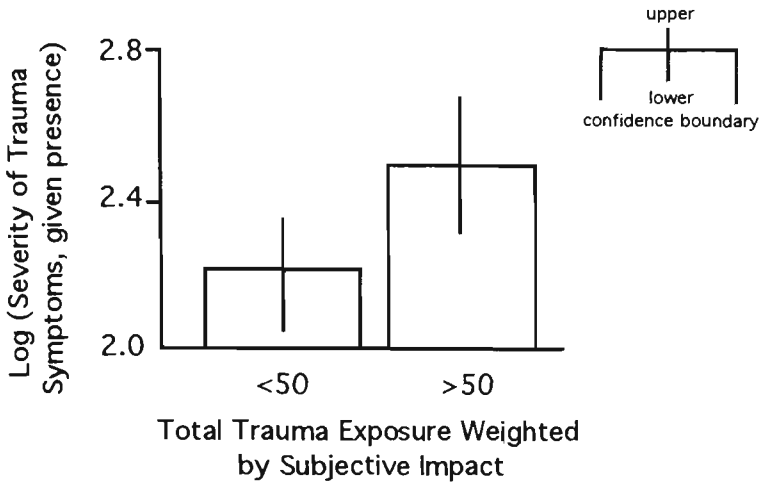

Figure 7.15: The Severity of Trauma Symptoms and Total Trauma Exposure Weighted by Subjective Impact

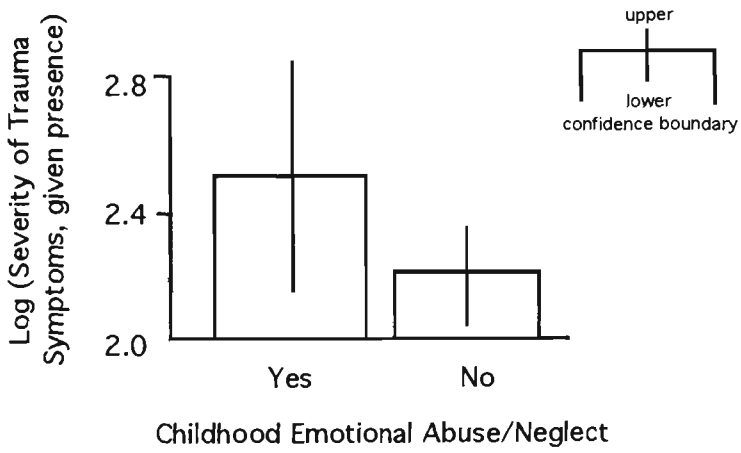

Figure 7.16: The Severity of Trauma Symptoms and Reported Childhood Emotional Abuse/Neglect

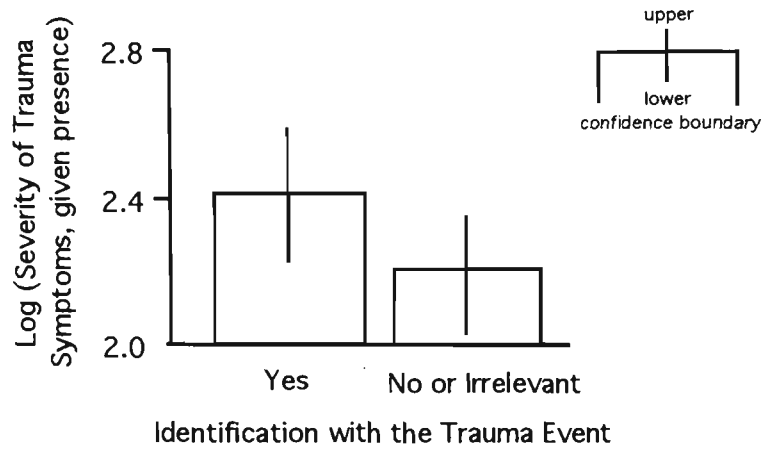

Figure 7.17: The Severity of Trauma Symptoms and Identification with the Traumatic Event

Figure 7.18: The Severity of Trauma Symptoms and Perception of Life Threat

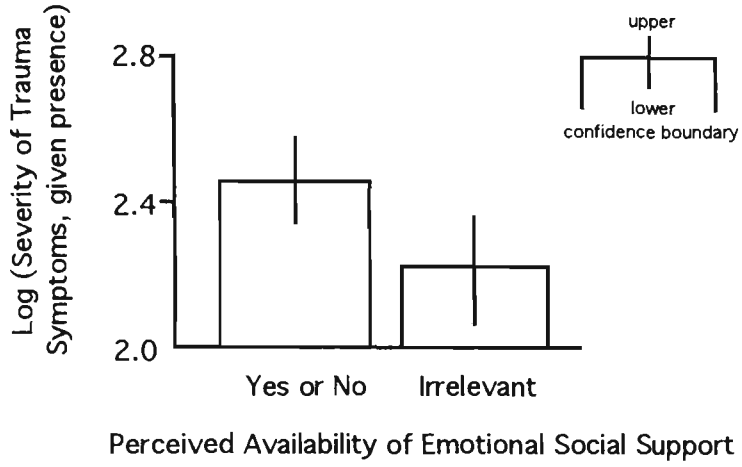

Figure 7.19: The Severity of Trauma Symptoms and Perceived Availability of Emotional Social Support

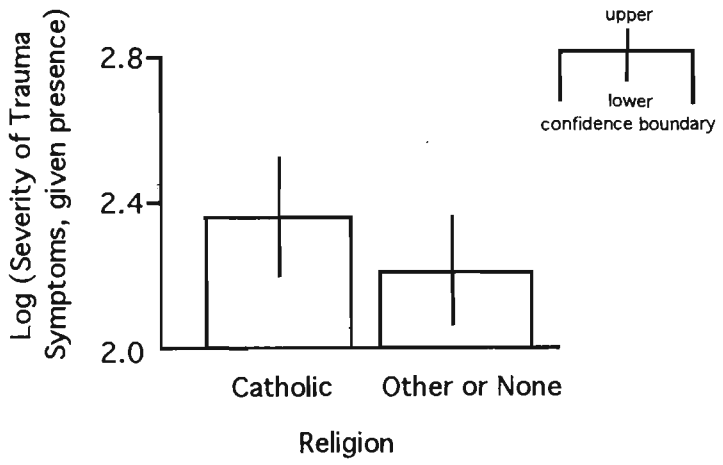

Figure 7.20: The Severity of Trauma Symptoms and Religion

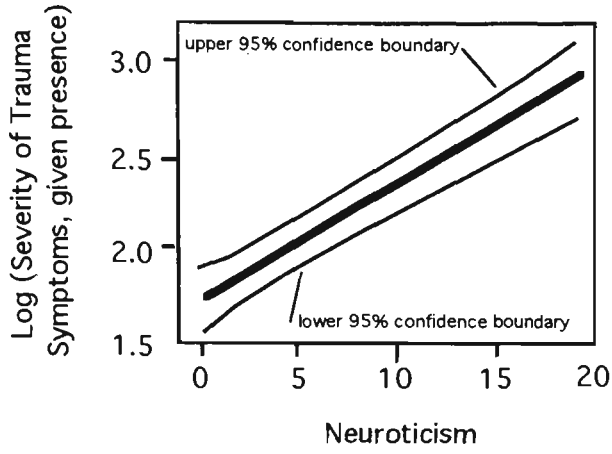

Figure 7.21: The Severity of Trauma Symptoms and Neuroticism Scale scores

Summary and Conclusions

The prevalence rate for PTSD in the cross-sectional study for probationary constables was 6.05% (31 from 512, or about 1 in 16) with PTSD, compared to 3.36% for novice police recruits (8 from 238, or about 1 in 33). The probability of having trauma symptoms was significantly increased by being a probationary constable ($p = .007$), the type of trauma exposure ($p < .001$), and by high Neuroticism Scale scores ($p = .006$). The probability of having trauma symptoms was significantly decreased by not having a reported family history of professional psychological assistance for emotional difficulties ($p = .05$), by not having exposure to the sources of information and advice perceived as available following a traumatic event or by such information and following a traumatic event being perceived as not relevant ($p < .001$).

The most significant explanatory variables for the percentage increase in severity of trauma symptoms, given their presence, were perception of life threat ($p = .003$), total exposure to traumatic events weighted by subjective impact ($p < .001$) and high Neuroticism Scale scores ($p < .001$). The most significant explanatory variables for the percentage decrease in severity of trauma symptoms, given their presence, were not having personally identified with the traumatic event ($p < .004$), not having a reported history of childhood emotional abuse or neglect, ($p = .013$), being of non-Catholic

religious faith (p = .021), and by the perceived availability of emotional social support following a traumatic event being seen as irrelevant (p = .002). In the next chapter the findings from the repeated measures study will be presented.

Chapter Eight

The Repeated Measures Study of Traumatic Stress Reactions in Police

The Repeated Measures Study of Traumatic Stress Reactions in Police

The Research Participants

Selection

The participants in this study were all the novice police recruits assessed in the cross-sectional study compared to themselves after 12 months of operational policing. This second study was essentially a replication of the first using a within subjects design. Participants volunteered from the following Police Academy of NSW classes:

- New recruits (Phase One) about to enter intake classes 250 (January, 1992) and 251 (April, 1992) N = 238.
- Probationary constables (Phase Five) from these same classes returning to complete formal training at the NSW Police Academy after their twelve months field service in June, 1993 and September, 1993 N= 193

The repeated measures sample was 81% of the original group who participated in the study as Phase One novice police recruits. Of the 225 probationary constables returning from these classes from whom intake data had been collected, it was possible to match 193 research participants (86%). This is a very high response rate for a longitudinal study investigating traumatic stress reactions (Baum et al., 1993). The Police Academy provided some information about the original 238 research participants from classes 250 and 251. Eight recruits resigned later in Phase One. Two participants were relegated to a later class and two were medically discharged during Phase Three of their training. Two hundred and twenty nine students were sworn in as probationary constables, and four of these were delayed students from previous intakes. Only those research participants providing a registration number from which they could be individually identified could be considered.

Methods

The research procedures and measures were the same as those used in the cross-sectional study.

The Prevalence of PTSD in Police

In the repeated measures study the current prevalence rates for PTSD were as follows:

- for novice recruits 3.36% (8 from 238 novice recruits or about 1 in 33),
- for themselves as probationary constables 8.29% (16 from 193 probationary constables or about 1 in 12).

As in the cross-sectional study, it was not meaningful to analyse these data using inferential statistics because of the low percentages involved but again it was possible to use a two stage statistical procedure to model the probability of trauma symptomatology and its severity. It was also possible to look at relationships between Neuroticism Scale scores and trauma symptoms over time.

The Process of Statistical Analysis

The process of statistical analysis in this repeated measures study involved the same steps described in the cross-sectional study namely, exploratory data analysis, statistical model formulation, statistical model fitting, and statistical model checking. The procedures used were essentially a replication of the cross-sectional study. The repeated measures study made some additional contributions by investigating the relationship between the Neuroticism scores of novice police recruits and their trauma symptoms after a year of operational policing. Changes in Neuroticism scores from Time One to Time Two, as a function of trauma symptoms at one year, were examined. The relationship between baseline trauma symptoms and trauma symptoms after one year of operational policing was also investigated.

As in the cross -sectional study there were a large number of research participants with no reported trauma symptoms. The data were not normally distributed. The same partially manual stepwise regression procedure, described in the last chapter, was used to approximate the best predictors of trauma symptoms. The data was again modelled in two stages. The stage one model was for the presence or absence of trauma symptoms and an iterative reweighted least squares multiple regression model was used for estimation. Pairing, or the possibility of intra subject correlations, was ignored given the absence of significant intra subject correlations. The stage two model was for the severity of trauma symptomatology, given its presence, and a mixed model, namely of both random and fixed effects was fitted. In this second model, restricted maximum likelihood estimates were used (Weisberg, 1985). Simple linear regression was used to examine the relationships between Neuroticism and trauma symptoms over time.

Stage one: Model specification for the presence / absence of trauma symptoms

Presence or absence (one or more trauma symptom present versus no trauma symptoms) on a logistic scale. The logit form of the model is :

Logit (p) = constant + effect of novice police recruit + probationary constable + total frequency of trauma exposure + type of trauma exposure + recency of trauma exposure + length of trauma exposure + Neuroticism Scale scores + total frequency of trauma exposure weighted by subjective impact + personal identification with the traumatic event + perception of life threat + perceived availability of social support when needed following trauma exposure + possible interaction effects between variables.

Where Logit = log(p/(1-p))

Where p is the probability of expression of trauma symptomatology.

Stage two: Model specification for the severity of trauma symptoms, given their presence

The model can be expressed as:

E (log PTQTOTF) = constant + effect of novice police recruit + probationary constable + total frequency of trauma exposure + type of trauma exposure + recency of trauma exposure + length of trauma exposure + Neuroticism Scale scores + total frequency of trauma exposure weighted by subjective impact + personal identification with the traumatic event + perception of life threat + perceived availability of social support when needed following trauma exposure + possible interaction effects between variables.

Where E is expected level of the mean and where log PTQTOTF is the transformed value of frequency of trauma symptoms.

Model checking

The assumptions of all three statistical models were successfully examined by using the standard diagnostics described in the previous chapter.

Results

The results will be presented in three separate sections in accordance with the way the data were statistically modelled. The first section will describe the best predictors for the probability of developing trauma symptoms using iterative reweighted least squares multiple regression. The second section will describe the best predictors for severity of trauma symptoms, given its presence, using restricted maximum likelihood estimates. The third section will describe the relationships between Neuroticism and trauma symptoms over time using simple linear regression.

The Presence of Trauma Symptoms in Police

The effects of each of the explanatory variables on the presence of trauma symptoms were considered whilst, in turn, controlling for the effects of all the other variables. The probability of having trauma symptomatology was significantly increased by the following factors:

- perceived lack of availability of practical assistance when needed following a traumatic event,
- being exposed to currently available sources of information and advice following a traumatic event,
- high Neuroticism Scale scores.

The odds of having trauma symptoms were increased by a lack of practical assistance following a traumatic event by 227%, and by high Neuroticism Scale scores by 8%.

The odds of having trauma symptoms were decreased by either not having exposure to the sources of information and advice perceived as currently available following a traumatic event or the perceived availability of such information and advice following a traumatic event being seen as irrelevant by 71%.

The regression coefficients, standard errors, the chi square statistics, and their significance levels are shown in Table 8.1. The chi square statistics are adjusted for all the other variables in the model. The effects are depicted graphically in Figures 8.1, 8.2. and 8.3.

Table 8.1: The Probability of Trauma Symptoms

	Coefficient	**Standard Error**	**Chi square (df1)**	**p <**
Information Yes	0.00	0.00		
Information No/Irrelevant	-1.25	0.30	18.41	.001
Practical Assistance Yes/Irrelevant	0.00	0.00		
Practical Assistance No	1.18	0.35	14.90	.001
Neuroticism Scale	0.076	0.025	9.47	.002

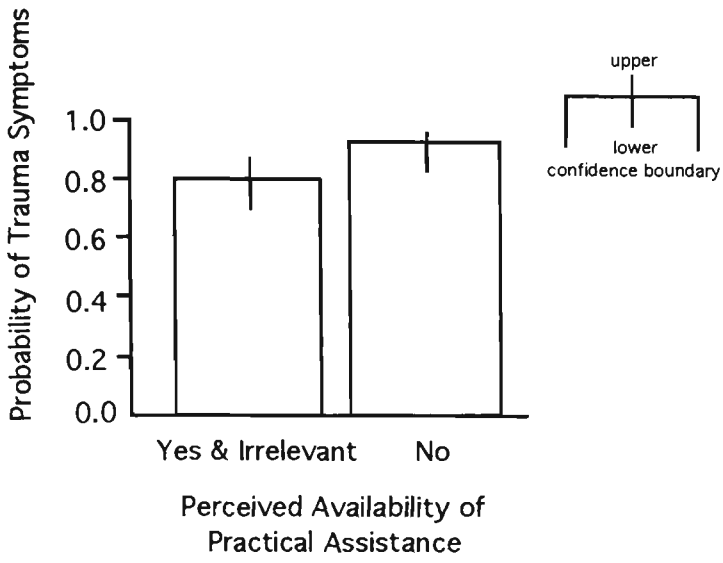

Figure 8.1: The Probability of Trauma Symptoms and Perceived Availability of Practical Assistance

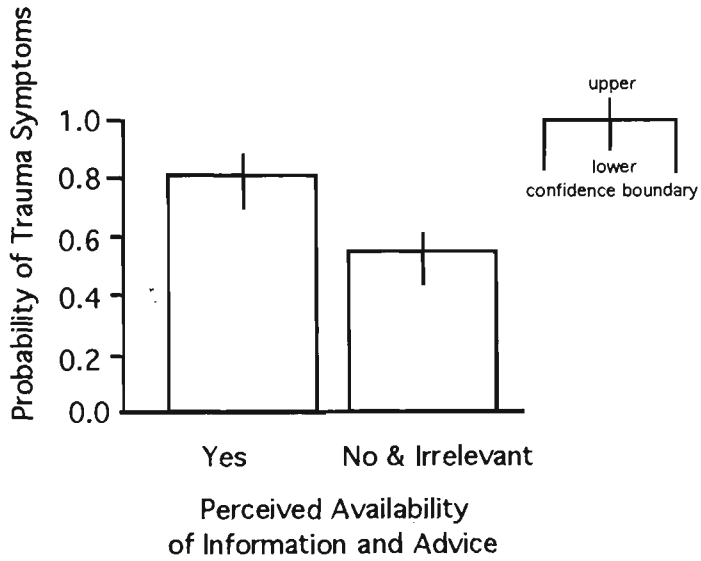

Figure 8.2: The Probability of Trauma Symptoms and Perceived Availability of Information and Advice

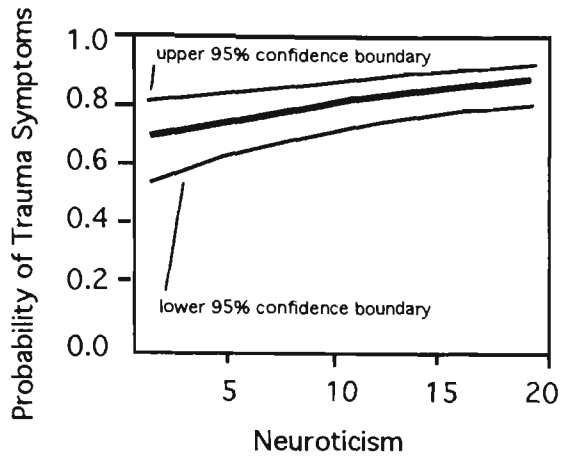

Figure 8.3: The Probability of Trauma Symptoms and Neuroticism Scale scores

The Severity of Trauma Symptoms in Police

When all the zero scores were excluded, the most significant explanatory variable for the severity of trauma symptoms, given its presence, was Neuroticism. The percentage increase in the severity of trauma symptoms was 7% for Neuroticism.

The regression coefficient, standard error, the F value, and its significance level are shown in Table 8.2. The F statistic given, is adjusted for all the other variables in the model. The results are depicted graphically in Figure 8.4.

Table 8.2: The Severity of Trauma Symptoms

	Coefficient	**Standard Error**	**F (1,238)**	**p <**
Neuroticism Scale	0.07	0.01	54.52	.001

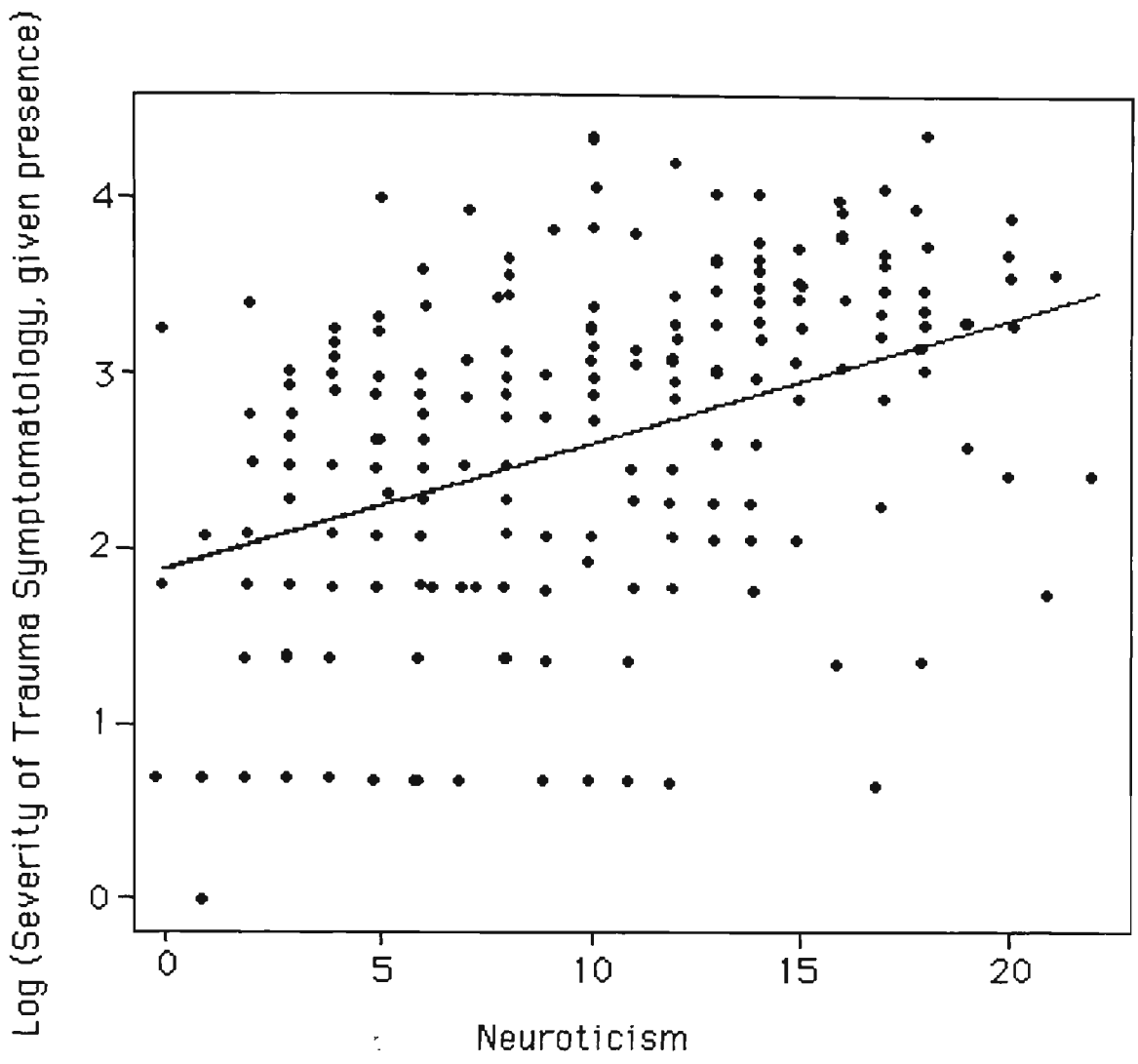

Figure 8.4: The Severity of Trauma Symptoms and Neuroticism Scale scores

Relationships Over Time Between Neuroticism and Trauma Symptoms in Police

In this section the results of three set of analyses over time will be presented, namely, the relationship between baseline Neuroticism Scale scores and trauma symptoms at one year; changes in Neuroticism Scale scores as a function of trauma symptoms; and the relationship between baseline trauma symptoms and trauma symptoms after one year of operational policing.

The relationship between Neuroticism Scale scores and trauma symptoms

The relationship between the Neuroticism Scale scores of novice police recruits and their trauma symptoms after one year of operational policing was examined using simple linear regression. Those participants scoring zero on the Neuroticism Scale or trauma symptoms were excluded from the analysis. Baseline Neuroticism Scale scores had a significant relationship with trauma symptoms after one year of operational policing $p < .001$.

The regression coefficient, standard error, the F value, and its significance level are shown in Table 8.3. The results are depicted graphically in Figure 8.5.

Table 8.3: Baseline Neuroticism Scale Scores and Trauma Symptoms at One Year

	Coefficient	**Standard Error**	**F (1,122)**	**p <**
Baseline Neuroticism Scale	0.05	0.02	12.27	.001

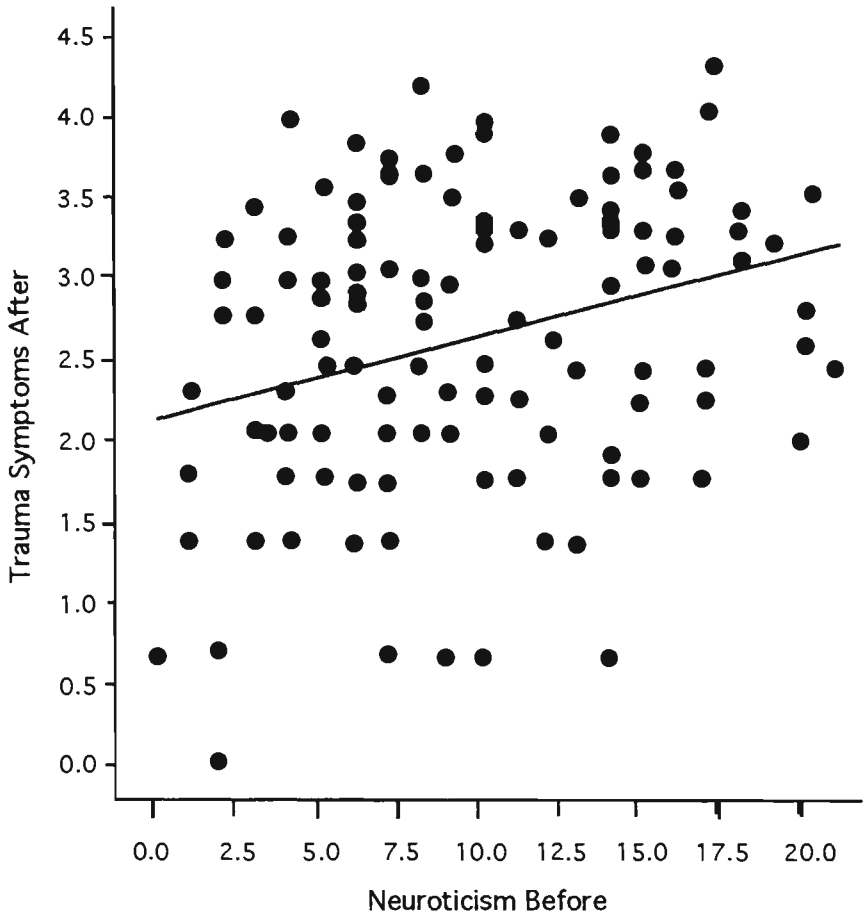

Figure 8.5: Baseline Neuroticism Scale Scores and Trauma Symptoms at One Year

Changes in Neuroticism Scale scores and trauma symptoms after one year

It was considered valuable to investigate whether participants' negative personal theories, as measured by Neuroticism Scale scores, changed in response to trauma symptoms after one year using simple linear regression. All zero scores were excluded from the analysis. There was evidence of a shift in Neuroticism Scale scores as a function of trauma symptoms after one year. This difference was significant $p < .001$.

The regression coefficient, standard error, the F value, and its significance level are shown in Table 8.4. The results are depicted graphically in Figure 8.6.

Table 8.4: Changes in Neuroticism Scale Scores as a Function of Trauma Symptoms

	Coefficient	Standard error	F (1,118)	p <
Trauma Symptoms After One year	1.22	0.37	10.73	.001

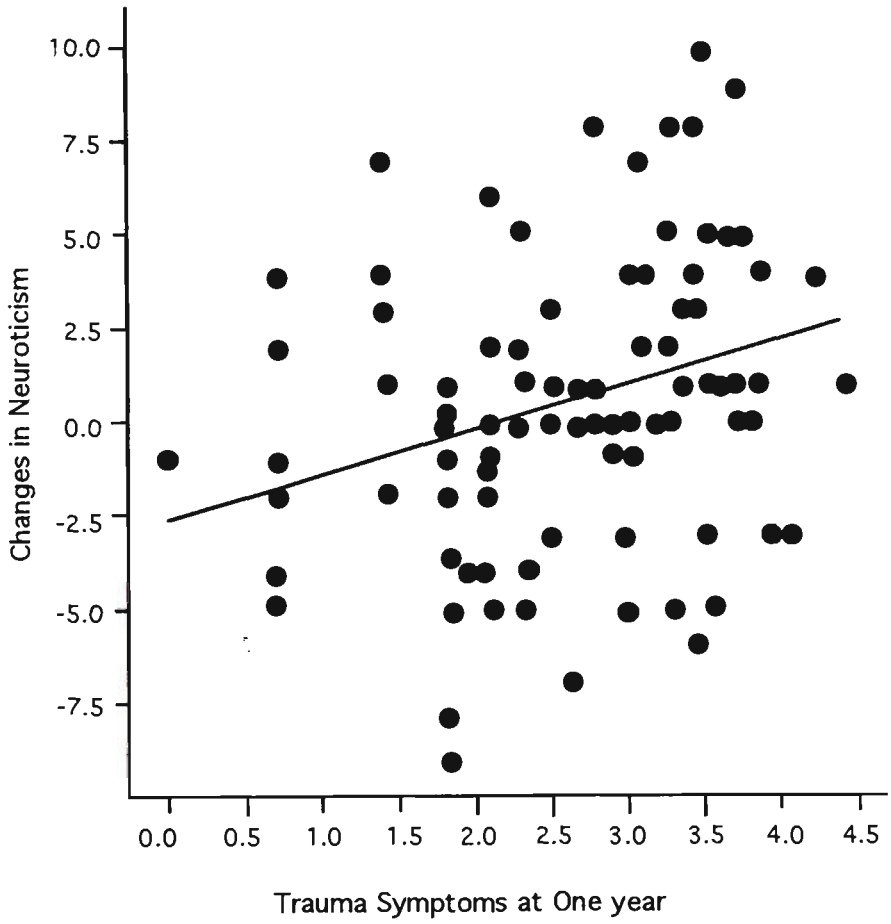

Figure 8.6: Changes in Neuroticism Scale Scores as a Function of Trauma Symptoms

Trauma symptoms over time

The relationship between baseline trauma symptoms and trauma symptoms after one year of operational policing was examined using simple linear regression. All the zero score were again excluded from the analysis. There was no evidence that baseline trauma symptoms predicted trauma symptoms at time two.

The regression coefficient, standard error, and the F value shown in Table 8.5. The results are depicted graphically in Figure 8.7.

Table 8.5: Trauma Symptoms Over Time

	Coefficient	**Standard Error**	**F (1,88)**	**p**
Trauma Symptoms Before	0.14	0.12	1.35	N. S.

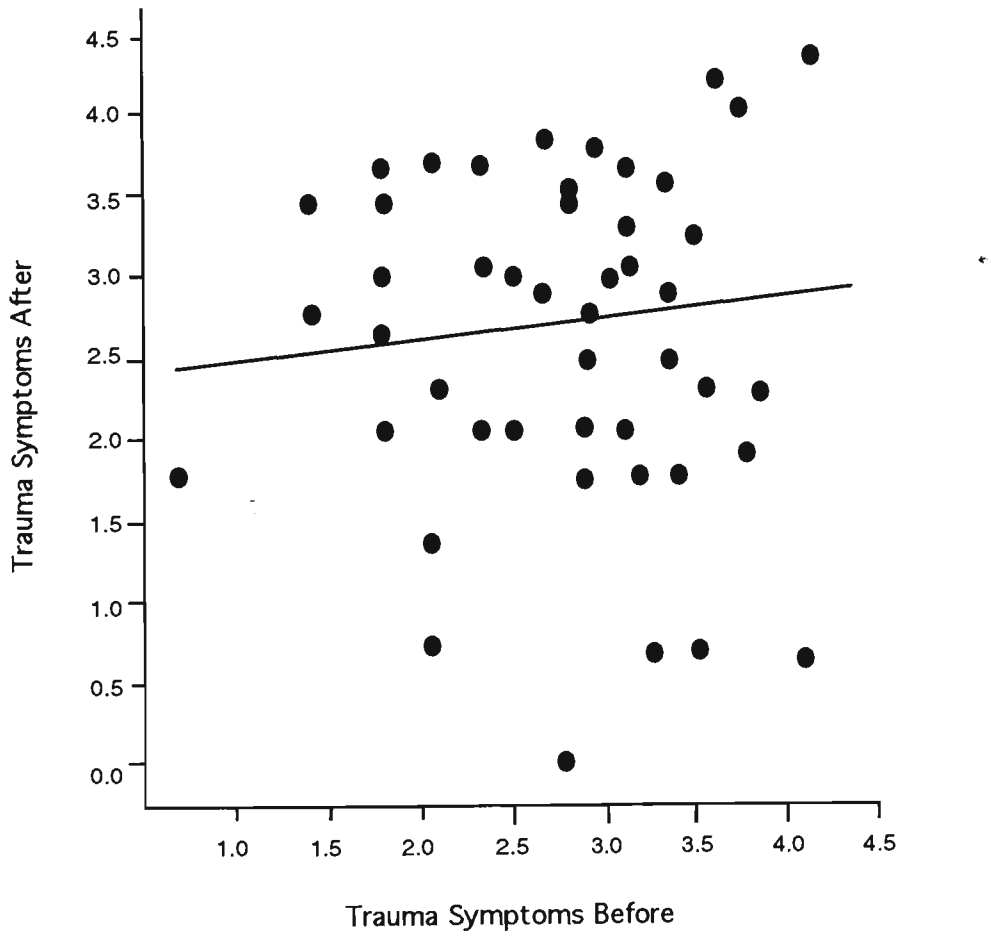

Figure 8.7: Trauma Symptoms Over Time

Summary and Conclusions

The current prevalence rates for PTSD in the repeated measures study for probationary constables were 8.29% (16 from 193 or about 1 in 12) compared to themselves as novice recruits 3.36% (8 from 238 or about 1 in 33). The probability of having trauma symptoms was significantly increased by a lack of perceived availability of practical assistance when needed following a traumatic event ($p < .001$) and Neuroticism ($p = .002$). The probability of having trauma symptoms was significantly decreased by not having exposure to the current sources of information and advice perceived as available following a traumatic event or by such information and advice following a traumatic event being perceived as not relevant ($p < .001$). The most significant explanatory variable for the percentage increase in severity of trauma symptoms, given its presence, was Neuroticism ($p < .001$). Baseline Neuroticism Scale scores predicted trauma symptoms after one year of operational policing ($p < .001$). Neuroticism Scale scores shifted from Time One to Time Two as a function of trauma symptoms at Time Two ($p < .001$). The relationship between baseline trauma symptoms and trauma symptoms after one year of operational policing was not statistically significant. In the next chapter, the findings of both the cross-sectional and the repeated measures studies will be discussed.

Chapter Nine

Discussion of the Research Findings

Discussion of the Research Findings

In this chapter the implications of the research results with police for a personal construct model of traumatic stress reactions will be discussed. The research programme will be critically evaluated and suggestions for future research will be made.

Implications of the Research Findings with Police for a Personal Construct Model of Traumatic Stress Reactions

General Statement

Both of the studies in this research programme with police provided empirical support for aspects of a personal construct model of traumatic stress reactions. The research programme successfully evaluated some core predictions derived from this new working theoretical model. This personal construct model of traumatisation attempts to comprehensively address and subsume key concepts drawn from the theoretical and empirical literatures within a rationally integrated and comprehensive framework. However, there is little doubt that some of the research findings could also be explained within other formulations of traumatic stress reactions. The significance and generalisability of these results also need to be considered within the limitations of an opportunity sampling strategy. There is a clear need to establish psychometrically standardised measures with which to assess work-related trauma (Paton & Smith, 1995) and the psychometric properties of many of the preliminary measures used in this research programme have not been investigated. The direction of effect is difficult to disentangle when considering the relationships between the available sources of social support and the presence and severity of trauma symptoms. The Neuroticism Scale was used as the only measure of personal theories and the significance of the research findings may be limited by this reality. There are other considerations which should be

taken into account when interpreting these studies and in considering their implications. These considerations include the unique characteristics of the population studied, the lack of national or international comparison data on trauma levels within other policing organisations, the equal relevance of the findings to previously traumatised novice police recruits, the possible influence of demand characteristics, the lack of attention to concurrent psychological difficulties, the inherent limitations of self-report measures, the impact of ethical considerations, problems in the assessment of PTSD, and in understanding the nature of relationships between multiple variables.

Despite these limitations, my research question "Will there be higher prevalence rates of diagnosable Posttraumatic Stress Disorder in probationary constables with twelve months operational experience compared to that of novice police recruits?" finds a clear answer in both studies. There were higher prevalence rates of diagnosable Posttraumatic Stress Disorder among probationary constables as compared to novice police recruits. Eleven of the twelve hypotheses found some empirical support. In the cross-sectional study, each of the hypothesised explanatory variables proved to significantly influence either the presence or the severity of trauma symptoms in police. The critical role of negative fundamental personal theories or core processes and the influence of the favourability of the recovery environment on trauma symptoms, were also demonstrated in the repeated measures study. In all, the findings from both these studies with police are consistent with the proposed personal construct model of traumatic stress reactions.

Personal Factors

A number of personal factors were considered in the data analyses for their influence on trauma symptoms. These included: 1) demographic variables such as age, gender, educational level, primary ethnic origin, socio-economic background, religious affiliation, and marital status; 2) possessing a negative personal theory as measured by the Neuroticism Scale; and 3) relevant reported past history variables, such as a family history of professional psychological assistance for emotional difficulties, a history of child sexual abuse, a history of child physical abuse, a history of child emotional abuse or neglect, or a previous history of life-threatening trauma exposure. Those personal factors which successfully predicted either the presence or the severity of trauma symptoms were a negative personal theory as measured by the Neuroticism Scale, a reported family history of emotional difficulties, a reported history of childhood emotional abuse or neglect, and being of Catholic religious faith. The implications of these findings for a personal construct model of traumatic stress reactions are discussed in more detail below.

The Neuroticism Scale

There was some support for Hypothesis 2 which predicted that trauma symptoms will be associated with police having negative personal theories as evidenced by high Neuroticism Scale scores. Neuroticism predicted both the probability of having trauma symptoms and its severity in both the cross-sectional and repeated measures studies. This finding is consistent with those from other studies (Breslau et al., 1991; McFarlane, 1989; Thompson & Solomon, 1991).

However, in the absence of baseline scores for both trauma symptoms and for the Neuroticism Scale it has not been previously possible to systematically examine the nature of their relationships. In previous studies, people scoring highly on Neuroticism

have generally been considered to have been more vulnerable to the development of PTSD (Breslau et al., 1991; McFarlane, 1989). However, these studies are often based on retrospective recall of personal functioning prior to exposure to a potentially traumatising life event. Indeed, in one study, Neuroticism was not assessed until 29 months after the traumatic event (McFarlane, 1989). It is quite conceivable that traumatised people may describe their previous personal functioning either less favourably or more favourably than non-traumatised people (Green, 1994). Interestingly, many of the questions on the Neuroticism Scale of the Eysenck Personality Questionnaire (EPQ) have a lot in common with the negative sequelae associated with traumatisation and with the many other psychological difficulties commonly associated with PTSD (Eysenck & Eysenck, 1975). The Neuroticism Scale includes questions on irritability, being troubled with feelings of guilt, being nervous, worrying about awful things that might happen, being tense or highly strung, suffering from sleeplessness, wishing for death, suffering from nerves, being easily hurt and touchy, experiencing significant mood changes, feeling miserable for no apparent reason, self-consciousness, feeling fed up, worrying, feeling listless and tired, and feeling lonely. The influence of trauma symptoms and the Neuroticism Scale have been confounded in those studies proposing Neuroticism as a vulnerability factor in the development of PTSD. The repeated measures study demonstrated that baseline Neuroticism scores had a statistically significant relationship with trauma symptoms after one year of operational policing thereby providing support for Hypothesis 10. In support of Hypothesis 11 there were also significant changes in Neuroticism Scale scores from Time One to Time Two as a function of the presence and frequency of trauma symptoms at Time Two.

The interpretation of these findings is limited by the sole use of the Neuroticism Scale as a measure of negative personal theories, but the results are consistent with the personal construct proposal, that people who have negative and impermeable personal theories are more likely to anticipate and construe life events as traumatising as was predicted in Hypotheses 2 and 10. The shift in Neuroticism Scale scores as a function of trauma symptoms supports the proposal that traumatising events confirm the predictive

viability of these negative personal theories and makes them stronger, as was predicted in Hypothesis 11.

Reported family history of emotional difficulties

Having close relatives with a history of psychological difficulties predicted the probability of having trauma symptoms in the cross-sectional study. This finding provides support for Hypothesis 3 that trauma symptoms would be associated with police having such previous experiences of an unfavourable and invalidating environment. A personal construct model of traumatisation proposed that these close family members were manifesting psychological symptoms as a means of asking urgent behavioural questions concerning their own personal meanings and would therefore be less able to create an environment favourable to the formation of new constructs for their children. It was proposed that having close family members with significant psychological problems would be more conducive to the development of less permeable negative personal theories and the choice of "hostile" behavioural options. Police growing up in invalidating environments would therefore be more vulnerable to developing trauma symptoms. This finding is consistent with other epidemiological studies using population rather than clinical samples (Breslau et al., 1991; Davidson et al., 1991; Kulka et al., 1990).

Reported history of childhood emotional abuse or neglect

In the cross-sectional study the severity of trauma symptoms was associated with police having previous experiences of an unfavourable and invalidating environment as evidenced by a previous reported history of child emotional abuse or emotional neglect. This finding provides support for Hypothesis 4. Interestingly, neither reported childhood physical abuse or reported childhood sexual assault explained trauma symptoms in police. Other studies on small clinical samples have found that a history of child physical

abuse was a risk factor for PTSD in Vietnam veterans (Bremner et al., 1993; Zaidi & Foy, 1994). Being abused as a child and sexual abuse before the age of 16 were also risk factors for the development of PTSD in one population study (Davidson et al., 1991). The fact that neither reported child sexual or reported child physical abuse were associated with the development or the severity of trauma symptoms in police, may be associated with an unwillingness by police to disclose such experiences on a questionnaire. Alternatively, the research participants may have completely disassociated from these experiences. Amnesia for childhood experiences of abuse is well-documented (Briere & Conte, 1993; Cromwell et al., 1993; Herman, 1992; Oksana, 1994; Smith, 1993). It may also be that the associated emotional trauma is one of the critical issues in determining the long-term effects of both physical and sexual assault. Such trauma can include prolonged experiences of disrespect, hostility, betrayal of trust, degradation, terror, isolation, exploitation, invasion of personal boundaries, and complete disregard and denial of the child's needs. Emotional abuse or neglect is also a very direct assault on a child's perception of themselves as valuable and competent and the world as safe and responsive. Emotional abuse or neglect is very likely to be a threat to core processes particularly if it is perpetrated by significant adults in a child's life. A personal construct model of traumatic stress reactions predicted that those police who reported long histories of confirmation of negative views of themselves, their worth, their reality, and their power would be more vulnerable to potentially traumatising events. There was support for this assertion.

Previous traumatisation

Having a previous history of exposure to traumatic events was not associated with either the development or severity of trauma symptoms in police. This finding is consistent with the proposed theory. The threat to core processes represented by a stressful life event is directly associated with exposure and individual psychological proximity rather than simply exposure alone. The importance of psychological proximity has also been

demonstrated in a study on the Queen St shootings in Melbourne, Australia. People who normally worked on the floors where the fatal shootings occurred had higher symptom levels irrespective of their physical presence during the actual shootings than did people who did not work on those floors (Creamer, 1993b; Creamer et al., 1989). The critical role of psychological proximity does not deny the concurrent contention that some stressful life events will represent a threat to the core processes of most people.

The repeated measures study provided no support for Hypothesis 12. In this hypothesis it was proposed that novice police recruits who already had trauma symptoms would be more vulnerable to developing trauma symptoms after 12 months of operational policing. It was expected that these recruits would be anticipating further threat and exposure to potentially traumatising life events would confirm and strengthen these predictions. It is possible that those participants who reported trauma symptoms as novice police recruits may have under reported trauma symptoms as probationary constables. The support for this suggestion of under reporting lies in the discussion of the recovery environment and it will be described in more detail in that section. It is also feasible that some police who reported trauma symptoms at recruitment may have been able to successfully resolve their previous traumatisation experiences. In a personal construct model they would have then become more psychologically integrated and differentiated and therefore even more capable of dealing with the potentially traumatising events. For example, police recruits who had trauma symptoms as a result of domestic violence in their family of origin may have felt safe from the perpetrators of this violence for the first time in their lives. This new reality may have helped to facilitate their healing process towards psychological independence and freedom from violence. This same process might be alternatively described as a kind of "stress inoculation" within some information processing theories of traumatisation (Foa & Riggs, 1993). Changing patterns of trauma symptoms could also simply reflect the influence of numerous other factors which were not considered in this research programme, or provide some support for the fluctuating and changeable pattern of symptom presentation that has been reported

in other studies investigating the persistence of PTSD (Blank, 1993; McFarlane 1988; 1989).

Catholic religious faith

Being of non-catholic religious faith significantly decreased the severity of trauma symptoms in the cross-sectional study. This result was not anticipated and such an effect has not been reported in other studies investigating religious faith and traumatic stress reactions (Davidson & Fairbank, 1993; Green, 1994). It is possible that some Catholics may be more readily dislodged from their core roles, experience greater guilt, and therefore be more susceptible to the negative effects of potentially traumatising events. Police of Catholic religious faith may feel more betrayed by a God who allows children to suffer and die and who does not stop other injustice. Exposure to such experiences may be more likely to represent a threat to the fundamental personal meanings of Catholic people and to therefore exacerbate their trauma symptoms. It is also possible that Catholic police may have been more likely to report trauma symptoms as a way of almost "confessing" their distress.

Other Demographic Variables

No other demographic variables predicted the presence or the severity of trauma symptoms. The demographic factors investigated in this research programme have predicted diagnosable PTSD in some other studies, for example, age (Green et al., 1990; Norris, 1992; Thompson Fullilove et al., 1993), gender (Breslau et al., 1991; Helzer et al., 1987; Norris, 1992; Shore et al., 1989), educational level (Breslau et al., 1991), primary ethnic or racial origin (Davidson & Fairbank, 1993; Green, 1994; Kulka et al., 1990; Kulka & Schlenger, 1993; Schlenger et al., 1992), and socio-economic background (Davidson et al., 1991; Kulka et al., 1990; Shore et al., 1989). It was not possible to find any studies showing a relationship between marital status and PTSD.

It is also not at all unusual for demographic factors not to predict PTSD or for the nature of these demographic predictors to vary substantially across studies (Davidson & Fairbank, 1993; Green, 1994). This is not surprising given the broad assumptions of homogeneity implied by demographic categories. However, it is of particular note that female police were no more likely to report trauma symptoms than their male counterparts. This may say something about the creative behavioural choices employed by female police who experience significant power inequities and invalidation within some policing organisations (Sutton, 1992); but a more parsimonious explanation might be that men and women are exposed to similar levels of traumatic stress within this particular policing organisation and factors other than their gender were simply more powerful predictors of trauma symptoms.

Characteristics of Traumatic Events

There was support for a personal construct analysis of the characteristics of traumatic events which were anticipated to be associated with trauma symptoms. There was some empirical support for Hypotheses 5, 6, 7, and 8. In the cross-sectional study, the type of trauma exposure explained the presence of trauma symptoms. Personal identification with a traumatic event, perception of life threat, and total frequency of trauma exposure weighted by subjective impact influenced the severity of trauma symptoms. A personal construct model of traumatisation predicted the explanatory power of these variables because of their psychological proximity and the high and ongoing levels of threat they represent to fundamental personal meanings (core processes). These studies indicated that the length, recency, and total frequency of trauma exposure alone were not predictive of either the development or the severity of trauma symptoms.

These same anticipated characteristics of traumatic events were not significant explanatory variables in the repeated measures study. This is consistent with the general disparity between the two studies. Possible reasons for some differences between the

studies will be explored more fully when trauma levels are discussed in the section on the recovery environment.

The type of trauma exposure

The type of trauma exposure was very strongly associated with the probability of having trauma symptoms. This finding provides support for Hypothesis 7. Traumatic events including a sudden infant death, news of sudden death or accident, and needing to give a death message to the relatives of a deceased child increased the odds of having trauma symptoms by 667%. Seeing someone very badly hurt or killed increased the odds of having trauma symptoms by 487%. The combined effect of events involving physical assault, narrow escape, threat, sudden injury or accident, military combat, rape, and others experience increased the odds of having trauma symptoms by 399%. Experiences of mutilated and decomposed bodies, autopsies, pointing a revolver at someone, and other trauma increased the odds of having trauma symptoms by 66%. These findings were anticipated because some life events represent high levels of threat to the core beliefs of most police. It was the less sensational and more personal events like sudden infant deaths, death messages involving children, and seeing people hurt and killed that exerted the greatest influence on trauma symptoms. This result is consistent with the other findings on the importance of the psychological proximity of a stressful event (Brown & Campbell, 1990; Burton et al., 1994; Card, 1987; Coman & Evans, 1991; Creamer et al., 1989; Elder & Clipp, 1988; Fairbank et al., 1994; Foy et al., 1987; Goldberg et al., 1990; Green, 1993; Helzer et al., 1987; Kilpatrick et al., 1989; Kulka et al., 1990; Lee & Stoneham, 1994; Lipson, 1986; March, 1993; Pynoos et al., 1987; Savery et al., 1993; Shore et al., 1989; Spielberger et al., 1981; Winfield et al., 1990). The nature of these particularly traumatising events is of particular concern given that many operational police will have repeated and regular exposure to such experiences as part of their normal occupational duties.

Total exposure weighted by subjective impact

A personal construct model of traumatisation predicted that trauma symptoms in police would be associated with the frequency of total trauma exposure and its subjective impact because of the ongoing high levels of threat to fundamental personal meanings (core processes) and the unfavourable nature of such conditions for forming new constructs (Kelly, 1955). Frequency of trauma exposure weighted by subjective impact did significantly influence the severity of trauma symptoms in some research participants. This finding provides support for Hypothesis 8. Such a result is consistent with the importance of both the frequency of trauma exposure and individual psychological proximity in explaining traumatisation. The magnitude and severity of trauma exposure has frequently been a significant predictor of PTSD in many studies (Burton et al., 1994; Card, 1987; Elder & Clipp, 1988; Fairbank et al., 1994; Foy et al., 1987; Goldberg et al., 1990; Helzer et al., 1987; Kilpatrick et al., 1989; Kulka et al., 1990; March, 1993; Pynoos et al., 1987; Rowan & Foy, 1993; Shore et al., 1989; Winfield et al., 1990). Unfortunately, definitions of magnitude and severity have varied across studies. Assessing the frequency of trauma exposure weighted by subjective impact helped to explain the severity of trauma symptoms in this study with police and this approach is consistent with the recommendations of a recent review of critical assessment and methodological issues in the investigation of work-related psychological trauma (Paton & Smith, 1995).

Perception of life threat

Research participants who believed that their lives were at risk had more severe trauma symptoms than those whose did not construe such life events as an ultimate threat to their physical integrity. This finding was expected because of the high levels of threat to their fundamental personal meanings (core processes) and it provides support for Hypothesis 6. There is other evidence that greater appraisal or perception of life threat is predictive of

PTSD (Creamer et al., 1989; Kilpatrick et al., 1989; Riggs et al., 1992; Rowan & Foy, 1993).

Personal identification with the traumatic event

Personal identification with a traumatic event was associated with the severity of trauma symptoms. This finding provides support for Hypothesis 5. Events such as identifying with a brutalised and horrifically injured young person or empathising with the parent of a much loved baby who had died for no apparent reason clearly represented a threat to the fundamental personal meanings of some attending police. This finding provides additional evidence for the critical role of psychological proximity to life events and further validation for a personal construct analysis of traumatic stress reactions. This finding is also consistent with other evidence suggesting the important role of personal identification with a traumatic event on the subsequent development of trauma symptoms (Creamer et al., 1989; Hodgkinson & Shepherd, 1994; Lipson, 1986). The profoundly negative impact of a psychologically close relationship between a perpetrator and a child has also been extensively documented in cases of child sexual assault (Bass & Davis, 1988; Herman, 1992; Oksana, 1994; Rowan & Foy, 1993; Smith, 1993).

The Recovery Environment

This personal construct model of traumatic stress reactions predicted that trauma levels would be higher among probationary constables with one year of operational policing experience than in novice police recruits. It was also expected that trauma symptoms in police would not be associated with their perceived availability of social support in a clear way, because social support is only one element in an optimal recovery environment. The specific findings from both studies provide evidence that this particular policing environment may be conducive to ongoing traumatisation and unfavourable to recovery from such stressful life events (Kelly, 1955). In this new model the context in which an

individual exists is seen as critical in helping to prevent vulnerability to potentially traumatising events and as central to recovery from such events. This proposition was discussed in Chapters Two, Five, and Six. Such environments may be favourable or unfavourable to the formation of new meanings for stressful life events. Environments which are favourable to increasing personal integration and flexibility and the formation of new meanings are characterised by a number of features. They provide contexts which are novel and removed from the familiar. Such environments are safe and protected but also plausible and acceptable to the individual. Optimal contexts allow people to move beyond their usual roles and ways of being in the world. They encourage trial and error learning and a safe context to try on new ways of looking at the self, the world, and the future. Favourable conditions are conducive to behavioural experimentation without catastrophic consequences. Favourable contexts also provide validating information when people are experimenting with new ways of looking at themselves, their world, and their future. The person effectively receives some returns on their new anticipations and meanings which they may then interpret and play with in a variety of ways (Kelly, 1955). In this new model, failure to maintain favourable conditions may delay the formation of new meanings as can threats to the person's identity, their sense of worth or value, their perceptions of their ability to influence the outcome of events, and their perceptions of reality. An assault to an individual's capacity to maintain themselves as a social being is also seen as being especially unfavourable to optimal adult development. Ongoing exposure to such experiences acts as confirmatory evidence for meanings learnt during the threatening event. The formation of new meanings is also inhibited by pre-occupation with old ways of viewing the self, the world, and the future. They are significant difficulties if a person has no safe opportunity to experiment with different meanings (Kelly, 1955).

The empirical findings are discussed below in terms of a personal construct analysis of favourable recovery environments. However, it should be noted that these studies only measured the availability of various forms of social support and did not directly investigate other characteristics of policing recovery environments such as their

ability to provide opportunities to experiment with new meanings for traumatic events. The evidence bearing on these contextual factors is indirect and derived from the earlier literature reviews.

Trauma Levels in Police

The research question concerned the prevalence of PTSD in probationary constables as contrasted with novice police recruits. It was proposed that the working conditions of police are largely unfavourable to the formation of new personal meanings and optimal adult development. This proposal found considerable support in both studies. It is of immediate concern that somewhere between 1 in 12 to 1 in 16 probationary constables of policing have diagnosable Posttraumatic Stress Disorder compared to 1 in 33 novice police recruits. Moreover, in the cross-sectional study the odds of having trauma symptoms were increased by 107% by being a probationary constable when the effects of all the other variables were controlled. This finding provides support for the first hypothesis that trauma symptoms will be associated with being a probationary constable with twelve months operational experience because the occupational milieu of policing is largely unfavourable to the formation of new personal meanings. However, support for the first hypothesis was not replicated in the repeated measures study. This is despite the high levels of diagnosable PTSD among this group of probationary constables and the fact that baseline trauma symptoms did not predict trauma symptoms after 12 months of operational policing in this study. One explanation for this inconsistent finding is the possibility that some of these probationary police, who had already been assessed as novice police recruits, may have chosen to underreport their trauma symptoms on the second occasion to avoid participating in a structured interview. This strategy would not have always worked because the top and bottom 10% of scorers on frequency of trauma symptoms were selected for a structured interview. Although the research participants were all volunteers there was informal pressure to participate in the studies as is evidenced by the unusually high response rates (Baum et al., 1993). It is possible that some very reluctant people may have still filled in the questionnaires. Although participants were assured of their right to withdraw at any time without any consequence,

representatives from both the Police Association of NSW and the teaching staff of the Police Academy of NSW spoke strongly in favour of participation. Research participants in the repeated measures study were familiar with the sequence and content if not the technicalities of the research procedure. They could have been changed by their prior participation in the research programme and this could have influenced their reporting of trauma symptoms on the questionnaires. This may also help account for the failure of trauma symptoms at recruitment to predict trauma symptoms after one year of operational policing. It may have been harder for these police to disguise trauma symptoms during the structured interview for PTSD where they could not be anonymous. Such an explanation is consistent with the high prevalence rate of diagnosable PTSD in this group which was assessed by structured interview and the fact that some people who had scored in the bottom 10% on the trauma symptom inventory reported diagnosable PTSD in the interview.

There are also a number of persuasive reasons why the levels of PTSD and trauma symptoms found in both these studies may be quite conservative. They include the number and combinations of symptoms required to make a diagnosis of PTSD, the need for research participants to provide an identifying registration number to be interviewed for PTSD or to be matched for follow-up in the repeated measures study, the attrition of research participants, and concerns about occupational risk and confidentiality. Some of these factors are likely to have influenced probationary constables more than novice police recruits.

The number and combinations of symptoms for a diagnosis of PTSD

Three numbing and avoidance symptoms are required to make a diagnosis of PTSD (American Psychiatric Association, 1987). An individual could effectively have twelve PTSD symptoms and still not have a diagnosis of PTSD. It only takes six trauma symptoms to make a diagnosis of PTSD if they happen to be in the right combination. A number of writers have argued for a reduction in the number of numbing symptoms

required for a diagnosis of PTSD. They suggest that the DSM-III-R criteria not only distorts prevalence rates of PTSD but has negative treatment implications for traumatised people (American Psychiatric Association, 1987; Davidson and Foa, 1993; Kilpatrick and Resnick, 1993). Unfortunately, the number of numbing symptoms required to make a diagnosis of PTSD has not changed in recent times (American Psychiatric Association, 1994). There is also empirical evidence that the Diagnostic Interview Schedule for DSM-III-R (Robins et al., 1988) used in these and many other studies may actually underestimate the number of avoidance and numbing symptoms (Creamer et al., 1989; Green, 1993; Solomon and Canino, 1990). Furthermore, many trauma symptoms are either interpersonal in nature or in terms of their potential impact namely, diminished interest in significant activities, feelings of detachment and estrangement, a restricted range of affect, and irritability and outbursts of anger (American Psychiatric Association, 1987). These symptoms are likely to be under-reported by traumatised police who are struggling for their very psychological survival. Such police may not be willing or able to acknowledge that they have interpersonal difficulties. Traumatised police will be having difficulties in significant relationships and may have substantial problems in either construing the views of others or the impact of their behaviour on other people. It would also be very difficult for operational police to actively avoid reminders of traumatising life events such as fatal car accidents, suicides, murders, adult and child rape, and potential life threat. This factor may have also exerted an influence on the number of research participants reporting avoidance symptoms.

The need for an identifying registration number

Only those people who provided a registration number could be interviewed and assessed for PTSD. Importantly, it was also only these research participants who could be matched in the repeated measures study. Presumably some of the people who chose not to provide this identifying information had trauma symptoms and diagnosable PTSD. In fact, there is some empirical evidence to suggest that those people who are most severely

traumatised do not participate in follow-up studies (Green and Grace, 1988). It is these people by the very nature of their traumatisation who are likely to feel the most unsafe and mistrustful.

Attrition

All the police who were medically discharged, who resigned from the police service, who had their employment terminated, who were relegated to a later classes, or who did not volunteer for the studies are not included in these results. Clearly, some of these police were having difficulty coping, occupationally and academically. It does not seem unreasonable to suggest that part of the reason they may not have been coping could be related to traumatisation.

Occupational risk and confidentiality

The research participants in these studies were being asked to talk about their most private and painful experiences to a stranger and to risk making themselves very vulnerable by discussing traumatic experiences. Many openly wept both during and after these interviews because for some it was the first time they had expressed their enormous pain and experienced validation. Many other police may have chosen not to risk this degree of vulnerability in what they may have seen as an unsafe place. Such a decision could well be interpreted as self protective and appropriate during a period of final academic evaluation prior to graduation. Some participants were also concerned that the taped interviews were really a front for an internal police investigation and may have understandably chosen not to trust the confidential nature of the research.

There is a general and often quite justified mistrust of mental health professionals and researchers among police (O'Connell, 1994). Police have often been the subjects of well-intentioned surveys. In some policing organisations there has been a strong emphasis on individual coping (Toohey, 1993). Police are often very intent on "proving"

to mental health professionals that they are coping very well. Disguising problems may be preferable to the occupational risks represented by questions concerning their emotional stability. For a number of years mental health professionals have been formally internally employed by many policing organisations. Some police have concerns about confidentiality, the quality of services, and that clear separations exist between clinical and personnel functions. It seems likely then that trauma symptoms may have been under-reported by probationary police in both questionnaire and interview situations.

The weight of evidence on trauma levels in these police provides support for the research question and the hypothesis which proposed that policing environments are not only conducive to traumatisation but unfavourable to recovery. This assertion is consistent with the views of other writers who have emphasised the influence of organisational, managerial, support factors on the perceived impact and recovery rates of people experiencing work-related traumatic stressors. These same workers have also emphasised the relative cost/benefits of failing to provide an understanding and supportive environment (Paton & Smith, 1995; Prince, 1992). Savery et al. (1993) found that their unstressed group of police contained the highest percentage of recruits and probationary constables. This finding indirectly suggests that trauma levels may be higher among more experienced police. In the only other systematic Australian study on the epidemiology of PTSD, O'Toole et al. (1993) found current prevalence rates of 6.8% to 17.3% in Australian Vietnam veterans. Prevalence rates of PTSD from 6.05% to 8.29% in police with only one year of operational experience are comparable to the lower end of the range of Australian Vietnam veterans. Probationary police are often isolated from their usual social networks both geographically and by virtue of their new policing occupation. It is rather frightening to think that these police are presenting with demonstrable psychological injury after only a year of operational policing. However, in the absence of comparative epidemiological data on trauma levels within other policing organisations who deal with similar contextual factors, it is not possible to draw sound conclusions about the relative environmental conditions of this particular policing environment.

The Perceived Availability of Social Support

It was proposed in Hypothesis 9 that the perceived availability of social support for police would not be associated with the amelioration of trauma symptoms in a clear way because it is only one element in a less than optimal recovery environment within policing organisations. The proposed characteristics of a favourable (optimal) recovery environment have been clearly delineated in Chapters Two, Five, Six, and Nine. Not only was there substantial support for this hypothesis in both the cross-sectional and repeated measures studies but the probability of having trauma symptoms in police was significantly increased by exposure to the perceived available sources of information and advice following a traumatic event or by such information and advice being perceived as irrelevant. In the cross-sectional study, the severity of trauma symptoms was decreased when the perceived availability of emotional support following a traumatic event was seen as irrelevant whether or not it was perceived as available. In contrast, in the repeated measures study a lack of perceived availability of practical assistance following a traumatic event predicted the probability of having trauma symptoms. The direction of effect is almost impossible to disentangle when considering the relationships between the available sources of social support and the presence and severity of trauma symptoms. In other words, are traumatised people more likely to seek or avoid various sources of social support or do these findings mean that currently available sources of emotional support and information and advice have an iatrogenic effect on the precipitation and maintenance of trauma symptoms in police?

It could also be suggested that the findings on information and advice and emotional support are the result of a number of the research participants not being exposed to potentially traumatising events. However, this explanation is inconsistent with the evidence we have on the degree of trauma exposure in even very inexperienced police in this research programme and another investigation with NSW police (Westerink, 1990). Furthermore, having trauma symptoms was also more likely in those police

exposed to the available sources of information and advice in both studies. The severity of trauma symptoms was decreased when police perceived the available sources of emotional support in handling a traumatic event as irrelevant. These police already had trauma symptoms and so this finding is not related to a lack of trauma exposure.

The strength of the finding demonstrating increased probability of trauma symptoms when practical assistance to handle traumatic events was perceived as unavailable, is interesting. The probability of having trauma symptoms was increased by 227% when such practical help following a traumatic event was perceived as not available. The personal construct model of traumatic stress reactions proposed that traumatisation was a full scale assault to an individual's fundamental personal meanings (core processes). These core processes are concerned with identity or self, sense of reality, value or worth, and power. Traumatisation was also said to be accompanied by the emotions of threat, anxiety, fear, guilt, shame, and anger. Police struggling to recover from traumatisation are very likely to feel overwhelmed and to be in states of disorganisation while they search for new meanings to understand highly stressful life events. Depending on the psychological proximity of events, such people may be fighting for their very psychological survival. It is not surprising that a lack of practical help to facilitate physical survival would predict trauma symptoms. Such assistance may involve paid time off work, driving the car, doing the paperwork, taking a different route, going in first to a potential homicide, conducting media interviews, speaking with a boss, ringing a spouse, looking after the kids, going shopping, cooking a meal, doing the laundry, and so on. It is some of these very basic but essential tasks which can seem insurmountable to traumatised people.

In all, these findings on the perceived availability of social support among police need to be interpreted with some caution because it was not possible to determine the direction of the effects. We simply do not know if traumatised police are more likely to seek or avoid social support or if these findings indicate that the current interventions may not be working and could be exacerbating their problems. There is some evidence that police do not readily reach out to ask for psychological assistance (Alexander et al., 1993;

Westerink, 1990) but the latter possibility of the iatrogenic impact of interventions has been suggested by other workers (Griffiths & Watts, 1992; Pitman et al., 1991; B. Raphael, personal communication, October 27, 1994; Scurfield, 1992). Some other studies have supported the positive effect that consistency and perceived quality of social support can have on the personal, social, and occupational functioning of traumatised people (Creamer et al., 1989; Kahana et al., 1987; 1988; Keane et al., 1985). However, the evidence from this research programme and the relevant literature is suggestive that such effects are unlikely to be consistently seen among police without some fundamental changes in their occupational milieu and the availability of a broader range of intervention options (Alexander et al., 1993; Paton & Smith, 1995; Savery et al., 1993; Toohey, 1993). The options currently available to these police are somewhat limited. In general, the resources and programmes available to identify and effectively deal with traumatisation are focussed on individual ways of coping rather than on fundamental organisational change. They are frequently under-resourced and have not been systematically evaluated (Alexander et al., 1993; Paton & Smith, 1995; Robinson & Mitchell, 1993; Savery et al., 1993; Toohey, 1993).

Critical Evaluation of the Research Programme

In this section some evaluative comments about the research programme will be made. The relevance of the research findings to traumatised novice police recruits, demand characteristics, and concurrent psychological difficulties will be discussed. I will also describe the limitations of self-report measures, ethical considerations, the assessment of PTSD, and the nature of the relationships between variables.

General Comments

This personal construct model of traumatic stress reactions has begun to be successfully empirically evaluated. This model helps explain the processes of relationships between

personal factors, characteristics of traumatic events, aspects of the recovery environment, and traumatisation. Unique normative baseline epidemiological data has been obtained on high risk population and the impact and course of traumatic stressors and their sequelae can be further assessed in the future. For the first time, a theoretically coherent, parsimonious, and viable explanation for significant individual differences in response to similar life events and relevant research bearing on these issues has been developed. The research question was clearly answered with higher prevalence rates of diagnosable Posttraumatic Stress Disorder in probationary constables with twelve months operational experience contrasted to novice police recruits in both the cross-sectional and the repeated measures studies. These studies represent a unique contribution to our understanding of traumatic stress reactions in police because the research question and hypotheses were conceptually derived, the studies used appropriate control groups, the samples were large and apparently representative, the hypotheses were tested using a unified statistical process, and significant attempts were made to take account of potentially confounding influences. A personal construct model of traumatic stress reactions is explanatory rather than descriptive and stands in sharp contrast to other theoretical models of traumatisation by virtue of its views on human nature, individual plasticity, personal power to influence the outcome of events, the self, adaptation, and the change process. This new model allows for the generation of further explanatory variables to explain traumatisation, the refinement of measurement strategies in trauma research, direction in the selection of appropriate research participants and comparison groups, a comprehensive approach to prevention, and technical versatility in treatment options. This work will be helpful in identifying priorities for prevention, intervention, and future research. However, some other important conceptual and methodological issues impact on the generalisability and significance of these findings and further consideration will now be given to these factors.

Relevance to Traumatised Novice Police Recruits

It is important to mention that many of the explanatory variables significantly associated with either the presence or the severity of trauma symptoms in these studies were predictors of overall trauma symptomatology in the whole research sample. Although the focus of this research programme has been on police, many of the findings are equally applicable to traumatised novice police recruits.

Demand Characteristics

It could be suggested that demand characteristics account for the high trauma levels among probationary constables in these studies. This assertion is contradicted by the use of an independent verification of the diagnoses of PTSD. Furthermore, a persuasive case has already been made to suggest that probationary constables are likely to under-report trauma symptoms. Nonetheless, one might still argue that the pressure on probationary constables associated with final evaluation before graduation could have exacerbated their reporting of psychological symptoms. Equally, it could be said, that novice police recruits were experiencing enormous transitional changes in those first two weeks of joining a policing organisation and this could have inflated their symptom scores. Neither possibility is likely because the trauma symptoms had to be tied to a specific and qualifying traumatic stressor for both the trauma symptom inventory and the structured interview data.

Concurrent Psychological Difficulties

This research programme could be criticised because it did not test for psychological difficulties which may have occurred concurrently with trauma symptoms and diagnosable PTSD. Time and convenience to research participants were major factors which precluded assessment for a range of psychological difficulties. Co-morbidity could

only be validly assessed by a structured interview. The constraints of conducting field research during police training made longer structured interviews for participating police untenable.

Self-Report Measures

A major issue in all non-observational psychological research is the accuracy with which people report on their own experiences. Whilst individual research participants are indisputably the best judges of how they think and feel about traumatic events, a person's state of psychological functioning may influence the accuracy with which they recall various aspects of stressful life events. For example, there is research evidence suggesting that people with less severe trauma symptoms may systematically recall less severe threats to their lives irrespective of actual life threat (Green, 1993). Personal recall of influential factors during and after traumatic events may be coloured by subsequent adjustment. This has implications for the possible confounding between predictor and outcome variables in these studies with police. Police who were willing to report their trauma symptoms may have also been more willing to respond affirmatively to all the questions. By virtue of having trauma symptoms these police could have been particularly sensitive to those questions associated with potentially traumatising events, information and advice, emotional support, and practical assistance. Having trauma symptoms may have also prejudiced the way police construed attempts to help them. However, this explanation does not fully account for the way police selectively chose between these influential factors. The possible iatrogenic impact of information and advice and the seeming irrelevance of emotional support in the amelioration of trauma symptoms in police is inconsistent with evidence for the positive impact of social support in other trauma studies (Creamer et al., 1989; Dutton et al., 1994; Hodgkinson & Shepherd, 1994; Kahana et al., 1987; 1988; Keane et al., 1985). This interpretation is also not consistent with negative role that the lack of perceived availability of practical assistance exerted on trauma symptoms in the repeated measures study. In this personal

construct model of traumatic stress reactions it was anticipated that a negative personal theory, as measured by the Neuroticism Scale, and trauma symptoms would exert a reciprocal influence on each other. There was substantial evidence for such a relationship in both studies with police. It is of particular interest that baseline Neuroticism Scale scores predicted trauma symptoms after 12 months of operational policing whilst baseline trauma symptoms did not. It may be that the Neuroticism Scale is a better predictor of trauma symptoms after a year of operational policing because it is one measure of fundamental personal theories (core processes). In some cases, pre-existing trauma symptoms may be ephemeral and precipitated by a single life event which has been resolved. The reciprocal influence of variables is central to a personal construct analysis of traumatic stress. The proposal and direction of causal linear relationships has little relevance within this framework (Kelly, 1995; Mahoney, 1995, Neimeyer, 1993; Viney, 1992a; Winter, 1992).

Ethical Considerations

It was possible but it was not considered to be ethically sound to follow up those police who had left the police service during the course of this research programme. These people had not given permission for their personal details to be disclosed or for an intrusion into their privacy. Ethical practice was a very important consideration in this research programme. Some of the research participants were clearly distressed as they were answering the research questions and participating in the structured interviews. The study was carried out within the guidelines of the National Health and Medical Research Council. Participants were fully informed about the background and purposes of these investigations. They signed consent forms and were free to discontinue their participation at any time without prejudice to their relationship with the Police Academy, the Police Service, or the Police Association in NSW. All the data were collected by an experienced clinician with many years experience in working with traumatised people and their families. All individual information was kept in a strictly confidential manner and each

participant was given telephone numbers for networks of relevant community resources. All the people reporting trauma symptoms in the structured interviews were given information, support, and follow-up when this was appropriate and entirely at their discretion. Some research participants accessed these resources.

The Assessment of PTSD

The decision to conduct diagnostic interviews for the top and bottom 10% of scorers on trauma symptomatology also meant that the same people often did not have structured interviews during the repeated measures study. This severely curtailed the possibility of exploring the most significant explanatory variables that influenced the development of full blown PTSD and should be reviewed for any similar studies in the future.

A comprehensive form of assessment for PTSD involving structured clinical interviews, psychometric measures, behavioural observation, and psychophysiological evaluation has been advocated as ideal in trauma research (Wolfe & Keane, 1993; Baum et al., 1993). Whilst a combination of these strategies make be appropriate in laboratory or clinic situations many of them are not well suited or even appropriate in a field setting. The Diagnostic Interview Schedule (DIS) was used to make a diagnosis of PTSD in these studies (Robins et al., 1988). The weight of evidence indicates that if there was any error in diagnosis in these studies the prevalence rates of PTSD in police may have been underestimated.

The Nature of the Relationships Between Variables

The patterns of relationships between variables in this research programme does not mean that the significant predictors associated with trauma symptoms have been identified as causes of traumatisation in police. The repeated measures study goes closer to beginning to address causal relationships but it is also characterised by some limitations such as the effects of familiarity, practice, learning, and motivation. There are other variables which

were not included in these investigations that may have been significant or better predictors of trauma symptoms such as more direct measures of impermeable superordinate constructs and patterns of choices between hostile and aggressive behavioural options. It is anticipated that the degree of threat to particular core processes and the extent of the dislodgment from an individual's core roles could be important in understanding trauma symptoms. People's cognitive complexity at the point of traumatisation and their history and ongoing pattern of dispersal of dependency may be other influential factors. Further personal details concerning the favourability of recovery environments for the formation of new personal meanings may have also improved these exploratory efforts at explaining and predicting traumatic stress reactions.

Future Research

It would be useful in future research on traumatic stress reactions to build on these findings and conduct more collaborative and detailed studies. This personal construct model of traumatic stress reactions could attempt to further explain and predict the effects of repeated and prolonged traumatisation. This could be explored with many populations, including experienced police, survivors of domestic violence, child abuse, sadistic torture, war, and internment. Such studies could utilise research designs which are more participatory and involve ongoing exchange between the investigators and the research participants (Viney, 1988; 1992b). In these investigations it may also be valuable to explore the possibility of contributions from the other constructivist traditions which share similar metatheoretical assumptions to those of personal construct theory. This exploration may further enrich our understanding of traumatic stress reactions. For example, recent work on narrative reconstruction may help create meanings for excruciatingly painful emotions and experiences and provide a vehicle for continuity between the past, present, and future of the trauma person (Clarke, 1991; Neimeyer, 1993; Viney, 1993).

The content and structure of the construct systems of survivors who have complete amnesia or have developed disassociated identities in response to traumatic experiences could be explored. Alternative ways of assessing impermeable negative personal theories and the nature of fragmentation could be developed and validated. Controlled prospective treatment outcome studies could be designed and implemented. Such investigations could examine changes in construct systems and emotions over time and in response to specific interventions derived from this personal construct model of traumatic stress reactions. The centrality of confronting traumatic memories and their associated feelings could be systematically assessed in this context. The derivation of these specific interventions could also draw from other relevant clinical research conducted by personal construct psychologists (Mahoney, 1991; Neimeyer, 1993; Winter, 1992).

Investigations into the nature of traumatic stressors could enquire into the extent of threat to people's core processes and the degree of dislodgment from core roles. Attempts to map core processes would inform more comprehensive personal assessments and individualised treatment interventions for traumatised people. These strategies would not be reliant on trauma people immediately recognising that they felt intense fear, helplessness, or horror during a traumatising event.

Traumatised people and especially children offer clinical investigators an opportunity to facilitate fundamental changes that may have multigenerational implications for the prevention of the negative sequelae of traumatisation. Researchers could more fully explore the developmental implications of traumatisation including the manifestations and consequences of psychological acceleration following successful resolution of traumatising events.

The nature of secondary victimisation could be understood as hostile behaviour by people responding to the threat to core processes represented by traumatising events. The need to deny, denigrate, and distance from traumatised people could be seen as having survival value and compared related to the avoidance and numbing behaviours

seen in trauma survivors. The implications of these assertions could be evaluated in the context of attempts to facilitate changes in individuals, families, organisations, communities, and societies.

With the permission of traumatised people, it could be very valuable to ask close relatives and friends about interpersonal issues such as constriction of networks and emotional numbing. The implications of unresolved traumatisation for intimate relationships including parenting could be described and addressed. Longitudinal studies could extend over several years and investigate a full range of psychological and social difficulties.

The personal construct model of traumatic stress reactions anticipates that people who resolve and recover from traumatising events would be characterised by increasing cognitive complexity, permeable superordinate constructs, aggressive behavioural choices, favourable recovery environments, and positive fundamental personal theories. It would be worthwhile to systematically evaluate some of these assertions.

Summary and Conclusions

In summary then, a personal construct model of traumatic stress reactions in police has begun to be successfully empirically evaluated. Between 1 in 12 to 1 in 16 probationary constables have diagnosable PTSD compared to 1 in 33 novice police recruits. A convincing argument for why these trauma levels may be conservative has been presented; and I have identified some of the best predictors for the presence and severity of trauma symptoms. The importance of the structure and content of a person's fundamental personal theories (core processes), a previous history of personal invalidation and unfavourable environments, and the psychological proximity of stressful life events has been demonstrated. Some life events are more likely to represent a threat to the core processes of police. These events appear to occur regularly and during ordinary occupational duties. They often involve personal tragedy on a small scale rather than

being sensational. Traumatising events appear to involve a degree of personal identification, death, seeing people badly hurt and killed, and they are sometimes associated with a perceived life threat . The personal impact of traumatic life events are as important as their frequency of occurrence. Some policing environments appear to be conducive to traumatisation and unfavourable to recovery or optimal functioning. The possible inadequacies of current interventions and the importance of fundamental and structural change in policing organisations have been described. This research programme has been critically evaluated and the significance and limitations of the research findings have been explored. Suggestions for future research have been made. Contextualised, practical, and systemic implications of a personal construct model for organisational prevention and intervention in traumatic stress reactions in police will be elucidated in the final chapter, in an attempt to achieve this third goal of the research programme.

Chapter Ten

Implications and Recommendations for the Trauma Recovery Environment Provided in Policing Organisations

Implications and Recommendations for the Trauma Recovery Environment Provided in Policing Organisations

A personal construct model of traumatisation is committed to the principles of empowerment, choice, and ongoing change to enable optimal functioning (Epting, 1981; Kelly, 1955; Mahoney, 1991). In this thesis, the explicit theoretical and empirical links for the influence of contextual factors on traumatisation and occupational distress have been specifically provided in Chapters Two, Three, Five, and Six. In this final chapter, I will describe some of the implications of this personal construct model for proposed changes in the way traumatic stress reactions in police are prevented, treated, and researched. I will discuss these proposed changes in terms of the validation and invalidation of core processes, the likelihood of hostile and aggressive behavioural choices, and environments that are favourable or unfavourable to the formation of new constructs (Kelly, 1955). A personal construct model of traumatisation assumes that environmental context is one of the critical factors in determining both vulnerability to traumatisation and the likelihood of a successful recovery following traumatisation. Positive systemic interventions in these environmental contexts are seen as important ways of facilitating the prevention and treatment of the negative consequences of traumatisation in police. The discussion in this chapter is directly related to the theoretical model and its implications. It will go beyond the data of this research programme, and as such, some of its conclusions remain speculative.

The occupational milieu of some policing organisations is not seen as favourable to the formation of permeable and more complex fundamental theories about living and working. Operational police are repeatedly exposed to stressful life events (Brown &

Campbell, 1990; Coman & Evans, 1991; Lee & Stoneham, 1994; Lipson, 1986; Savery et al., 1993; Shore et al., 1989; Spielberger et al., 1981; Westerink, 1990). These events threaten the core processes of some police (Lee & Stoneham, 1994; Spielberger et al., 1981; Westerink, 1990; Williams, 1987). There appear to be significant structural and fundamental problems in the way some policing organisations select, train, and promote their employees (Blackler, 1990; 1994; Bradley, 1994; Chilvers, 1993a). There is evidence that at least some policing organisations are characterised by inappropriate managerial styles, job designs, and systems for police accountability (Alexander et al., 1993; Allan & Davis-Meehan, 1994; Brown & Campbell, 1990; Coman & Evans, 1991; O'Connell, 1994). There may be little safety or encouragement for confidential self-disclosure or for the expression of feelings (Alexander et al., 1993; Westerink, 1990). Unfortunately, the currently available primary and secondary interventions into traumatic stress reactions in police seem to be limited in scope (Griffiths & Watts, 1992; Robinson & Mitchell, 1993; Scurfield, 1992; Toohey, 1993). The occupational environment for many operational police may be unpredictably threatening, disempowering, and devaluing (Blackler, 1994; Cooper, 1993).

Policing organisations could do much to change this situation, but the changes need to be fundamental and structural rather than superficial and cosmetic. They could move beyond a focus on individual ways of coping and begin to address the systemic problems in the ways they manage their human resources (Cooper & Sadri, 1991; Toohey, 1993). Policing organisations can create working environments which would be considered favourable within the framework of a personal construct model of traumatisation (Kelly, 1955). They could confirm a sense of personal power, unique professional identity, and positive personal value. Policing organisations could validate a reality that anticipates and helps make meaning out of stressful life events. They could provide an appropriate range of resources and support for the safe expression of powerful and fundamental emotions. Policing organisations could expect that police will make some mistakes in a contextualised learning environment where they are continually evaluating alternative ways of viewing themselves and the world. They could tangibly

reward creativity, courage, and innovation and provide a context in which it is safe to experiment with new ways of understanding and dealing with stressful life events.

Recommendations for Prevention and Intervention in Traumatic Stress Reactions in Police

Significant primary level organisational changes designed to help create policing environments which are more favourable to optimal functioning and for recovery from stressful life events will be discussed. These recommendations are consistent with the research findings from these studies on traumatic stress reactions in police, the goals of a personal construct model of traumatic stress reactions, the third objective of this doctoral thesis, and more comprehensive recent approaches to managing occupational stress (Cooper, 1993; Cooper & Sadri, 1991; Epting, 1981; Paton & Smith, 1995; Watson, 1993). The implementation of each of the changes recommended would be enhanced by further detailed critical analysis of each area. Many of the changes would need to occur concurrently to be effective. It would be important to identify the particular needs and priorities of each policing organisation with the collaborative involvement of their employees and their respective policing unions.

Duty of Care Responsibilities

The need for some policing organisations to further enact their responsibilities under the relevant Occupational Health and Safety legislation has been demonstrated by the significant number of probationary constables who are presenting with demonstrable psychological injury in the form of Posttraumatic Stress Disorder (PTSD) after only one year of operational policing. There is substantial empirical evidence for the persistence and debilitating impact of PTSD for long periods of time in some trauma survivors (Blank, 1993; Green, 1994). The relationship between PTSD and co-morbid conditions including substance abuse, depression, anxiety, and social difficulties is well-established

(Davidson & Fairbank, 1993; Green, 1994). There also appears to be a substantially increased risk of suicide associated with PTSD (Davidson et al., 1991). There is evidence that a large number of police are retired as medically unfit, with a psychiatric diagnosis (Police Association of NSW, 1990-91), but little epidemiological data on the prevalence of PTSD and related difficulties in more experienced police are available (Paton & Smith, 1995). This research programme revealed that some probationary police are at risk of developing PTSD and other trauma symptoms during the course of their occupational duties. There is also sound research evidence for an increased risk of substance abuse, cardiovascular disease, and domestic violence among some police (Alexander et al., 1993; Beutler et al., 1988; Lee & Stoneham, 1994; Neidig et al., 1992; O'Brien & Reznik, 1988). The exclusive use of internal employee assistance branches may not significantly enhance the capacity of policing organisations to assist traumatised police (Chilvers, 1993b). Critical incident stress debriefing is narrowly focussed and its effectiveness has not been demonstrated (Robinson & Mitchell, 1993). Despite the altruistic intentions of many volunteers there are legal and personnel implications associated with ongoing reliance on voluntary peer support programmes (Bartone et al., 1989; Berah et al., 1984; Hodgkinson & Shepherd, 1994; McCann & Pearlman, 1990; Raphael et al., 1984; Tonge, 1984). This research programme provided some evidence that the current interventions may not be adequate and it is possible that they could be exacerbating the difficulties of traumatised police.

Costs of Stress Reactions in Police

The human and economic costs of police stress and trauma are reflected in the personal, social, and occupational difficulties of some police (Alexander et al., 1993; Gilbert, 1990; Neidig et al., 1992; O'Brien & Reznik, 1988; Savery et al., 1993; Toohey, 1993). Some of these costs are impossible to quantify in monetary terms but the proportion of compensation claims which are stress-related is rising in Australia, Britain, and the USA (Cooper, 1993; Toohey, 1993). Stress-related compensation claims represent a

significant and disproportionate cost to organisations (Cooper, 1993; Police Association of NSW, 1990-91; Savery et al., 1993; Toohey, 1993). In addition to treatment costs, there are the costs of replacing or re-training staff. Surprisingly, no studies have been done into the organisational cost-effectiveness of losing trained and experienced police personnel (Blackler, 1994; O'Connell, 1994). It costs approximately $83,000 in wages, accommodation and food to train just one student police person for the first three phases of police education in NSW (P. Wanczura, personal communication, September 28, 1994). Even when police do not lodge compensation claims there appear to be personal and organisational costs associated with cardiovascular disease, substance abuse, domestic violence, disruption in police families, depression, anxiety, absenteeism, poor work performance, job dissatisfaction, and a diminished sense of organisational commitment (Alexander et al., 1993; Allan & Davis-Meehan, 1994; Aptech Australia, 1993; Cooper & Sadri, 1991; Lee & Stoneham, 1994; Leeman-Conley, 1990; Savery, 1991; Savery et al., 1993).

The Relationships between Police and the Community

Police are often given only limited behavioural options when dealing with the communities they police (Davidson & Veno, 1984; Golembiewski & Byong-Seob, 1990; Jefferson, 1990). Police are frequently asked to perform essentially impossible tasks such as dealing with their clients as an adversary but being required to control their emotions even when provoked (Chapman, 1971). Police are also expected to simultaneously serve the sometimes incompatible ends of law enforcement and order maintenance (Blackler, 1994; Bittner, 1967; Radelet, 1977; Wilson, 1968). Police people may often feel inadequate to fulfil their occupational role partly because of such systemic difficulties (Bailey, 1987; Cooper et al., 1982; Kroes et al., 1981). A personal construct model of traumatisation would anticipate that these "ill-structured problems", which have no clear immediate solution, would be more likely to challenge the core processes of some police and to make it less likely that they would be completing experience cycles

and moving towards cognitive complexity (Botella & Gallifa, 1993). In such circumstances, police may be more likely to choose hostile behavioural options and therefore increase their vulnerability to stressful life events, and diminish the likelihood of ongoing development towards increasing psychological integration and differentiation. The evidence suggest that some communities are likely to blame police and not consider the impossibility of their tasks (Avery, 1981; Bailey, 1987; Cooper et al., 1982; Kroes et al., 1981; O'Connell, 1994).

There appears to be a need for governments, communities, and policing organisations to directly acknowledge that the apparently growing inequalities and injustices of societies cannot be contained or controlled by police (Avery, 1981; Davidson & Veno, 1984; Golembiewski & Byong-Seob, 1990, Jefferson, 1990). This is not their job. Police are ordinary vulnerable human beings. Whilst police people serve a multiplicity of roles it is imperative that communities take responsibility for productively addressing their own structural inequities. Nearly thirty years ago the report of the English Royal Commission into policing concluded that "The prevention of crime and the detection and punishment of offenders, the protection of life and property and the preservation of public tranquillity are the direct responsibilities of ordinary citizens. The police are given certain functions to assist the public to do its work but it simply cannot be left to the police" (English Royal Commission on the Police, 1967). The police exist to help meet the needs of their client community. They do not exist to meet the needs of policing organisations or to serve as the coercive arm of governments (Avery, 1981; Blackler, 1994). It seems critical that we work with police towards creating communities which are more empowering and safe for all people. This will necessitate political policies which promote more equitable distribution of resources and power to facilitate validating social experiences and relationships which are essential to every human being if they are to continue to develop in creative and productive ways (Kelly, 1955; Mahoney, 1991; Viney, 1992a). National projects for the primary prevention of child abuse which include innovative approaches to assisting and empowering disadvantaged families are consistent

with these views (Higgins, 1990). Such programmes recognise that communities have a responsibility to prevent crime and they share some of this responsibility with police.

Selection Procedures

The Neuroticism Scale was selected as a measure of negative personal theories in this research programme out of a range of other options. The findings were suggestive of the possibility that police may not possess invariant personality traits which are necessarily more resistant or more vulnerable to stressful life events. The evidence from this research programme indicates that a combination of personal factors, characteristics of stressful life events, and the recovery environment all appear to influence the presence and severity of trauma symptoms in police. Personal factors were generally not enough, on their own, to predict which novice police recruits would be traumatised after one year of policing. It does not appear possible, with any real accuracy, to effectively screen out those police who will or will not develop trauma symptoms. The current strong reliance on personality tests to select police recruits seems to ignore their inaccuracy as predictors of occupational success and distress (Bradley, 1994; Olekalns et al., 1985; Reiner, 1990, Sutton, 1992).

However, a number of personal factors did seem to influence the vulnerability of police to developing trauma symptoms. These included a reported family history of emotional difficulties, a more negative personal theory as evidenced by higher Neuroticism Scale scores, a reported history of childhood emotional abuse or neglect, and Catholic religious affiliation. This personal construct model of traumatisation, which was supported by some research findings, suggests that selection into policing needs to involve comprehensive individual assessment including a thorough and contextualised appraisal of the applicant's life experiences, activities, and unique meaning systems (Kelly, 1955). Such individualised evaluation of potential recruits seems important because a personal construct model of traumatisation predicts that successful resolution of the negative consequences associated with an invalidating childhood environment could

actually improve the potential capabilities of a policing candidate. This model would anticipate that such a person may have become more psychologically integrated, flexible, and cognitively complex.

Such personalised assessments might only occur after a more global screening process and they could also be relevant for selection into specialist squads such as homicide or child sexual assault units. Once people have joined policing organisations, it appears essential that their initial and ongoing risk factors for psychological and physical health be assessed and monitored (Baker Medical Research Institute, 1993). Independent health professionals could do this in an ongoing, safe, and confidential way. In this model, police employees would have a right to be empowered with the knowledge of how health professionals view their changing individual vulnerabilities and strengths (Kelly, 1955; Mahoney, 1991). This information could help individual police make responsible occupational and personal choices.

Education and Training

Practices which are derived from a military model of police education and training appear to discourage the increasing cognitive complexity of individual police professionals because they do not seem to confirm core processes that encourage a sense of personal power, unique professional identity, and positive personal value. Military models of police education and training do not seem to validate a reality that anticipates and helps make meaning out of stressful life events. Instead, there appears to be an expectation of an instant and mechanical response to occupational events and an undifferentiated acceptance of any eventuality. Successful adaptation to such expectations may result in police who make hostile behavioural choices and become emotionally numb, detached, cold, and unreflective (Ericson 1982; Klockars, 1980; Muir, 1977; Niederhoffer, 1967; Skolnick, 1966). These are not the interpersonal skills that contribute to successful intimate relationships or equip police to interview victims of crime in a sensitive way.

In this personal construct model of traumatisation, police need to be given relevant learning opportunities which place operational experiences in a context so they can safely experiment with a variety of ways of understanding and resolving complex human problems sometimes under conditions of extreme stress. The purposes and meaning of a policing presence in various situations could be explored (Blackler, 1990). This research programme has demonstrated that there are particular characteristics of stressful life events which make some police more vulnerable to trauma symptoms. Educational programmes need to be experiential and include participatory approaches to anticipating and understanding the nature and processes of traumatisation (Blackler, 1990; 1994; MacDonald et al., 1990; Radelet, 1977; Schon, 1986; Witham, 1987). Educators could emphasise the importance of the type, and the psychological proximity of life events, to the risk of traumatisation because of the findings of this and other research (Brown & Campbell, 1990; Burton et al., 1994; Card, 1987; Coman & Evans, 1991; Creamer et al., 1989; Elder & Clipp, 1988; Fairbank et al., 1994; Foy et al., 1987; Goldberg et al., 1990; Green, 1993; Helzer et al., 1987; Kilpatrick et al., 1989; Kulka et al., 1990; Lee & Stoneham, 1994; Lipson, 1986; March, 1993; Pynoos et al., 1987; Savery et al., 1993; Shore et al., 1989; Spielberger et al., 1981; Winfield et al., 1990). The creative psychological survival value, but ultimately self-destructive consequences of trauma symptoms, could be examined in a contextualised and safe way. Information could be provided on a range of confidential and independent sources of empathy when police express powerful emotions. Police would have opportunities to experiment with new meanings about themselves and the world.

Fortunately, most policing organisations in Australia no longer rely exclusively on the military model of police education but many organisations are still looking for stress resistant recruits while they simultaneously demonstrate marked philosophical confusion about the meaning of police professionalism (Blackler, 1994). Policing organisations need to explicitly define what they do mean by the term "police professionalism". This definition has significant implications for the content and location of educational and training courses. An understanding of police professionalism will also

influence the methods of teaching utilised and decisions about the essential nature of core competencies in policing. If policing organisations are truly intent on employing a fully professional, rather than a craft model of policing, their educational and training practices need to be congruent with this plan (Blackler, 1994; Bradley, 1987). A fully professional model of policing will facilitate the development of police who are creative, show initiative, ask challenging questions, critically reflect on corporate and individual practice, and wish to respond to changing community needs (Blackler, 1990; 1994; MacDonald et al., 1990; Radelet, 1977; Schon, 1986; Witham, 1987). It seems imperative that the selection, training, and development of police educators is consistent with these goals. The incomes and working conditions of professional police practitioners must also be commensurate with their professional status and responsibilities to help create an organisational context which is conducive to employee satisfaction, commitment, and increasing cognitive complexity (Savery, 1991).

Current educational practice in some policing organisations may largely ignore that police have personal and family needs as well as occupational responsibilities (Sutton, 1992). Police are often separated from their families and friends for long periods during initial training thereby placing immediate pressure on important intimate relationships which, in a personal construct model, are integral to prevention and recovery from traumatisation. Work practices need to be far more friendly to policing families and provide flexible working schedules, child care facilities, and generous educational and parental leave benefits. In a few short years, many police attempt to combine personal, family, and operational responsibilities while they fulfil the academic and operational requirements of compulsory training and attempt to earn tertiary qualifications. These are not circumstances that are not likely to be conducive to optimal personal health, harmonious family functioning, or peak occupational performance (Kelly, 1955; Watson, 1993; Cooper, 1993).

Promotions

A personal construct model of traumatisation predicts that a favourable environment for a growing sense of positive personal worth, autonomy, control, and power is not provided by the promotional opportunities currently available within some policing organisations (Allan & Davis-Meehan, 1994; Chilvers, 1993a). There are reports of misinformation, nepotism, inconsistency, and injustice which may have resulted in high levels of dissatisfaction, low morale, and blocked career paths in some police (Alexander et al., 1993; Allan & Davis-Meehan, 1994; Chilvers, 1993a). Police who want career mobility often seem to have only one available path which is upwards into managerial and administrative jobs. Talented operational police can end up in positions for which they are ill-prepared. Their existing skills may not be used or further developed. There may be a need to create alternative career paths and more appropriate promotional systems for operational police (Blackler, 1994; Cooper, 1993). Such opportunities would be complimentary to a fully professional model of police education and training and, in this personal construct model, would be expected to help prevent vulnerability to traumatisation by enhancing the opportunities for the ongoing development of cognitive complexity in police.

Managerial Styles

A personal construct model of traumatisation, invites policing organisations to implement and maintain management practices which value their human resources. Supervisory staff are often in a critical position to provide validation or invalidation for fundamental predictions concerning how operational police view their identity, their worth, and their power to influence their occupational destiny. In this model, these core processes play a central role in influencing vulnerability to traumatising events.

The evidence suggests that the managerial styles of some policing organisations may not encourage initiative and experimentation with new ways of achieving community and organisational goals (Allan & Davis-Meehan, 1994; Brown & Campbell, 1990;

Coman & Evans, 1991; Cooper, 1993; Reiner, 1990). In a personal construct model of traumatisation, ethical professional practice at all levels of policing organisations is fundamental to this process (Blackler, 1994). The establishment and adherence to a code of ethics is as critical, as it is complex, in an occupation facing many moral dilemmas (Bittner, 1967; Klockars, 1985; Muir, 1977). The expressed goals of policing organisations and their managerial decisions need to be fundamentally congruent and honest. Policing organisations sometimes indicate that they exist to help meet community needs (Blackler, 1994). In this model, such an objective precludes the furthering of unspoken organisational or political agendas because these decisions would be seen as reflecting hostile behavioural choices by management and as representing significant disconfirmations to the core processes of operational police. In this model, devolution and decentralisation of professional responsibility needs to be genuine and supportive of productive innovation such as is seen in successful preventative juvenile justice programmes (O'Connell, 1991). Training and selection of police into managerial positions would be informed by their ability to show initiative and respond in reflective, flexible, and decisive ways to diverse opinions because, in this model, it is only these managers that are likely to facilitate the increasing cognitive complexity of their staff (Bradley, 1992; Cooper, 1993). Senior police administrators can be encouraged to develop and maintain collaborative and participatory working relationships where operational police and their managers are trusted to fulfil their occupational responsibilities. There is a need to shift away from autocratic, punitive, and fault-finding styles to an emphasis on individual strengths and capabilities (Alexander et al., 1993; Clarke, 1985; Crank & Caldero, 1991).

Managers at all levels could be invited to participate in contextualised training and receive micro-feedback on their ability to listen, resolve conflict, and provide and receive constructive feedback with those for whom they have supervisory responsibility. Increasing abilities in this areas could be tangibly rewarded both financially and by progress within triangular career paths (Cooper, 1993; Toohey, 1993). Such an approach may minimise the organisational and personal losses associated with police stress

reactions and compliment the strong and supportive peer relationships so evident in police stations (Allan & Davis-Meehan; 1994; Evans, 1993).

Job Designs

A personal construct model of traumatisation would predict that some of the most harmful aspect of the job designs of operational police could be altered by addressing some of the inherent problems of shift work and excessive and variable work loads. In this model, it is these issues which are most likely to negatively influence important intimate relationships and to generate uncomfortable feelings in operational police because of a lack of control and predictability (Alexander et al., 1993; Brown & Campbell, 1990; Coman & Evans, 1991; Cooper, 1993; McNulty, 1984; Spielberger et al., 1981; Spillane, 1991). These changes would need to be accompanied by the recommended reforms in the relationships between police and their communities, and changes in the selection, training, promotion, management, accountability, and range of intervention strategies available to police. These changes would be expected to directly impact on the resources available to police to deal with role ambiguity and conflict, and the expressed need of police for greater autonomy, control, participation, and recognition (Alexander et al., 1993; Brown & Campbell, 1990; Coman & Evans, 1991; Cooper, 1993).

Organisational imposition of transfers would need to be avoided because of the potential threat to the core processes of some police (Alexander et al., 1993; Cantor et al., 1994; Davidson & Veno, 1984; Toohey, 1993). There is also a need for more equitable distribution of equipment and material resources across political electorates to enable operational police to perform their duties to the best of their abilities and to provide confirmation of core processes such as the power to influence the outcome of events (O'Connell, 1994).

Accountability

The processes, rationale, and consequences of internal investigations and police accountability need to be comprehensively reviewed within the broader context of the systemic difficulties in policing organisations. This research programme provided evidence that some policing environments may be conducive to "hostile" behavioural choices as evidenced by trauma symptoms. Some police do not complete experience cycles when faced with ill structured problems such as moral dilemmas (Botella & Gallifa, 1993). These police did not develop new fundamental meanings to accommodate stressful life events. Hostile behavioural choices may be manifested across a range of highly contrived and entrenched illegal activities to relatively minor individual acts of corruption within policing organisations. Punitive measures involving greater regulation and legislatory control of individual police seem to simply perpetuate existing problems and ignore the need for primary organisational changes (O'Connell, 1994; Jefferson, 1990). It seems critical that primary organisational changes are implemented. The effectiveness of strategies arising out of recommendations made by internal and external regulatory bodies need to be systematically evaluated. Policing organisations are invited to seriously commit themselves to the processes of informal resolution of complaints against police. Since it is not up to police to control or contain the injustices of our communities, it seems imperative that operational policing success is defined in terms that go well beyond the percentage of crimes cleared by arrest (Braithwaite, 1992). Professional operational police practitioners could receive performance appraisals based on a range of order maintenance abilities for example, the defusing of conflict situations, primary crime prevention programmes, and the sensitive and supportive interviewing of victims and their relatives (Blackler, 1994; Braithwaite, 1992).

Gender and Ethnic Equity

Some policing organisations need to change the entrenched systemic bias in the operational deployment of female police and actively address the structural differences in

the relative power of men and women (Brown & Campbell, 1991; Sutton, 1992; Walklate, 1993). This research programme demonstrated that neither gender or ethnic background were associated with the development or severity of trauma symptoms in probationary police. However, there is some evidence that people who are not Caucasian males have less chance of being selected, trained, and promoted in policing organisations (Brown & Campbell, 1991; Sutton, 1992; Walklate, 1993). Some policing environments may be especially unfavourable to the optimal functioning of women and people of diverse ethnic backgrounds. There needs to be greater gender and ethnic balancing in the recruitment, training, and promotion of police. Specific attention needs to be paid to equal career development opportunities. Discrimination or harassment based on gender or race needs to be completely unacceptable in policing organisations (Sutton, 1992).

Police Culture

This research programme suggested that socialisation for some police into policing culture seems to be unfavourable to recovery from stressful life events and the formation of new personal meanings. Instead of encouraging the safe expression of painful emotions such as anger, guilt, shame, anxiety, and threat which, in this model, are so essential to recovery from traumatic events, there is still enormous social pressure on police to show no vulnerability. Rather than validating fragile core processes, shaken or shattered by traumatic events, some policing organisations strip police of their unique personal identity, their sense of personal worth, and any sense of having the power to influence the outcome of events, except by strict adherence to arbitrary and inflexible rules. Instead of facilitating gradual contextualised learning which anticipates mistakes, some police are initiated into harsh punishment based managerial styles and a culture of protect and be protected (Banton, 1964; Bittner, 1967; 1970; Chapman, 1971; Ericson, 1982; Klockars, 1980; 1985; Muir, 1977; Neiderhoffer, 1967; Punch, 1979; Reiner, 1985; Skolnick, 1966; Van Maanen, 1973).

Naturally, some police quickly learn to stay out of trouble at all costs. Rather than anticipating a reality where most operational police will be deeply wounded by some stressful life events in the course of their normal occupational duties, some policing organisations struggle with responses ranging from "hostile" denial of this reality to the use of palliative interventions. Some policing organisations and their members are still primarily concerned with the individual vulnerabilities of traumatised police (Paton & Smith, 1995; Toohey, 1993). This strategy presumably distances and protects other police from a reality where they might have been similarly hurt. Traumatised police are sometimes blamed and even ridiculed because of a presumed lack of personal resilience (Higgins, 1994). Primary level organisational changes of the type described above could potentially help ameliorate some of these disturbing circumstances over time.

Treatment Strategies

In addition to systemic changes and ongoing contextualised educational programmes, police need to be provided with a comprehensive range of independent, confidential, and decentralised intervention options. Independent practitioners could help prevent and treat the complex and ubiquitous sequelae sometimes associated with traumatisation. This research programme suggests that there needs to be a move away from palliative interventions, which focus almost exclusively on sensational incidents, towards a greater emphasis on the personal tragedies that operational police encounter in their normal duties. Clinical and personnel functions need to be absolutely distinct (Chilvers, 1993b). In this personal construct model of traumatisation, employee advocates would be encouraged to thoroughly explore occupational and social interventions which could strengthen the existing supports and networks of individual police.

A personal construct model of traumatic stress reactions proposed that a wide spectrum of psychological, social, and occupational difficulties have psychological survival value for some police. These reactions may include but are not limited to PTSD. Traumatised police may experience various combinations of trauma symptoms. They may

abuse alcohol, tobacco, and prescribed and non-prescribed medications. These police may overwork, overeat, or overexercise to avoid painful feelings. They may become depressed and suicidal. They may be more likely to be violent and to experience other disruptions in their families. With prolonged traumatisation some police may exhibit significant personality and character changes (Herman, 1992). Traumatised police need to form new personal meanings and to develop new ways to understand traumatising events. In the meantime the reactions or "symptoms" described may allow psychologically wounded police to continue to make some successful predictions about themselves and their world. For example, if everyone is up and dressed at a certain time, the type of dinner is reliable, and the living room is free of children's toys, a traumatised person may feel some sense of personal control. Any variation in this schedule may result in feelings of panic and outbursts of rage which are out of proportion to the current situation. Such a rigid regime may serve to protect the traumatised person from having to feel the pain associated with being powerless when there was no hope of saving a dying child who was trapped and desperately screaming for help during a motor vehicle accident.

Attempting to assist trauma survivors and traumatised emergency workers can be distressing to the helpers (Bartone et al., 1989; Berah et al., 1984; Hodgkinson & Shepherd, 1994; McCann & Pearlman, 1990; Raphael et al., 1984; Tonge, 1984). This evidence has direct implications for the training, support, and nature of assistance offered by everyone, especially volunteers. Volunteers generously provide their services, in addition to their normal responsibilities, in victim and peer support programmes. These volunteers may be psychologically injured as result. This issue should be addressed.

In this model, traumatised police need ready access to versatile treatments which are derived from a coherent theoretical model of traumatic stress reactions (Harter, 1988; Neimeyer, 1988; 1993). Treatment could be highly individualised and acknowledge the fluid and reciprocal relationship between the person, their context, and their behaviours. Interventions could be focussed on creating circumstances in the personal, social, and

occupational environments of traumatised police which are favourable to recovery and optimal functioning (Kelly, 1955).

Future Police Research

It is hoped that policing organisations in the future would fund sound research to help achieve these major organisational reforms. Further explanatory prevalence data on traumatisation and associated difficulties in more experienced police is required because this research focussed on inexperienced police. In a personal construct model, intervention in the organisational context is seen as having a critical role in influencing the vulnerability and recovery of traumatised police. It seems important that continually reviewed standards for employee assistance programmes in policing are introduced. The processes of police accountability and review needs to be informed by research. The effectiveness of organisational changes in selection, training, promotion and managerial styles needs to be evaluated. Studies need to influence programmes introduced to address gender, racial, and ethnic inequities. The long term changes in police culture associated with the implementation of the other recommendations need to be empirically monitored. It seems imperative that independent research influence policies which create real opportunities for optimal health and functioning in those associated with policing organisations.

Summary and Conclusions

This research programme had three major goals. Firstly, to empirically evaluate aspects of a personal construct model which attempts to explain and predict the effects of traumatic stress reactions. Secondly, to measure the effects of traumatisation in inexperienced police and novice police recruits. Finally, to identify some of the major implications of its findings for policing organisations. I believe these three objectives have been achieved. An integrated theoretical model of traumatic stress reactions was

proposed which is distinct from other formulations. A viable explanation for the relationships between personal factors, characteristics of traumatic events, aspects of the recovery environment, and traumatisation was suggested. The spectrum of negative and positive sequelae following traumatic events, including PTSD were described. Both individual differences and recent research were examined. Aspects of this model were successfully and systematically evaluated in a large research programme with police. Between 1 in 12 to 1 in 16 probationary constables have diagnosable Posttraumatic Stress Disorder in contrast to 1 in 33 novice police recruits. Some factors were demonstrated to be important in understanding the processes of traumatisation in police, namely, the structure and content of fundamental personal theories, previous reported histories of personal invalidation in unfavourable environments, the psychological proximity of stressful life events, and unfavourable aspects of some policing environments. The limitations of these findings have also been discussed. In this final chapter, major organisational reforms in some policing organisations were recommended. These recommendations were derived from a personal construct model of traumatisation. Aspects of this model were evaluated and supported by the research findings. Some of the discussion in this final chapter goes beyond the empirical research and is speculative. However, such a discussion seems pertinent in a clinical doctoral thesis aspiring in some small way to help reduce the human and economic costs of traumatic stress reactions in police.

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