

DYNAMICS OF INDIVIDUAL VIGOUR AND BURNOUT IN THE POLICE SERVICE

by

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PREFACE

This thesis is dedicated to my family with the following inspirational words to my children:

“The roots of education are bitter, but the fruit is sweet”

- Aristotle-

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The highest honour goes to the Almighty God for giving me the ability and patience to complete this thesis.

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DECLARATION

I, the undersigned, hereby declare that the thesis, "Dynamics of individual vigour and burnout in the police service," is my own work, and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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SUMMARY

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by

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DEGREE: D LITT ET PHIL

SUBJECT: INDUSTRIAL AND ORGANISATIONAL PSYCHOLOGY

PROMOTER: PROF. A. M. VIVIERS

Police officers provide emergency services to the public, while being simultaneously exposed to various organisational and social stressors over which they have little or no control. The outcome of this may be that highly committed and loyal police officers become psychologically and physically burned-out. Adversely, others may accept the same conditions and situations as a challenge and live an energetic and proactive life while experiencing a positive affective state (vigour) toward their duties. Officers who are burned-out may fail to meet their goal to protect the public, but eventually may suffer. The general objective of this study was to investigate vigour and burnout as obliquely related outcomes of the stress and coping process in terms of its dynamic relationship with challenges or threats, and the mediating role of personal factors, social resources and coping resources in the police context.

The research is a qualitative explication of theoretical concepts and constructs, followed by a quantitative empirical survey design. The survey led to a Structural Equation Model (SEM) fit between empirical data and the Moos (1994) hypothesised stress and coping model. Seven measuring instruments were used to collect data. Job demands, work overload and uncertainty were identified as causes of work stress originating within the work situation. Respondents indicated that family members play a role in social support, although it decreases when stress increases.

The SEM procedure revealed that social support and personality has a limited and direct effect on well-being when experiencing a positive affective state (vigour), with coping strategies deleted from the experimental model. Adversely, stress has a direct effect on

well-being (and eventually burnout) with no moderating effects by the hypothesised variables.

The study proposes a new Police Vigour and Burnout Model (PVBM) as an alignment to the Moos (1994) model. It is recommended that vigour and burnout, as outcomes of the stress and coping process, be included in future studies as obliquely related variables in other spheres of society. An additional proposal is that stress inducing features within the police organisation should be scrutinized and critically addressed to prevent negative psychological affects.

KEY TERMS: police stress, coping, social support, personality, coping strategies, vigour, burnout, structural equation modelling, conservation of resources.

CHAPTER 1

RESEARCH ORIENTATION

1.1 INTRODUCTION

This research focuses on the dynamics of individual vigour and burnout in the South African Police Service (SAPS). The purpose of this chapter is to provide an overview with regard to the theoretical background, the problem statement and the objectives of the research. In addition, the research design and the research will be explicated. The relevant theories and models of the research are also evaluated in this chapter. The chapter is concluded with an outline of the chapters to follow in this thesis.

1.2 BACKGROUND AND MOTIVATION FOR THE RESEARCH

Work is one of the most important activities in peoples' lives (McEvan, 2001; O' Brien, 1986; Warr, 1992; Williams & Cooper, 1999). A major part of peoples' lives is dedicated to work. Humans are also dependent on work to earn a living. Under healthy circumstances, people enjoy being at work. Work creates an opportunity for social interaction and has meaning to the human self-esteem. However, the only way this optimum condition can be maintained, is to ensure that healthy conditions are sustained (Newell, 2002).

The intra-psychological functioning of the individual plays a decisive role in the maintenance of individual health. It becomes activated in the reciprocal relationship between the personal system, environmental threats/challenges and life crises. It gives life to individual vigour or burnout depending on the controllability of the situation. Controllability is re-inforced by individual responses such as cognitive appraisal, coping responses, and perceived social support as mediators (Anshel, 2000; Moos, 1994, 2002; Sarafino, 2002; Stephens, 2005).

The role the individual is supposed to fulfill in the work environment might be dangerous

or emotionally taxing, for example the work situations of firemen or police officers. Police work has been ranked among the top five most stressful occupations worldwide. In turn it has particularly high levels of physical and mental problems among employees, as well as high levels of absenteeism, sickness, burnout and premature retirement (Anshel, 2000; Anshel, Robertson & Caputi, 1997; Gulle, Tredoux & Foster, 1998).

In addition, it is confirmed that insurance claims on grounds of psychological impairment are increasing steadily. It can be assumed that more and more people out of the working class become alienated from, or disabled in the work environment where he or she is supposed to spend a great deal of his or her life (Coetzer & Emsley, 1996; Hugo, Thornton, Emsley, Theron, De Villiers & Hemp, 2001). A further assumption, is that high risk occupations, like police work, may also be part of the high prevalence of impairment cases. It should be expected that future research in the South African context should be focused on emotional energy (vigour) as a positive outcome, and consequently burnout as a phenomenon that causes impairment.

Literature support for the above argument lies in Schaufeli and Enzman (1998) and Schaufeli's (2003) statements that the prevalence of burnout in the United States of America and the Netherlands is the highest among teaching and law enforcement occupations. There is evidence that the prevalence of burnout, which is a product of distress (Schaufeli, 2003), is increasing in South Africa among police officers (Gulle et al., 1998; Mostert & Joubert, 2005; Rothmann & Jorgensen, 2007; Wiese, Storm & Rothmann, 2003a). There is consensus that prolonged stress causes burnout in police environments, but two questions emanate from this dilemma. The one is: What is the antithesis of burnout? Because not all officers are burned out under the same circumstances. The second is: On which level should it be investigated - on individual or organisational? Until recent times, burnout was researched as a negative state without much interest in its antithesis such as vigour or other positive states (Schaufeli & Bakker, 2004; Shirom, 2003a). According to Shirom (2003a, 2003b) research of this nature should concentrate on the antecedents and dynamic processes that constitute vigour and burnout.

Further, if the intra-individual psychological functioning as part of the dynamic stress-coping process in police environments can be understood, employee assistance programmes may be developed to promote positive individual outcomes, and to avoid the consequences of negative affects (Moos, 1986; Shirom, 2003a, 2003b; Spielberger, Westberry & Greenfield, 1995). Although working individuals are functioning in groups or organisations, experiences with regard to employee well-being should be focused on individual level instead of organisational level, because the individual is a sub-system of the organisational processes (Hjelle & Ziegler, 1992; Robbins, 2003; Schaufeli, 2003).

The major theoretical approaches to work-related stress and its outcomes are reviewed in Cooper (1998). Such models are suggested by Beehr (1998), Edwards, Caplan and Harrison (1998), as well as Cummings and Cooper (1998). These theoretical perspectives differ in their conceptualisation of stress and place different emphasis on individual personality differences and on situational variables that may moderate stress-burnout relations. Recent mainstream models such as the Job-Demands Resources model (JD-R) and the Comprehensive Burnout and Engagement (COBE) model suggest that burnout is mainly predicted by job demands and a lack of job resources, whereas engagement (an antipode of burnout) is exclusively predicted by available job resources (Bakker, Demerouti & Schaufeli, 2003; Schaufeli & Bakker, 2004).

Engagement is a positive mirror-image of burnout as proposed by Maslach (1998) as well as Maslach, Schaufeli and Leiter (2001). The theoretical underpinning of engagement is under suspicion due to its relatedness with the Maslach Burnout Model (see explanation in section 1.3) (Maslach, 1998). Therefore, vigour, a dimension of engagement that facilitates goal-directed behaviour or approach behaviour, is suggested as a positive counterpart of burnout (Carver & Scheier, 1990; Fredrickson, 2002; Maslach, 1998; Shirom, 2003a, 2004).

Neither of the afore-mentioned stress models have a conceptual framework that explains the reciprocal relationship between environmental challenges/threats and the individual

experience of such a relationship. Excluded from the afore-mentioned models, is a simultaneous mediating role by personal factors, coping strategies and social support within (and outside) organisations, that are causal to individual un- or well-being (Moos, 1994; 1986).

If organisations want to promote positive outcomes such as vigour and prevent the side affects of burnout, relevant research results should be considered to promote the overall well-being of all individual employees as required in an efficient human resources policy (Amstrong, 1999). However, the promotion of vigour as a positive outcome can only be achieved if the research problems can be overcome as pointed out in the next section of this chapter.

1.3 PROBLEM STATEMENT

As deduced from the previous section, stress and burnout research is not without controversy (Schaufeli, 2003; Shirom, 2003b). Stress is the trigger of the coping process during which variables such as personal factors, environmental factors, and life crises are appraised through cognitive processes, ability and strategies, in order to achieve an individual state of positive (vigour) or negative (burnout) affect (Shirom, 2003a, 2003b). These variables are components of a reciprocal process that form the theme of this research. There is no agreement among researchers on how this process and its components should be operationalised (Amirkahn, 1990; Lazarus & Folkman, 1984; Pearlin & Schooler, 1978; Schafer, 1996; Schaufeli, 2003). There is also no overarching theory or model of burnout as a dichotomous phenomenon (Schaufeli, 2003).

Thus, various problems emanate from stress-coping research literature. Those that refer to work organisations as one or another source of stressors depict the stress-coping process in a static mode. The Facet model of organisational stress, suggested by Beehr (1998), proposes stress as a process and refers to facets which have consequences on organisational functioning. Here the focus is on the organisation and not on the individual.

Simultaneously, the “Person-Environment fit” (P-E fit) model, postulated by Edwards, Caplan and Harrison (1998), place a dual emphasis on the person and environment as the source of stress when these two entities do not have a perfect fit.

The Cybernetic theory of organisational stress postulates concepts of cybernetics or systems control with the purpose to strive for homeostasis (Cummings & Cooper, 1998). The purpose of cybernetic systems is discrepancy education. However, it can lead to the lowering of standards that are against human behaviour that eliminates discrepancy by means of goal setting. This model is characterised by re-activity instead of pro-activity and can therefore, not be suitable for a health management framework.

Besides the fact that the afore-mentioned models lack a comprehensive framework, such models also ignore the dynamic interaction between variables during the stress-coping process. Further, stress research focuses on organisational processes and not on the individual employee in the organisation (Moos, 1986). Although mainstream models such as the JD-R and the COBE include the reciprocal and mediating relationship between individual differences, work characteristics and social relationship, the latter is limited to work relationships (see Bakker et al., 2004). Furthermore, individual difference as a mediating factor is limited to optimism as an individual orientation (see Barkhuizen & Rothmann, 2006).

In case of burnout as an outcome of prolonged stress, three schools of thought are in existence to explain this phenomenon, and only the one with a proper theoretical underpinning can be accepted for this research. Firstly, the Maslach Burnout Model and Inventory (MBI) explains burnout as a syndrome that consists of three dimensions: emotional exhaustion, depersonalisation and reduced personal accomplishment (Maslach & Leiter, 1997). These three dimensions are not deducted theoretically but resulted from labelling exploratory factor-analysed items initially collected to reflect the range of experiences associated with the phenomenon of burnout (Maslach, 1998; Schaufeli & Enzmann, 1998; Shirom, 2003b). Engagement is linked to this model as an antipode of

burnout that questions the theoretical underpinning of the latter phenomenon (Schaufeli & Bakker, 2004; Shirom, 2003a, 2003b; Shirom & Melamed, 2006).

Secondly, the Pines Burnout Model and Measure (BM) propose burnout as an uni-dimensional phenomenon that also emerged from clinical experiences and case studies. None of its symptoms are anchored in the context of work or employment relationships. In addition, the discriminant validity of burnout as assessed by the Burnout Measure (BM), relative to depression, anxiety, and self-esteem is impaired (Shirom, 2003b; Shirom & Ezrachi, 2003).

Thirdly, the Shirom-Melamed Burnout Model and Measure (S-MBM) (Shirom, 2003b) are extensions of the MBI and BM, and in contrast with the first two models, theoretically is founded on Hobfoll's (1989) conservation of resources (COR) theory. The S-MBM is also linked to vigour as an antithesis of burnout by means of the Shirom-Melamed Vigour Measure (SMVM) which proposes a positive state that emerges from the support of social resources (Shirom, 2003a, 2003b). The latter model is also in support of recent resilient models proposed by Fredrickson (2002) and Kumpfer (1999).

Although not part of the mainstream organisational research, the Moos (1994) model gives a conceptual framework of the stress and coping process. The Moos (1994) model has been used in social as well as organisational settings (see Moos, 1986, 1994, 2002). This model fills the gap by explaining the relationship between stress and health outcomes, and simultaneously placing emphasis on the dynamic interaction between environmental and personal factors, including the mediating roles of individual differences, and social resources in and outside the organisational context that may have an effect during the coping process. The transactional and coherent relationship between variable during the coping process as suggested in the model, motivates why the title of this research focuses on the dynamics of individual vigour and burnout, because the mechanics of the model constitute a framework for the research. This an indication of the non-static nature of the stress and coping process. Whereas personality as such can be regarded as a dynamic

trait (see Mischel, Shoda & Smith, 2004), interaction and change created between variables during the stress and coping process, reflects the dynamics of the Moos (1994) model. Prolonged stress activates an interaction between the individual's personality, personal resources and cognitive processes in order to cope with such stressors. Collins and Sayer (2000, p. 478) confirm that a process through which movement or systematic change occur, can be regarded as "dynamic" and not static. The Moos (1994) model however, lacks definition with regard to the outcomes of the stress and coping process. It refers to "health and well-being." Health and well-being, especially psychological well-being, are multi-dimensional constructs with regard to the self and the domains in life in which these facets manifest themselves. The conceptualisation of psychological well-being is controversial and appears to be unresolved (Ryan & Deci, 2001; Ryff & Singer, 1998; Sheldon & King, 2001). To resolve the problem, Wissing and Van Eeden (2002) are of the opinion that the manifestation of well-being facets, as they appear in a particular domain, should be investigated in such a domain.

Traditional occupational health studies mainly focused on negative outcomes of the stress and coping process and ignored the possibility that the latter process can produce dual outcomes (Schaufeli & Bakker, 2001, 2004). In group or organisational context, it appears that the outcome of the stress and coping process in many instances is manifested in terms of burnout and one or another counterpart, and that the measurement of burnout should also include such an antitheses (Bakker, Demerouti & Verbeke, 2004; Kop, Euwema & Schaufeli, 1999; Lumb & Breazeale, 2002; Shirom 2003a). In many instances police officers present symptoms of burnout, while others are filled with vigour under the same conditions or circumstances (Wiese, Rothmann & Storm, 2003). Why would some officers lack in energy while others are vigorous in the execution of their jobs under the same conditions?

Research refers in particular to individual dysfunctional behaviour in a police context (Paton, 2005; Stevens 2005). Reports reflect symptoms of job and career alienation, anxiety, frustration, suicide, trauma, aggression, post traumatic stress disorders, hyper-activity and brutality. In the case of this research, vigour, which is usually a dimension of

engagement, is included as a construct to explain burnout's counterpart. In support of the vigour-burnout bivariate relationship (see Cacioppo, Gardner & Berntson, 1999; Davidson, 2000), Berry (1998) confirms that some police officers are experiencing stressful situations with excitement and positiveness, while others are not. Certain officers may prefer the excitement of chasing criminals in busy streets, while others may prefer to do ordinary patrols in residential areas. Those who prefer to chase cars under dangerous circumstances may experience it with excitement, but those who like ordinary patrols may well experience fear and anxiety, and vice versa. The reason for differentiation in stress responses is still not properly understood or explained in research cadres (Aspinwall & Taylor, 1997).

The hypothesised theoretical framework of the stress and coping process has never been exposed to any empirical study or Structural Equation Modelling (SEM) exercise (personal communication, 7 November 2007). Therefore, if the undermentioned research questions can be answered, the objective of this research should be to institute the theoretical framework of the dynamics of individual vigour and burnout via the Moos (1994) model. Furthermore, if the empirical data does not support a perfect fit in terms of the said model, a modification of the Moos (1994) model is suggested. In addition, recommendations for the improvement of theory, future research and practical applications can be made.

The following research questions emanate from the above arguments:

- What are the dynamics of individual vigour and burnout with special reference to stressors and the coping process in a police context?;
- How can individual vigour and burnout be explained as outcomes of the stress-coping process?; and
- What are the dynamics of individual vigour and burnout in a sample of South African Police Service members?

1.4 RESEARCH OBJECTIVES

The objectives of this research are formulated in terms of a general objective and specific objectives.

1.4.1 General objective

The general objective of this research was to investigate vigour and burnout as a stress and coping outcomes and its reciprocal relationship with environmental challenges, or threats, and the mediating role of personal factors and social resources among police officers.

1.4.2 Specific objectives

The following are formulated as literature objectives:

- To conceptualise and integrate the dynamics of individual vigour and burnout with special reference to stressors and coping processes in a police context; and
- To conceptualise vigour and burnout as outcomes of the dynamic stress and coping process.

The following is formulated as empirical objectives:

- To determine the dynamics of individual vigour and burnout and its reciprocal relationship during the coping process with critical variables as suggested by the Moos (1994) model in terms of the South African Police Service as a research population; and
- To propose a new model in terms of empirical findings in order to explain the stress

and coping process relevant to police work environments.

1.5 RESEARCH MODEL

The research model proposed by Mouton and Marais (1992, p. 21), serves as a framework for the research process in order to investigate and address the above-mentioned problem statement and research objectives. Figure 1.1, is a schematic proposal of Mouton and Marais's (1992, p. 23) model. The purpose of the model is to integrate the five dimensions of social research in a systematic research framework of the research process. These authors refer to the dimensions as the sociological, ontological, teleological, epistemological and methodological dimensions. In this research, the sociological dimension is addressed.

In accordance with this model, the assumption can be made that research is a social process. It explains a theoretical and systemic framework and underlines the three sub-systems and the research domain that interact with each other, as identified within a particular discipline (in this case Industrial and Organisational Psychology). The sub-systems are the intellectual climate, the market of intellectual sources, and the research process itself.

1.6 PARADIGMATIC PERSPECTIVE

As postulated by Kuhn (1962), Mouton and Marais (1992) include a paradigmatic perspective as an overarching construct in their model. Paradigms are sets of rules and regulations that do two things. First, they establish boundaries. Secondly, they provide rules for success in solving problems within these boundaries. Paradigms represent a broad view, perspective or a framework of something. In this case, it serves as a scientific research framework. Paradigms usually consist out of meta theoretical premises, theories, models and an empirical level, for example, constructs that can be measured. In this

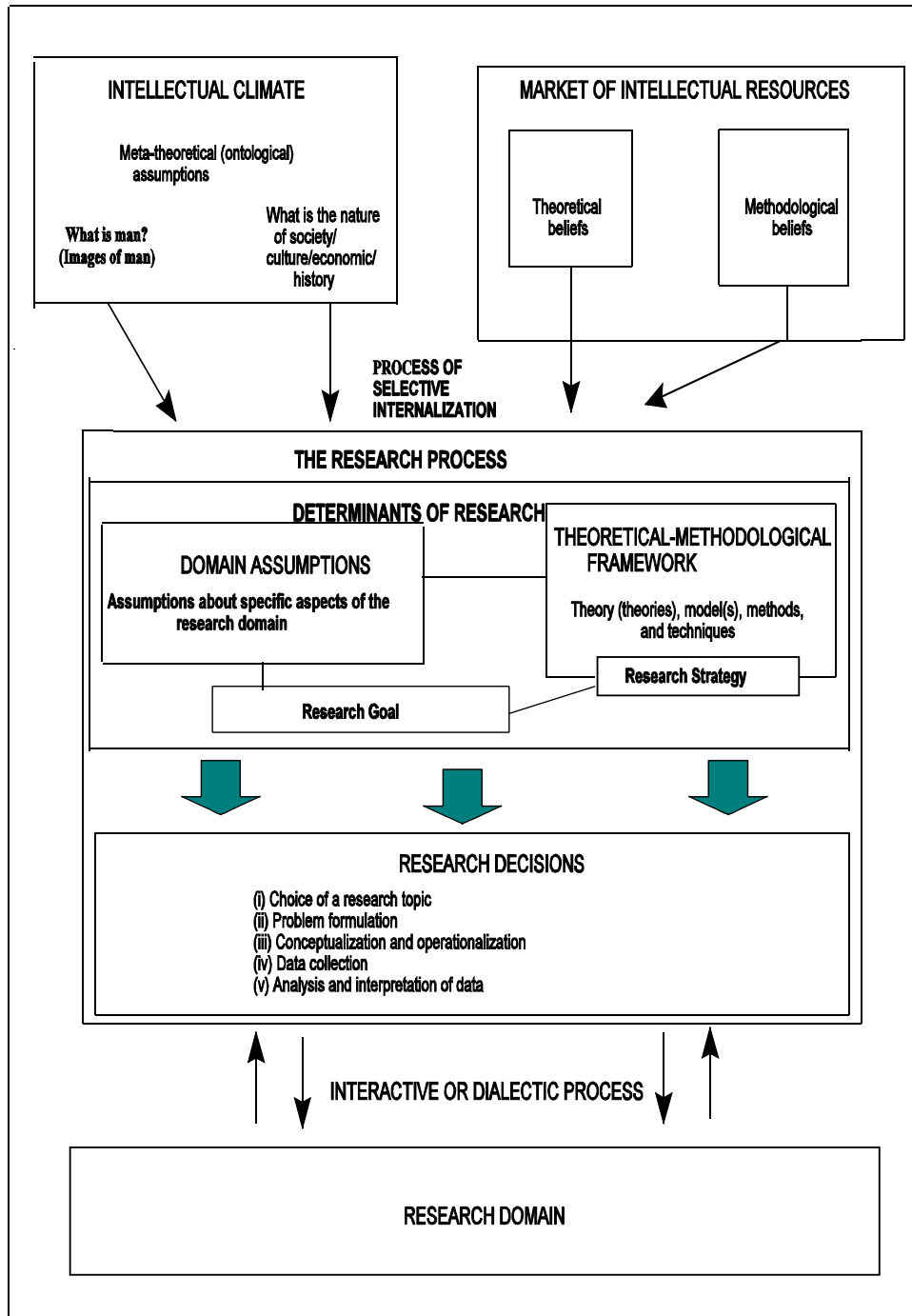


Figure 1.1: The social research process

(Source: Mouton & Marais, 1992)

research the paradigm perspective is discussed in terms of the intellectual climate, the market of intellectual resources ,theories, models and constructs.

1.6.1 Intellectual climate

Intellectual climate refers to the various non-epistemological value systems or convictions that are underlined in this research. These convictions, values and assumptions are not directly linked to the epistemological objectives of the research. The origins thereof, are of a philosophical nature and cannot be tested (Mouton & Marais, 1992, p. 21). For the purpose of this research, such assumptions with regard to relevant paradigms and the disciplinary context of the research, are presented in the following section.

In addition, intellectual climate refers to the various non-epistemic value systems/convictions that are underpinned in a discipline at any given time. It can be accepted that in humanities the convictions of man in general, as well as the specific discipline convictions, are included with regard to society, culture and history.

Mental health is the meta theoretical departure of this research. It is defined by the World Health Organisation as:

“ a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her community (WHO, 1999, p. 2).”

The focus of the research is on mental health. Health as a paradigm will be fragmented in terms of those aspects that are causal to individual psychological vigour on the one hand and burnout on the other hand. The discipline outlined to investigate mental health in this research is psychology which is presented with its relevant sub-disciplines as explained in the following sections.

- Psychology

According to Plug, Meyer, Louw and Gouws (1986, p. 294) psychology can be defined “as the science that is studying human behaviour with the emphasis on the human. Methods that are applied to study man, are experiments, measurement and observation.” The measurement of individual behaviour is relevant in this research. The research takes place within the broad field of psychology, because it deals with the human psychological functioning within its daily existence or being. More specifically, the research, is conducted from an Industrial and Organisational framework.

- Industrial and Organisational Psychology

Industrial and Organisational Psychology is an applied field of psychology. It is described by Muchinsky, Kriek and Schreuder (1998) as the field speciality concerned with behaviour in the workplace. Sub-disciplines in psychology are also demarcated in this field of research. Organisational Psychology refers in particular to people’s behaviour within organisations and how such behaviour affects performance within the organisational context (Muchinsky et al., 1998; Robbins, 2003). Out of a sub-disciplinary perspective, the research includes employee and organisational mental health as well as psychometrics.

- Employee and Organisational Wellness

Individual and Organisational mental health cannot be explained by a single definition due to the various scientific approaches that exist in this field of research (Bergh, 2003). Some focus on abnormal behaviour while others are trying to describe it in terms of normal behaviour. May, Koortzen, Barnard and Bergh (2004) propose a conceptual framework of Employee and Organisational Wellness as depicted in figure 1.2.

The framework proposes psychological health in terms of two extremes, namely adjustment and maladjustment. “Adjustment is the psychological process of adapting to,

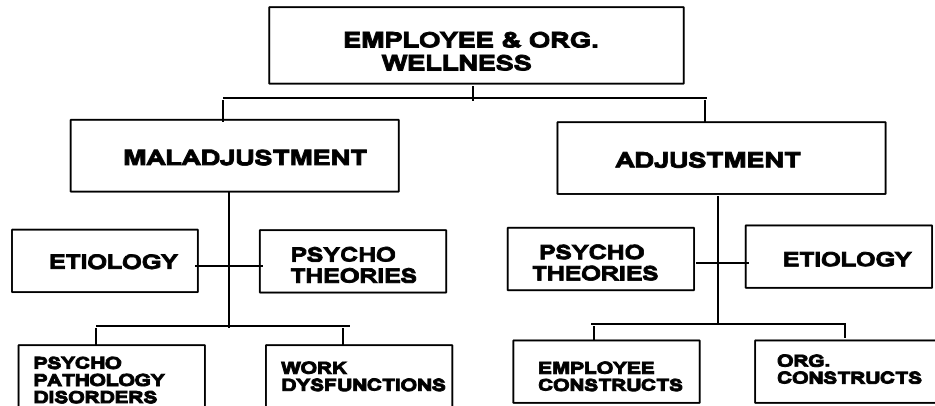


Figure 1.2: Employee and organisational wellness conceptual framework
 (Source: Adapted from May et al., 2004)

“coping with, and managing the problems, challenges, and demands of everyday life” (Halonen & Santrock, 1997, p. 6). Maladjustment on the other hand, refers to the psychopathology (abnormal behaviour) of work. It is best understood in terms of the dynamics between psychological or emotional disturbance, and work dysfunctions. The latter being an impairment or non-coping in work performance due to emotional factors in the individual, or the interaction between the person and the work environment (Lowman, 1993). Further, maladjustment constitutes “the inability to maintain effective relationships and meet the demands of life satisfactorily. It is a broad term for any emotional disturbance of a relatively minor nature” (Corsin, 2002).

For the purpose of this research, employee wellness is narrowed to the stress-coping outcomes explained by Shirom (2003a, 2003b) as vigour and burnout respectively. In order to determine the dynamic relationships between variables in the stress-coping process,

psychometric instruments are applied to measure individual experiences of such dynamic relationships in the work situation.

- Psychometrics

Psychometrics is a speciality in the field of Industrial and Organisational Psychology and plays an important role in this research when dealing with the empirical part. According to Plug et al. (1986) psychometrics can be described as the psychological assessment of people in the work situation. It can be considered as a sub-discipline within psychology and is focused on the development and application of mathematical and statistical procedures in psychology. The empirical investigation of this research depends mostly on psychological measurement and measurement theory in order to determine the relationship between variables.

1.6.2 Market of intellectual resources

The thematic focus of this research is on individual vigour and burnout. In section 1.2 it was explained that individual vigour and burnout are outcomes of the dynamic relationship between an individual and his or her and work environment. Therefore, this research can be viewed from a combination of perspectives. Firstly, subjects, objects and phenomena will be looked at out of an interactionist perspective (Nevid, Rathus & Greene, 2003). The interactionist perspective is the foundation of the Diathesis-Stress Model (D-SM). Diathesis means that the individual has a predisposition for a disease that may be genetic. Further, as applied in psychology, diathesis encompasses cognitive sets, chronic feelings of helplessness, past experiences, or overall psychological hardiness. The D-SM stress model gives rise to environmental or life events that disrupt homeostasis. Examples of abnormal behaviour that emanates from a disruption of homeostasis, are alcoholism and depression.

The interactionist perspective corresponds partially with components of the Moos (1994) model which forms the framework for this research. The latter will be discussed in sections

to come.

The second perspective that forms part of the market of intellectual resources, is the positive psychological perspective. Whereas the interactionist perspective concentrates on those aspects that are wrong with people, positive psychology tends to attend to aspects that are right with people. Positive psychology is an effort to work for a balanced view of an approach to human beings, to encourage psychologists to attempt to contribute to positive aspects of life, and not only on the negative aspects of life. One of positive psychology's aims is to move away from the DSM-IV (APA, 1994) classification of abnormal behaviour, and to produce strengths and virtues that are found in the happiest people. Positive psychology proposes positive subjective wellness, positive character as well as positive groups, communities and cultures (Myers, 2000; Peterson & Seligman, 1984; Seligman & Csikszentmihalyi, 2000; Snyder & Lopez, 2002).

The methodological justification of the research is derived from the philosophy of empirical science. The empirical investigation is conducted in terms of an overarching functional model (Morgan, 1980, p.608, p.619). This model postulates that:

- The human is functioning in a society which is characterised by order and regulation;
- The human is functioning as a system based on the observable truth;
- The human plays a role in society and behaviour must be judged in accordance with reality and tangible social relationships; and
- The human research results are always subject to objectivity and all research principles and techniques are dependent thereon.

During the generation of valuable research knowledge, the functional model is characterised by regulation and pragmatism in its basic orientation to the understanding of society. Its existence is founded in scientific, objective and uncontaminated inquiry, interpretation, and eventually, a true understanding of the human's social behaviour. Functionalism is one of the theoretical frameworks of empirical investigations in psychology.

It means that the researcher tries to understand and explain the observable functions of behaviour in terms of the empirical research. For example, anxiety may have a function in the sense that it prepares the individual for a fight or flight situation. Further, some individuals may survive the onslaught of environmental stressors as a result of applied coping strategies, while others may not (Morgan, 1980).

1.6.3 Theories and models

In order to resolve the critical issues mentioned in the problem statement, a model has to be chosen to form a theoretical framework of thoughts and conceptualisation for this research. Whereas the Mouton and Marais (1992) model provides a technical framework for the research process, Moos (1994) proposes a model that explains a reciprocal relationship between non-work factors in individual adaptation during the stress and coping process. However, in an earlier study (see Moos, 1986) he explained the same relationship in terms of factors relevant to work and individual adaptation. Although it is in both instances a general conceptual framework of the stress-coping process, its adaptability for this research is illustrated in the following events where it was adapted to either occupational or social settings.

Firstly, the Moos (1986) model proposes the stress-coping process out of an organisational climate perspective. The second adapted model (Moos, 2002) explains the stress-coping process out of a social climate perspective. Both frameworks depict contextual approaches explaining how a person copes with a particular type of stressful event (with either organisational climate or social climate as stressors), and is responsive to changes in coping efforts during such a stressful episode. These variants proposed by Moos (1986, 2002) are not suitable for this research purely because organisational or social climate is not a point of departure for this research. Climate is an artefact of social or work culture (Berry, 1998; Schneider, Bowen, Ehrhart & Holcombe, 2000).

Due to its flexibility toward a reciprocal relationship between variables as explained in

section 1.3, the Moos (1994) framework was selected for this research, because it was used under similar conditions with the workplace as the research domain and can also be extended to fit this research (see Thompson, Kirk-Kirkbrow & Brown, 2004; Terry, Tonge & Callan, 1995). It should be mentioned that the Moos (1994) framework was constituted by research done in various domains prior to the development of the said model (see Moos, 1976, 1986; Moos & Schaefer, 1987). It can be assumed that Moos proposes variants of the model to fit the various approaches stress-coping research can follow.

Research done by Moos (1994) and his colleagues (Holahan, Moos & Schaefer, 1996; Moos & Schaefer, 1987), proposed that the model creates a hypothesised framework of a dynamic relationship between environmental stressors, social resources, personality factors, acute life events, coping responses and well-being in the daily lives of individuals. It includes all these variables that are causal to either vigour or burnout as the outcome of the stress-coping process. The general postulate is that coping strategies, social support and personality are mediating factors in dynamic transactions between environmental stressors and personal factors (e.g. personality, gender and age). These dynamics are not explained in burnout models (Plana et al., 2003). The Moos (2002, 1994, 1986) model and its variants are the only frameworks that explain the dynamic interaction between the stress-coping variables in work and non-work settings, and consequently the outcome of such interactions.

Coping is regarded as a dynamic process that changes over time in response to changing demands and appraisals of the situation (Moos, 1994, 2002). Further, a subjacent assumption is that the human being contributes to the state of his or her psychological well-being depending on his or her dynamic interaction between the mentioned factors. According to Moos (1994), individual uniqueness plays a role in the way he or she copes or responds to stressful situations. In general, it was learned that coping styles that are active and problem focused, coincide with better physical and psychological well-being in relation to those styles that are problem avoidant (Holahan & Moos, 1990; Windle &

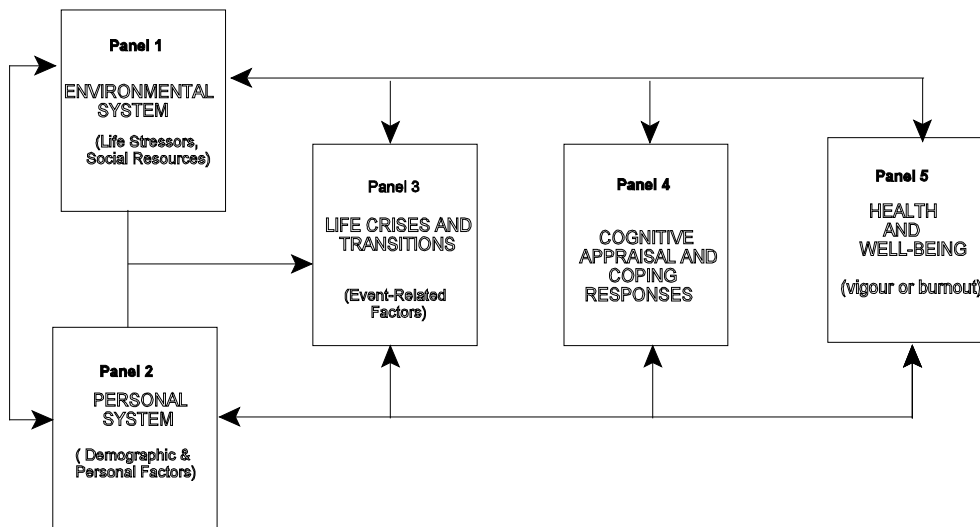


Figure 1.3: A general conceptual framework of the stress and coping process
(Source: Adapted from Moos, 1994)

Windle, 1996). The effectiveness of a particular coping style depends on various variables, like intensity and controllability of stressful events (Moos & Schaefer, 1993), personality factors (Moos 1994; Scheier, Weintraub & Carver, 1986), the availability of supportive resources (Holahan & Moos, 1990; Schafer, 1996), the phase of stressful events (Moos & Swindle, 1990), and cognitive appraisal (Lazarus & Folkman, 1984).

Figure 1.3 is a schematic representation of Moos's (1994) model and can be explained as follows: The environmental system (Panel 1) is composed of ongoing life stressors, like chronic physical illness, as well as social coping resources, such as support from family members. The personal system (Panel 2) includes an individual's socio-demographic

characteristics and personal coping resources, such as self-confidence. These relatively stable environmental and personal factors influence the life crises and transitions individuals face (Panel 3), which in fact reflect significant changes in life circumstances. In turn, these combined influences, shape health and well-being (Panel 5) both directly and indirectly through cognitive appraisal and coping responses (Panel 4). The framework emphasises the central mediating role of cognitive appraisal and coping responses in the stress process. The reciprocal interaction between every phase in the model is indicated by the arrows in the schematic representation. Moreover, the bi-directional paths in the framework indicate that reciprocal feedback can occur at each stage.

The Moos (1994) model creates an understanding of some of the relationships between variables, how to diagnose critical issues and to identify interventions for improvement. As mentioned in section 1.6.3, the model is not tailor-made for every situation, because Spielberger, Westberry and Greenfield (1995) as well as McCreary, Thompson and Sullivan (2004) are of the opinion that the nature of stress and the etiology of emergency work environments, like police work, differ from other occupations. Thus, in terms of the Moos (1994) model it is still unknown what the strength of the relationships between the variables may be. Further, the role of individual differences among police officers engaged in the coping process is also unknown. The role personality plays in the mediating process with regard to different samples is speculative and should be investigated. The above dynamic interaction between constructs such as stress, social resources, personality variables, coping strategies, coping, vigour and burnout are consequently under investigation in this research with the Moos (1994) model as a framework. These constructs are discussed in the next section.

1.6.4 Constructs and concepts

A construct is a concept that the researcher can define in conceptual terms but cannot be directly measured. Constructs are the basis for forming causal relationships as they are the “purest” possible representation of a concept (Hair, Black, Babin, Anderson & Tatham,

2005). A respondent cannot articulate a single response that will totally and perfectly provide a measure of a concept. Thus, when a researcher intends to measure a concept, for example a group of individual's attitude towards a new product, such a concept must be conceptualised as a construct that forms the basis for the said relationships between other constructs. Furthermore, indicators are necessary to operationalise a construct before it can be measured, and eventually the questions in a questionnaire represent the indicators of a particular construct (Hair et al., 2005). With the above in mind, this research will mainly refer to constructs in the purest conceptual terms.

The main constructs that have relevance to this research are discussed in chapters 2 and 3, followed by the operationalisation of each construct. This section however deals with an orientation toward these constructs that have significance to the empirical research in terms of the Moos (1994) framework.

- **Stress**

McCreary, Thompson and Sullivan (2004) describe stress as an individual's emotional response to daily hassles out of the work environment (chronic stressors) and negative life events (acute stressors). Stress in police environments is seen as different from other occupations. Stress in policing is also considered as relatively independent of general life stressors, but can have simultaneous consequences for the individual. Research with regard to police stress done by McCreary et al. (2004) also distinguish between police operational (e.g. interaction with public) and organisational (e.g. interaction with internal organisational activities such as co-workers) stress. This research focus on organisational stressors in this regard to avoid contamination with the burnout measure incorporated for data collection. As a construct, stress identifies with panel one in the Moos (1994) model.

- **Social support**

Zimet, Dahlem, Zimet and Farley (1988) define social support as the individual's perception

on how resources can act as a buffer between stressful life events and symptoms. Perceived social support includes family members, friends and significant other resources that improve the individual's self-esteem or psychological status. These entities create a positive perception of social support. Their classification of "significant other" refers also to positive work relationships, a strong immune system, or other personal relationships as potentially distinct sources of support (Canty-Mitchell & Zimet, 2000; Zimet et al., 1988).

Social

support plays a role in decision making during active coping responses, as well as emotional support which strengthen an individual's stress tolerance during the stress and coping process (Hobfoll, 2002). This research focuses on the possible mediating role of social support in the stress and coping process in an interactional context. Therefore, like stress, social support identifies with panel one in the Moos (1994) model.

- **Personality**

The Five Factor Model of personality has recently been regarded as the most comprehensive taxonomy of personality (Costa & McCrae, 2000; Goldberg, 1993). Costa and McCrae, (2000) as well as Goldberg (1993) adopted the definition of personality as originally set by Tubes and Christal (1961) (and later Norman, 1963, p. 574). By personality these authors mean " a system defined by personality traits and dynamic processes by which they affect the individual's psychological functioning." According to the five-factor model of Costa and McCrae (1992), including Goldberg's (1993) abbreviated Five Factor Structure, most traits can be understood as aspects of five broad trait dimensions. These authors agree on the structure of personality although they use different terminology to describe the same dimensions of the Five Factor Structures. Goldberg's (1993) dimensions are: Introversion versus Extraversion (I-E), Antagonism versus Agreeableness (A-A), Lack of direction versus Conscientiousness (D-C), Emotional stability versus Neuroticism (E-N), and Closedness versus Openness to new experience (C-E). According to Larsen and Buss (2005) high scores on dimensions of Extraversion, Conscientiousness, and Openness are relative predictors of a police personality in stress handling, while high scores on

Neuroticism predict pathological consequences for relevant respondents (Larsen & Buss, 2005). Like social resources, this research is interested in the possible mediating role of personality during the stress and coping process. Personality identifies with panel 2 in the Moos (1994) model.

- **Coping**

When it comes to the definition of coping, Carver (1997a) sees coping as a process and utilises the stress definition of Lazarus (1966), as well as Lazarus and Folkman (1984). Coping is viewed as “a stabilizing factor that may help individuals deal with, and adjust during stressful periods” (Lazarus & Folkman, 1984). In the transactional theory suggested by Lazarus and Folkman (1984), stress consists of three processes. Primary appraisal is the process of perceiving a threat to oneself. Secondary appraisal is the process of bringing to mind a potential response to oneself. Coping is the process of executing that response by applying certain strategies (See also Carver, Scheier & Weintraub, 1989; Latack & Havlovic, 1992). Coping is a central construct in the literature review and is explicated and empirically investigated as a mediating effect between stress and the latter’s outcomes, namely vigour and burnout (Semmer, 2003; Shirom, 2003a, 2003b) . Coping identifies with panel four in the Moos (1994) model.

- **Vigour**

Vigour represents a positive affective response to one’s ongoing interactions with significant elements in one’s job and work environment that comprises the interconnected feelings of physical strength, emotional energy, and cognitive liveliness (Shirom, 2003a). This view of vigour is derived from Hobfoll’s (1989) Conservation of Resources Theory. Further, vigour refers to a high level of energy, motivation to invest effort at work, and resilience, that is withstanding difficulties and persisting despite obstacles. Further, vigour is obliquely related to burnout (Shirom, 2003a, 2003b). Vigour as a construct is included in this research as a positive affective state in order to explicate such a state as a positive

outcome in challenging situations. Empirical investigations in this research determine whether a proportion of the respondents are living a challenging, vigorous and proactive life. Vigour identifies with panel five in the Moos (1994) model.

- **Burnout**

Burnout on the other hand is viewed as an affective reaction to ongoing stress whose core content is the gradual depletion over time of an individuals' intrinsic energetic resources, including the expression of emotional exhaustion, physical fatigue and cognitive weariness (Shirom, 1989). Burnout, as described by Shirom (1989, 2003b) is an affective state that exist when individuals experience a cycle of resource losses over a period of time at work. Like vigour, Shirom's (2003b) burnout theory is also based on Hobfoll's (1989) conservation of resources, which postulates that stress does not occur as a single event, but rather represents an unfolding process and resources are needed to prevent exhaustion. Whereas vigour represents a positive affective state among police officers, burnout is identified with human un-being as a negative affective state. Burnout as a construct is included in this research to determine its relationship with organisational stressors and the police work environment. Burnout identifies with panel five in the Moos (1994) model.

- **Employees**

In this research the term employees refer to those adults that are employed as functional members of the organisation, and in this case the South African Police service.

1.7 GENERAL HYPOTHESIS

With reference to the model chosen for this research, the following general hypotheses can be formulated:

- The relationship between perceived stressors in the environmental system and the

outcomes of the coping process (vigour and burnout) is reciprocally moderated by an individual's personal system (personality and individual differences), chosen coping strategies, and perceived social support.

1.8 RESEARCH DESIGN

In the following sections, the research design is discussed with specific reference to the type, the sample, the measuring instruments, validity, reliability and ethical aspects.

1.8.1 Research type

A literature review is conducted before the empirical objectives can be achieved. Primary literature sources will form the theoretical basis for the research. Where primary data are not available, secondary information is consulted.

The empirical research is of a quantitative nature. A cross-sectional survey design is used to achieve the empirical objectives. The survey technique of data collection is applied to gather information from the target population by means of questionnaires (Shaughnessy & Zechmeister, 1997).

Although data are collected in group format, the individual is the unit of analysis (Mouton & Marais, 1992). The individual's experiences with regard to the interaction between individual differences and environmental factors, as well as the moderating affects of social support, are surveyed in the empirical research.

1.8.2 Validity and reliability of the research

With regard to a research design, Mouton and Marais (1992, p. 34) emphasise the importance of validity and reliability of research projects. On the one hand validity refers to the specific purpose of literature or measuring instruments applied. On the other hand,

reliability refers to the consistency of the data cited or the consistency of the results generated by the measuring instruments. Valid and reliable literature describing the dynamics of individual vigour and burnout, stress, stressors, coping, and coping strategies are included in the research. The same counts for the measuring instruments used in the empirical research. Validity and reliability of the literature research is improved by:

- Choosing models that support the literature review;
- Giving conceptual descriptions of constructs that are relevant to the research;
- Consulting literature that is of recent and accredited nature;
- Collecting literature through a standardised and systematic procedure; and
- A verbatim cross-checking of literature findings with experts in the particular research field.

Validity and reliability in terms of the empirical research is improved by:

- Applying measuring instruments that were used for similar purposes and which predict high levels of internal, external and face value, as well as consistency;
- Valid and reliable interpretations of statistical analysis supported by statistical experts and standardised techniques; and
- Obtaining data from a representative sample with a magnitude that support statistical and practical significance.

Another objective is to generate accurate findings of the specific phenomena by limiting methodological flaws (internal validity). If this can be achieved, the data are reliable in the generalisation of other police populations in other environments and times (external validity) (Kerlinger & Lee, 2000).

1.8.3 Participants

The South African Police Service is the target organisation. In order to avoid duplication,

sampling requirements are discussed in section 4.3 (chapter 4). The characteristics (biographical profile) of the sample are discussed in section 5.2 (chapter 5).

In order to make assumptions about the sample, reliable and valid instruments should be applied for that purpose. Relevant instruments are discussed in the following section. In order to meet the requirements of model testing, the sample size is determined on a minimum of 500 respondents (MacCallum, Browne & Sugawara, 1996).

1.8.4 Measuring instruments

Constructs identified in section 1.6.4 are measured through valid instruments. This section gives a brief description of the measuring instruments that are utilised in the empirical research. The scope and validity of the instruments are discussed in chapter four.

1.8.4.1 Measuring instruments for stress resources (stressors)

- Organisational Police Stress Questionnaire (OPSQ) (McCearly et al., 2004)

In order to measure stressors as a phenomenon in the daily lives of serving police officers, the OPSQ was chosen to explore the manifestation of stress in this context. The instrument measures the contextual stressors that cause a threat to the well-being of police officers. In order to prevent contamination with the burnout measure used in this research, items do not overlap between these measures (McCreary & Thompson, 2006).

1.8.4.2 Measuring instrument for social support

- To determine the mediating role of social support during the coping process, the Multidimensional Scale of Perceived Social Support (MSPSS) suggested by Zimet et al. (1988) was selected to measure this construct as a coping resource.

1.8.4.3 Measuring instrument for personality

- Goldberg's (1992) Five Factor Inventory

The above instrument was chosen to measure the Five Factor structure of personality to prevent a too long research protocol (see Carver, 1997a; Goldberg, 1992). The Five Factor model is the most utilised structure to measure personality (Pervin, Cervone & John, 2005).

1.8.4.4 Measuring instrument for coping strategies

- Brief COPE Inventory (Carver, 1997a).

The Brief COPE Inventory is used to measure individuals' coping strategies. The instrument distinguishes among a variety of 14 strategies through which an individual usually engages during the coping process. These strategies are fully discussed in chapters 2 and 5.

1.8.4.5 Measuring instruments for vigour

- Shirom-Melamed Vigor Measure (SMVM) (Shirom, 2003a).

The SMVM measures vigour as a positive affective response to one's ongoing interactions with significant elements in one's job and work environment that comprises the interconnected feelings of physical strength, emotional energy, and cognitive liveliness (Shirom, 2003a).

1.8.4.6 Measuring instruments for burnout

- Shirom-Melamed Burnout Measure (SMBM) (Shirom, 2003b)

The SMBM measures the opposite of vigour in terms of physical fatigue, emotional exhaustion and cognitive weariness as a negative effect due to ongoing stress (Shirom, 2003b).

1.8.4.7 Measuring instrument for demographics

A biographical questionnaire has been selected to stratify the employees in terms of gender, age, ethnical groups, rank and tenure as described in section 1.6.4. This enables the researcher to do predictions and recommendations for the future. According to Ryff and Heidrich (1997) demographic variables are playing an important role in the prediction of individuals' psychological well-being.

1.8.5 Data collection

Data are collected from police officers who are gathered at an official training center for in-service training. Data collection takes place under classroom conditions. The researcher acts as psychometrist and the purpose of the research is explained to respondents. Procedures how to complete the questionnaires are also explained. Questionnaires are handed out and collected immediately after completion. No time limit was set, but respondents were expected not to be occupied by the questionnaires for a longer period than 20 minutes.

1.8.6 Data analysis

A statistical analysis is conducted with the aid of the SPSS (1998) programme. Descriptive statistics (means, standard deviations, minimum and maximum) are computed to explore and describe the data.

Cronbach alpha coefficients and inter- item correlations are used to determine the internal consistency, homogeneity and unidimensionality of the measuring instruments (Clark &

Watson, 1995). Coefficient alpha contains important information regarding the proportion of variance of items of a scale in terms of the total variance explained by that particular scale. According to Clark and Watson (1995), the mean inter-item correlation (which is a straightforward measure of internal consistency) provides useful information in conjunction with the alpha coefficient of a scale (which is an indication of homogeneity of a scale), but as such cannot ensure unidimensionality of a scale.

In terms of statistical significance, it was decided to set the value at a 95% confidence interval level ($p \leq 0.05$). Effect sizes (Hair et al., 2005) are used to decide on the practical significance of the findings. A cut-off point of 0.35 (a moderate effect) was set for the practical significance of correlation coefficients (Cohen, 1977).

Initially, a principal component extraction is done on the constructs that form part the measurement model to estimate the number of factors, the presence of outliers and factorability of the correlation matrices. The eigenvalues and scree plots are studied to determine the number of factors (Hair et al., 2005).

Structural equation modeling (SEM) methods are used to construct a structural model of the stress and coping process in terms of the Moos (1994) hypothesised theoretical framework. SEM is a statistical method that takes a confirmatory (i.e., hypothesis-testing) approach to the analysis of structural theory bearing on some phenomenon (Byrne, 2001).

Hypothesised relationships in the theoretically based model are empirically tested for goodness-of-fit with the sample data. The PROC CALIS computer programme of SAS Institute (2006) was employed to estimate parameters, and to determine a global fit between the hypothesised theoretical model of Moos (1994) and the empirical data. The Goodness-of-fit (GFI) indicates the relative amount of variance and co-variance in the sample predicted by estimates of the population. Its value usually varies between 0 and 1 with values higher than 0.90 indicating good model fit with the data.

The Normed Fit Index (NFI) is applied to measure global model fit, giving an indication of the extent to which the hypothesised model compares with the most restricted model where relationships between variables are zero, in other words a perfectly independent model. This index also varies between 0 and 1 and tends to overestimate fit in smaller samples. The Comparative Fit Index (CFI) also compares the hypothesised and independent models, but takes sample size into account. The Non-Normed Fit Index (Bentler & Bonnet, 1980) (also called Tucker-Lewis Index [TLI]) is a relative measure of co-variation explained by the hypothesised model which has been specifically designed for the assessment of factor models (Tucker & Lewis, 1973). Its value varies between 0 and 1. Critical values for good model fit are recommended for NFI, CFI and NNFI to be acceptable above the 0.90 level (Bentler, 1992), although recently Hu and Bentler (1998) recommended a cut-off value of 0.95.

In order to address the problems associated with sample size, the Root Mean Square Error of Approximation (RMSEA), as well as a confidence interval of 90% are used. RMSEA provides an indication of an overall amount of error in the hypothesised model-data fit, relative to the number of estimated parameters (complexity) in the model. The recommended acceptable levels of RMSEA should be between 0.05 and 0.08 (Hair et al., 2005).

1.8.7 Ethical responsibility in the research

To ensure that this research is being conducted within an ethical framework, the following ethical issues will also be born in mind:

- Literature consulted is fully acknowledged and referenced;
- Literature citings take place without creating an opportunity for plagiarism;
- That the sample will not be drawn without the organisation or individuals' informed consent;
- Research participants are informed about their rights and the uses to which the

assessment information is recorded and published. They are also being informed that they may obtain feedback on their individual results without harming the interest or confidential relationships of others;

- Respondents and the organisation's images or interests are dealt with courteously, respectfully, and in an impartial manner;
- Confidentiality is maintained to the extent that is appropriate for fair assessment practices; and
- Respondents as well as the organisation are informed that a final report will be made available for perusal.

1.9 RESEARCH METHOD

The research consists of two phases. Phase 1 is the literature review and conceptualisation of constructs prior to the empirical research. Phase 2 is the operationalisation of the empirical research and also contains the conclusions, recommendations and the shortcomings of the research. These phases are divided into different steps. The phases and steps are described in the following sections.

1.9.1 Phase 1: Literature review

The relevant steps of the literature review are listed below.

Step 1: To conceptualise the dynamics of individual vigour and burnout with reference to stressors and coping processes.

In this phase stress and coping as a process is discussed. The mediating role of personal factors and social resources are included in this phase.

Step 2: To conceptualise the dynamics of the stress and coping process with special reference to vigour and burnout;

In this step, well-being is narrowed to vigour and burnout as outcomes of the stress and coping process.

1.9.2 Phase 2: Empirical investigation

The empirical investigation is the second phase of the research project. The various steps are outlined in the following paragraphs.

Step 1: Population and participants.

The South African Police Service has been selected as a target organisation. A convenience sample is drawn with all gender and racial groups represented in such a sample.

Step 2: The composition of the test battery.

In this phase the measuring instruments for the empirical investigation are composed. Tests that measure the dependent variable (individual and organisational vigour and burnout), the independent variable (stress and coping strategies) as well as moderator variables (personality and social resources) are selected for this purpose.

Step 3: Data collection.

Data are collected at two training centres in terms of a cross-sectional survey. Questionnaires will be handed out to individuals in a bound format. Individuals are encouraged to include a broad spectrum of the employees in terms of the target organisation's diverse profile.

Step 4: Data processing.

The SPSS (1998) statistical programme is selected to do the data processing. Techniques such as principal factor analysis and Structural Equation Modelling (SEM) are selected to determine the dynamic interaction between environmental and personal factors, as well as the mediating affects of coping.

Step 5: Reporting and interpretation of results.

The results are reported in terms of tables and diagrams. Further, the results are interpreted by comparing them with the hypothesised Moos (1994) model. Data are used to propose a new model.

Step 6: Conclusions, recommendations and limitations.

This phase of the research includes a conclusion section, derived from a comparison of the literature review and the empirical results. Recommendations are made to contribute to the theory under investigation. Limitations of the research are followed by a conclusive perspective of the research.

1.10 CHAPTER OUTLINE

The chapters in this research will be presented as follows:

- Chapter 2: Dynamics of the stress and coping process;
- Chapter 3: Stress and coping outcomes: vigour and burnout;
- Chapter 4: Research methodology;
- Chapter 5: Results; and
- Chapter 6: Conclusions, recommendations and limitations.

CHAPTER 2

DYNAMICS OF STRESS AND COPING

2.1 INTRODUCTION

The previous chapter gives an outline of the research process. This chapter deals with the first literature objective in this research. A specific objective of this research is to conceptualise and integrate the dynamics of individual vigour and burnout with special reference to stressors and coping processes. The dynamics as illustrated by the Moos (1994) model are explicated in this chapter. Although the said model forms the framework of this study, an initial discussion of other relevant theories and models with regard to stress and coping is unavoidable, and consequently included as an introductory section before the Moos (1994) model receives full attention.

Discussions of the Moos (1994) model commence with environmental factors, followed by the mediating role of social support and personal factors in a reciprocal process. The coping strategies individuals follow, as well as the outcome of the stress and coping process is also discussed in this chapter. The chapter is concluded with a chapter summary.

The next section explicates a paradigmatic departure of the stress and coping process, followed by relevant stress and coping theories and models.

2.2 PARADIGMATIC DEPARTURE

Until recently a negative bias of psychology was illustrated by the fact that the amount of publications on negative affective states outnumbered the amount of publications on positive states (Myers, 2000). Therefore, Occupational Health Psychology is predominantly concerned with ill-health and unwell-being (Bergh, 2003; Coetzee & Cilliers, 2001). In the

same vein Strümpfer (1995, 2003) adds that, when dealing with health or disease as a psychological and physiological phenomenon, researchers tend to investigate it either out of a salutogenic point of departure or out of a pathogenic angle. When choosing one of these paradigms, either one sketches a dichotomous picture. In other words, stress and its consequences can be seen on either side of a continuum. Both the salutogenesis and pathogenesis views are incorporated in this research.

The pathogenic approach is interested in the origins of people's disease while salutogenesis is interested in the origins of health (Coetzee & Viviers, 2007). Strümpfer (1995, 2003) explains the pathogenic orientation as an attempt to discover the reason why people become sick and why they develop certain diseases. The pathogenic approach stems from a medical model, because the traditional way of thinking is focussed on abnormal psychological phenomena. Homeostasis is a fundamental element of the pathogenic paradigm. The latter postulates that the human organism functions in a relative constant condition which is regulated by various complex regulating mechanisms. Homeostasis can be disturbed by stressors. Stressors can therefore be considered as risk factors (Strümpfer, 1995, 2003).

In turn, the salutogenic orientation sees stressors as a possibility of positive health outcomes. Out of this orientation the human is seen as an organism that can convert stressors to the good for human life. Antonovsky (1987) distinguishes between strain (a salutogenic approach) and stress (a pathogenic approach). Strain is seen as positive if a stressor is converted in a positive way to deal with it, while stress is regarded as negative for human functioning if it is experienced as a threat. As mentioned above, until recently the pathogenic paradigm was followed and literature reports on the latter overwhelmed the salutogenic paradigm. However, researchers realised that, in order to solve health problems, the positive side of health or well-being should also be considered in order to solve problems in society. The intention of this research is thus to investigate psychological health and disease from a multi-dimensional perspective through which a salutogenic as well as a pathogenic view is reflected (Antonovsky, 1987; Coetzee & Cilliers, 2001;

Strümpfer, 1995, 2003).

When considering the Moos (1994) model as a framework for this research it is noticed that the theme of the model relates to stress and coping as a process. Although various stress and coping models have been proposed, only those that constitute the Moos (1994) model are considered in this research. Therefore the next section deals with stress as a phenomenon in people's working life, commencing with stress theories and models.

2.3 STRESS THEORIES AND MODELS

It seems that researchers have different approaches and views of stress as a phenomenon. Relevant to the empirical study, a definition of stress was given by McCreary et al. (2004) in chapter 1. However, several other authors also attempted to describe this phenomenon (Berry, 1998; Lazarus & Folkman, 1984). In general, the word stress is used to describe any physical or psychological response with regard to a demand on the human body, whether it is an environmental condition in order to survive (negatively experienced), or a demand that makes one accomplish a personal goal (positive experience). A stressor is therefore an occurrence that causes a response. The stressor can be pleasant or unpleasant (Davis, Eshelman & McKay, 1995).

Emotions tend to accompany stress and people often use their emotional states to evaluate stress (Sarafino, 2002). People under stress display negative emotions such as anger, anxiety, fear and sadness (Halonen & Santrock, 1997; Sarafino, 2002). Indeed, emotions can also be seen in a positive light. Positive feedback during performance appraisal may give rise to positive emotions (Berry, 1998).

The latest trend is that researchers increasingly believe that the key to positive emotions are the goals people have, and their personalities (Diener, 2000; Seligman, 2003). Stress research also confirms that personality is a strong and consistent predictor of well-being (Diener et al., 1999; Maslach, 1982). Further, it was found that people who are happy in

one area of their lives (such as at work) tend to be happy in other areas as well. Thus, the above mentioned researchers believe that stable personality factors predispose people to feel happy or unhappy in a wide range of situations. Further, current life events may significantly influence happiness at any given moment. Happy people and those reporting more positive than negative emotions tend to be enthusiastic, accommodating, understanding, flexible, gregarious, energetic, confident, optimistic, and affectionate (De Neve & Cooper, 1998). To explore the nature of stress, the following sections investigate the various stress theories that support the Moos (1994) model, followed by the various stress models that overlap with the Moos (1994) conceptual framework.

2.3.1 Stress theories

Researchers differ with regard to the nature of stress. Some see it as a trigger for other responses, for example the coping process. Others see stress as a transactional process between components such as stressors, personal factors, coping strategies and the outcome of a stressful event. To explore the various approaches of stress definitions, the term stress initially will be discussed in terms of external occurrences (stimulus theories), secondly as an internal condition (response theories) and thirdly in terms of the interaction between the individual and the environment (interactional/cognitive theories) (Lazarus & Folkman, 1984).

2.3.1.1 Stimulus theory of stress

The stimulus theory relates to the first component of the Moos (1994) model. The first mentioned actually refers to environmental factors that affect individuals as explained by the model in chapter 1. Earlier researchers such as Caplan (1964), Elliot and Eisdorfer (1982), as well as Lindemann (1944) focussed on stressors (those things that cause stress). According to these authors, stress is a consequence of the confrontation with stressful events. If a stimulus leads to an internal response such as psychological distress or physiological problems, then the stimulus is a stressor. Stress as a stimulus identifies

aspects of the environment that might have a pleasant or unpleasant effect on individuals in the workplace. For the purpose of this study it can be understood that a policeman who is confronted with a stressful situation may engage into an emotional response, psychological distress or physiological problems when experiencing an uncomfortable or threatening situation. Police officers, for example, may be engaged in an exciting vehicle chase that is experienced as stressful, but the increased flow of adrenalin may be opposite to boring routine stops and talking to people. Under adverse circumstances they may respond to serious and fatal accidents, witness injury and damage resulting from violence. The pioneers of the stimulus theory (Caplan, 1964; Elliot & Eisdorfer, 1982; Lindemann, 1944) describe the following four types of stressors in a social context:

- Acute stressors (short duration), for example, a visit to a dentist or rushing through heavy traffic to an emergency scene; or
- Stressor sequences, for example, going through a divorce or bereavement due to the death of a colleague (Spielberger, Westberry & Greenfield, 1995);
- Chronic, periodic (intermittent) stressors such as examinations for students, unpleasant job meetings or painful medical treatment; and
- Chronic stressors, like sickness, marriage problems or exposure to dangerous work environments (Hobfoll, 1989; McCreary et al., 2004).

The above types of stressors reflect in most instances a pathogenic view of stress, while events such as preparing for a promotional examination and being promoted, or making arrangements for a marriage may create positive feelings about stress out of a salutogenic perspective. In case of the latter, Morris and Maisto (2005) are convinced that happy occasions indeed may be stressors, because they require change or adaptation to meet individual needs. Arrangements before a wedding can be stressful but exiting. Or, being promoted is gratifying, but it demands that one relate to new people in new ways, learn new

skills, and perhaps dress differently, travel more, or work longer hours. Indeed, police officers are equal members of society and are also affected by the above events (Haarr & Morash, 2005).

2.3.1.2 Response theory of stress

Most probably, Cannon (1939) was the first researcher who referred to stress as a response. Cannon was mainly concerned about the influence of cold, a lack of oxygen and other environmental stressors on organisms. He came to the conclusion that, although some levels of stress can be tolerated, serious stressors over a long-term period can be harmful to biological systems (Cannon, 1939; Hobfoll, 1989). Cannon's (1939) emphasis on stress as a response has been continued by Selye (1974) who sees stress as an orchestrated defence by the biological system to protect the body against environmental demands.

As far as police officers are concerned, stress as a response describes the responses that occur in the officer's body or the mind when he or she is confronted with what he or she thinks are stressful. Stress can impact on mental and physical health, and on other conditions producing depression and anxiety which can ultimately affect the quality of work effort (Stevens, 2005).

The response theory corresponds with the last part (Panel V) of the Moos (1994) model in the sense that stressors predict certain outcomes or consequences. A salutogenic approach suggests that stressors may have a positive outcome, for example self-complacency experienced by a police officer who arrested a criminal after a long search. The pathogenic view predicts negative outcomes due to experiencing stressors such as anger or the sustainment of an injury during a manhunt.

The significance of the response theory is that if the organism responds positively, for example looking forward to some or other good prospect, it can be seen as a vigorous

process. If the response results in depletion of energy, burnout can be a preliminary phase before the organism collapses (Selye, 1974; Shirom, 2003a, 2003b).

2.3.1.3 Person-Environment Fit Theory (P-E Fit Theory)

The way a police officer interacts with his or her work environment may also be explained by the Person-Environment Fit Theory (Barrick & Mount, 1991; Frone, 2002; Larsen & Buss, 2005). The P-E Fit Theory has several similarities with the Moos (1994) model as well as the Diathesis Stress Model as explained in chapter 1. It proposes that an individual is in continuous interaction with his or her work environment. The latter thesis is congruent with the Moos (1994) model. Further, certain dispositions make an individual vulnerable to stressors in the work environment. The latter argument constitutes the Diathesis Stress Model (Morris & Maisto, 2005).

Theories of stress have decades ago recognised the importance of both the person and environment in explaining the nature and consequences of stress. Person constructs relevant to stress research include Type-A behaviour (Friedman & Rosenman, 1959, cited in Edwards, Caplan & Harrison, 1998), locus of control (Rotter, 1966), hardiness (Kobasa, 1979) and coping styles (Menaghan, 1983). The environment has been construed as stressful life events (Rabkin & Struening, 1976), daily hassles (DeLongis, Coyne & Dakof, 1982; Folkman & Lazarus, 1982) and chronic stressors such as role conflict and ambiguity (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964), role overload and underload (French & Caplan, 1972), and job demands and decision latitude (Karasek & Theorell, 1990).

The dualistic emphasis on the individual and environment in stress research is a characteristic of the interactive approach in psychology which indicates that behaviour, attitudes and well-being are determined jointly by the person and the environment (Edwards et al., 1998). The core premiss of the P-E Fit Theory is that stress arises not from the person or environment separately, but rather by their fit or congruence with one another. This notion is reflected in numerous theories of stress and well-being, and is mainly

responsible for the widespread impact of the P-E Fit Theory in stress research (Edwards et al., 1998).

The P-E Fit Theory underlines three basic distinctions (Edwards et al., 1998). The first is the basic distinction between the person and the environment which has a reciprocal causal relationship. This reciprocal causal relationship corresponds with the Moos (1994) model. The second distinction is between objective and subjective representations of the person and the environment. The objective person refers to attributes of the person as they actually exist, whereas the subjective person signifies the person's perceptions of his or her own attributes (i.e. the person's self-identity or self-concept). Analogously, the objective environment includes physical and social situations and events as they exist independent of the person's perceptions, whereas the subjective environment refers to situations and events as encountered and perceived by the person. The objective person and environment are causally related to their subjective counterparts. These relationships may become imperfect due to perceptual distortions (e.g. repression, denial), cognitive construction processes, limited human information, processing capacities and organisational structures that limit access to objective information (Edwards et al., 1998). Initial presentations of the P-E Fit Theory have indicated that good mental health is signified by minimal discrepancies on objective P-E Fit, subjective fit, contact with reality, and accuracy of self assessment (French, Caplan & Van Harrison, 1982).

The third distinction differentiates between two types of P-E fit. The one involves the fit between the demands (e.g. quantitative or qualitative job demands) of the environment, role expectations, and group and organisational norms, whereas abilities include the aptitudes, skills, training, time, and energy the person may apply to meet the demands (Schaufeli & Bakker, 2004). A second type of P-E Fit entails the match between the needs of the person and the supplies in the environment that are derived from the person's needs. Needs include biological and psychological requirements, values acquired through learning and socialization and motives to achieve desired ends (French et al., 1982). Supplies include eccentric and intrinsic resources and rewards that may meet the person's needs,

such as food, shelter, money, social involvement and the opportunity to achieve. In terms of this theory, stress arises when the environment does not provide adequate supplies to meet the person's needs, or the abilities of the person fall short of demands that are prerequisite to receiving supplies (Edwards et al., 1998). Whereas the P-E fit theory incorporates individual needs as congruent with a person-environment fit, the Moos (1994) framework places more emphasis on the dynamic relationship among interacting variables in the stress and coping process.

Seeing that the P-E Fit Theory implies a fit between an individual's personality factors and his other environment, Stevens (2005) suggests that only individuals with a suitable predisposition should be employed as patrol officers. An individual with a predisposition that makes him or her vulnerable for disturbing crime scenes or situations should therefore not be employed as patrol officers, detectives or in police operational services. However, more research is still needed to determine a fit between individuals and the police work environment. The P-E Fit Theory has additional meaning in that recruitment and selection programmes should consider those dispositions that fit into the multiple compositions of police work environments (Larsen & Buss, 2005).

2.3.1.4 Interactional stress theory

The interactional stress theory is analogous with the Moos (1994) stress and coping postulate. The said theory has its roots in the stress theory of Lazarus and Folkman (1984) which makes a significant contribution in this regard. Stress and coping are conceptualised as a transactional process. The individual and the environment are seen as being in a dynamic, reciprocal and bi-directional interaction with mutual influences. The outcome of the process can either be positive or negative for the individual. Stevens (2005) is of the opinion that the perception a police officer has with regard to his working environment may have a negative influence on the way the police officer interacts within such an environment. When the individual perceives him or her environment as dangerous and not having support from other or senior police officers, it can be stressful. If he or she has

social support it may be less stressful.

In addition, it can be assumed that a police officer utilises his or her experience, knowledge of crime scenes or hardiness personality to increase his or her invulnerability towards stressful or challenging situations. He or she perhaps may encourage his/her colleagues in group context to reflect a positive outlook towards the somewhat taxing work situation. Further, a police officer with a hardiness personality most probably will exert control over his or her work environment and attempt to learn and grow in order to overcome the threatening effects of the work situation (Stevens, 2005). With stress theories in mind, it should be appropriate to similarly look at appropriate stress models in this next section.

2.3.2 Stress models

The development of the above stress theories, several models followed to explain stress as phenomenon. As mentioned in chapter 1, some regard stress as a process while others not (Hobfoll, 1998; Lazarus & Folkman, 1984; Moos, 1994, 2002). To avoid repetition, this section rather refer to these models briefly before coping as a process is dealt with. Due to its significance in this research, the Lazarus and Folkman (1984) model which is a precursor of the Moos (1994) model will be discussed in the next section.

2.3.2.1 An interactional model of stress (Lazarus & Folkman, 1984)

Stress is conceptualised in the above model in terms of its interaction with the individual and his or her environment. Further, the model proposes coping as an integral part of the interaction between psychological, environmental and biological factors that influence health and well-being. Stress is experienced when the demand of the stressor exceeds the individual's availability of personal resources. An individual appraises a stressor as negative or positive, and depending on his or her individual factors, applies a particular strategy to deal with it. Furthermore, the way one appraises a challenge or a stressor involve either positive or negative emotional responses (Lazarus & Folkman, 1984).

Appraising something as threatening gives rise to feelings of anger, fear, or disapproval, while an appraisal of something as challenging pave the way for feelings of psychological excitement, hope or eagerness.

2.3.2.2 Alternative stress models

As mentioned in chapter 1, several organisational stress models have been developed by researchers, for example, the P-E fit model (Edwards et al., 1998), the Cybernetic model (Cummings & Cooper, 1998), the JD-R and the COBE (Bakker et al., 2004). As further mentioned some of them are static and do not acknowledge a dynamic relationship between variables, while those who do acknowledge such interaction, do not acknowledge the social boundaries between work and families or friends that may induce or mediate challenging or stressful situations. Furthermore, individual difference as a mediating factor is limited to optimism as an individual orientation (see Barkhuizen & Rothmann, 2006). The nature of appraisals and coping strategies are discussed in the section 2.8.3 that covers coping and coping strategies, and will therefore not be discussed further in this section.

2.4 COPING THEORIES AND MODELS

This section deals with coping theories and models as reflected in various literature reports. A straightforward definition of “coping” is hardly to be found in literature reviews relevant to this construct. Authors do not have consensus, because it can be explained out of different perspectives (Parker & Endler, 1996). Therefore, the following theories and models may explain coping more comprehensively as a phenomenon.

2.4.1 Coping theories

Coping as a construct is not a recent invention (Davison, Nearle & Kring, 2003). Lazarus (1966) was most probably the first to refer to this construct in terms of the stress-coping response. He argues that stress consists of three processes. Primary appraisal is the

process of perceiving a threat to oneself. Secondary appraisal is the process of bringing to mind a potential response to the threat. Coping is the process of executing that response. The Moos (1994) model which forms the framework of this research refers to all these aspects in terms of panels/components as discussed in chapter 1. The said model acknowledges the dynamic interaction among variables.

Originally, coping was defined by Lazarus and Launier (1978, p.311) as:

“efforts, both action-orientated and intra psychic, to manage (i.e. to master, tolerate, reduce and minimise) environmental and internal demands and conflicts among them which tax or exceed a person’s resources.”

On the other hand McGrath (1970) sees coping as an array of covert and overt behaviour patterns by which the organism can actively prevent, alleviate or respond to stress-inducing circumstances.

Early coping theorists attempted to explain coping either in terms of a structure or behaviour. Pearlin and Schooler (1978) for example, state that coping refers to behaviour that protects people from being psychologically harmed by problematic social experiences. Coping protects an organism by eliminating or modifying stressors, perceptually controlling the meaning of stress experience and thus neutralizing its problematic character, or keeping emotional consequences within manageable boundaries. Therefore, coping as a term could be used to refer to either strategies or results (Fleishman, 1984). As a strategy, coping refers to the different methods that a person may apply to manage his or her circumstances. As a result, coping refers to the eventual outcomes of this individual strategy. With regard to non-coping results, Carver, Scheier and Weintraub (1989) mention that it results in high levels of anxiety and depression. The latter are two symptoms of maladjustment.

More specifically relevant to the work situation, Violanti (1987, 2005) regards coping as

attempts to adjust to job demands. He specifically refers to two coping responses such as cynicism (mocking disbelief) and use of alcohol as a response to job stress. This explanation also includes police coping behaviour. Callan (1993) defines coping in terms of an outcome. He refers to a form of non-coping and sees it as failed efforts to cope. Further, it is accompanied by various physical and psycho-social disturbances, which result in higher stress levels. Non-copers experience that things do not make sense and they lose perspective on issues. Non-coping behaviour is reflected in maladjusted behaviour, for example, depression, anxiety or withdrawal.

Recent theorists suggest that coping refers to perceptual, cognitive or behavioural responses that are used to manage, avoid or control situations that could be regarded as difficult (Moos, 1994; Zeidner & Endler, 1996). Stevens (2005) for example, is of the opinion that burnout in a police context is a tendency to cope with stress by a form of distancing that is described as physical or psychological avoidance. For the purpose of this research a working definition for coping is derived from Carver's (1997a) model of behavioural self-regulation. It means that coping will be understood as a psychological process through which an individual applies either problem-focussed or dysfunctional strategies in the appraisal of threatening situations. An instrument to operationalise coping, the Brief COPE Inventory is fully discussed in chapter 4. What should be born in mind, is that the Brief COPE Inventory (Carver, 1997a) partly consists of elements of the Lazarus and Folkman (1984) model, as discussed in paragraph 2.3.2.1 as well as the following section.

2.4.2 Coping models

The following paragraphs evaluate the Lazarus and Folkman (1984) and Hobfoll's (1989) models due to overlap with the Moos (1994) framework of stress and coping. Lazarus and Folkman's (1989) model is first to be discussed.

2.4.2.1 Lazarus and Folkman's (1984) model

Due to the transactional nature of the Lazarus and Folkman (1984) model, it is difficult to classify it exclusively as a stress model or a coping model. The said model can simultaneously be regarded as a framework that conceptualises stress and coping as an interactional process as explained in section 2.3. From the latter section and this section, it can be deduced that stress and coping entail a dualistic process. The individual and the environment are regarded as being in a dynamic, reciprocal interaction through which both are mutually influenced.

Lazarus and Folkman (1984) identified two processes in their stress and coping model. They refer to cognitive appraisal and coping, that act as mediators between the stressful human-environment-interactions and long term outcomes. Cognitive appraisal is a process through which an individual analyses a specific interaction with the environment and its relevance to his or her well-being, as well as the nature of such relevance. Events can be appraised as stressful when they are considered as harmful or threatening. Harm refers to injuries, damages already experienced such as amputation of limbs, loss of friendships or loss of self-regard. Threat refers to potential damage or loss.

Situations can also be regarded as challenging. Challenges refer to opportunities for growth, mastering or profit shares. According to Lazarus and Folkman (1984), emotional responses emanate from appraisal in any situation. Something that is appraised as harmful or threatening gives rise to feelings of anger, fear or condemnation, while challenging situations stimulate feelings of psychological arousal, hope and eagerness. While the Lazarus and Folkman's (model) is an interactional model, Hobfoll's (1989) model places emphasis on the conservation of resources, and is therefore evaluated in the following discussion.

2.4.2.2 Hobfoll's (1989, 1998) model of conservation of resources (COR)

The above model supports this research project in two aspects. The one is that it correlates with the Moos (1994) model in the sense that the individual utilises his or her personal resources in order to cope with environmental constraints and acute life stressors. COR also relates to the outcomes of the stress and coping process (vigour and burnout) as proposed by Shirom (2003a, 2003b) in chapter 3.

Hobfoll (1989, 2002) attempts to narrow the gap between environment and cognitive approaches by developing the conservation of resources model. The model proposes that humans usually manage stress by minimizing loss and maximizing gain of resources. Hobfoll (1989, 2002) conceptualises resources as those objects, personal attributes, conditions or forces that are highly valued by the individual. Resources have instrumental as well as symbolic value to the individual and any threat to these resources causes stress or a challenge.

Hobfoll (1989, 1998) describes stress as a response to threat of loss, an actual loss or inability to gain or regain resources. When threatened by stressors, people manage stress by minimizing loss and maximizing gain of resources. Hobfoll (1989, 1998) identified four types of sources that can be resistance resources against stressors, namely:

- Objects (for example, housing and transport);
- Conditions (for example, a happy marriage, property ownership and seniority);
- Personal attributes (for example certain personality traits and skills/abilities); and
- Energies (for example, time, money, knowledge/information).

Hobfoll (1989, 1998) excluded social relationships from the above resources. He sees

social relationships only as a resource as far as such a resource can assist the individual to obtain or to preserve the said resources. Later contributions to coping as a field of study distinguishes between different levels of resources, namely community resources (like clinics), social resources (e.g. friends, neighbours) and individual resources (e.g. emotional stability, ability and ego strength) (Hobfoll et al., 1996).

Hobfoll's (1989, 1998) theory may be of great significance to this research as far as the loss or preservation of resources is concerned. The theory is of importance when one tries to understand loss or preservation (conservation) in the work context. Researchers like Scott and Jaffe (2003) as well as Kreitner and Kinicki (1998) explain how individuals experience emotional distress during job loss or during drastic organisational changes, as well as with dysfunctional organisational systems. Coping resources can be of most importance during these difficult times.

When considering Hobfoll's (1989, 1998) model, it can be assumed that police officers also utilise resources in order to cope with threatening or challenging situations. An officer may use his or her training background or previous experience as a resource. His or her family can be of support (a resource) when a loss of a colleague is experienced. When preparing for promotional examinations, his family or friends may be supportive (a resource) when challenged by a similar situation.

2.4.2.3 Stress and coping in terms of the Moos (1994) model

The dynamics between the panels proposed by Moos (1994) is defined in chapter 1. However, because the Moos (1994) model serves as a framework of this research, the panels (components) are explained in detail in this section. Relevant stress and coping aspects in police context are also drawn in support of the Moos (1994) model.

Although the Moos (1994) model is a social psychological framework of the stress-coping process, his arguments in this regard were used in work context as well (Thompson et al.,

2004; Terry, Tonge & Callan, 1995). Other work related research was also published by Moos (1976, 1986, 1987) himself.

The Moos (1994) model forms part of debates with regard to stress responses experienced out of social/family and work life. The effectiveness of a particular coping style depends on a number of variables, like intensity and controllability of stressful events (Moos & Schaefer, 1993), personality factors (Moos 1994, 2002; Scheier, Weintraub & Carver, 1986), the availability of supportive resources (Holahan & Moos, 1990; Schafer, 1996), the phase of stressful events (Moos & Swindle, 1990) and cognitive appraisal (Lazarus & Folkman, 1984).

With relevance to their research in stress and coping, Moos (1994) and his colleagues (Holahan et al., 1996) explain possible relationships between the dynamics of environmental stressors, social resources, personality factors, acute life events, coping responses and psychological well-being. The general postulate is that stress affects individual well-being. Coping is the process that mediates between psychological well-being as an outcome of the dynamic transactions between environmental stressors and resources on the one hand, and personality factors as well as coping strategies on the other hand. Coping as a mediating process is comprehensively discussed in this chapter.

Figure 1.3 in chapter 1 is an adapted schematic representation of Moos's (1994) model and a detailed discussion follows in the next component of this chapter. The discussion commences with the first panel in the model in order to address stressors and coping within police work environments.

SUMMARY

Since the introduction of this chapter the various approaches in stress and coping literature is explicated out of a salutogenic and pathogenic departure. Stress and coping literature was applied and interpreted in terms of the police work context. The reviews of stress and

coping literature revealed that stress and coping refers to different phases of a process that are welded together to explain the individual's psychological and physiological experiences in the work or social environments.

It is difficult to distinguish between facets of the stress and coping process, because it is a process. However, what was learned from the afore-mentioned discussions is that the individual consciously becomes aware of stressors in the work environment. The individual appraises it as threatening or challenging, and according to these judgements, applies cognitive strategies in order to adapt to the threatening or challenging stressor, or event in his or her field of experiences. It seems further that enduring stressors or events may engage the individual in adjusted (if positively experienced) or maladjusted (if negatively experienced) behaviour, or psychological responses. Acute stressors or events seem to be less constraining.

When considering the stress-coping theory and models such as those of Lazarus and Folkman (1984), as well as Hobfoll (1989, 1998), one comes to the conclusion that an individual deals with stressors in a dynamic way. The police officer becomes aware of a stressor and appraises it as challenging or threatening by utilizing his or her personal factors (knowledge, previous experiences, age or gender, and personality constitution) to decide upon a strategy in order to deal with the stressor or situation. This utilization of a strategy to overcome the demand of the stressor or challenge actually refers to the coping process. If the coping process is not driven constructively, the outcome thereof is that negative psychological consequences may emerge out of this situation (Shirom, 2003b). In terms of stress and coping theories, the Moos (1994) model almost perfectly modifies the reciprocal relationships between environmental factors, personal factors, the utilization of strategies and the eventual outcome of this dynamic process. While the latter model creates a framework for conceptualisation and the empirical research, it is comprehensively explicated in the next part of the chapter in terms of police work environments.

2.5 ENVIRONMENTAL SYSTEM (PANEL 1)

Panel 1 (see figure 1.3 in chapter 1) explains the environmental system consisting of continuous life stressors and social resources. According to Moos (1994) life stressors can emanate from work or out of ordinary social settings. This panel also includes social resources like finances, home, community, as well as relationships with colleagues, friends or family members that can be a burden to a policeman's health (Kerley, 2005). Moos (1986, 1994, 1995) suggests that environmental factors together with social resources, may be a stressor to the individual. Instead of support, aspects like finances, a spouse or partner, a sick or ill-disciplined child, a demanding extended family, or an unsupportive friend can be stressful to the individual worker (Moos, 1995).

The above postulate with regard to social resources is a pathogenic one. However, social resources in terms of informal social support, like family or group cohesion can be an asset in dealing with life problems. The latter is a salutogenic approach of the role social resources play in the stress-coping process (Moos & Schaefer, 1993; Strümpfer, 2003). The same can be expected of social networks. Sufficient personal resources (like experience or knowledge) can help the individual to define a stressor as less threatening. Further, a supportive family climate or a happy marriage can be a supportive source during stress situations (Haarr & Morash, 2005; Schaefer & Moos, 1992). Whereas Moos (1994, 1995) measures environmental factors and social resources as inducing factors and as a pathogenic phenomenon, in contrast, this research investigates social resources as a supportive phenomenon. The environmental system includes the areas in which the individual is functioning on a day-to-day basis. In the case of this research, it can be a policeman's workplace on a macro or micro level (Moos, 1976; Stevens, 2005). In order to follow the framework of the Moos (1994) model, life stressors (in this case conceptualised in terms of the police work environment) as well as social resources are discussed in the next sections.

2.5.1 Life stressors (in police context)

Stressors refer to housing, work, money matters, physical well-being, interpersonal relationships within or between working groups, physical and architectural features, organisational structure and policies, organisation hierarchy, non-cooperative group members or noises (Moos, 1986, 2002).

Two decades of research in the police stress literature has produced little information about the extent to which police work environments are stressful (Storm & Rothmann, 2003a). In some research, police work has been identified as an exceptionally stressful occupation (Anshel, 2000; Arrigo & Shipley, 2005). However, an earlier study revealed that police work is not more stressful than other professions, and in particular less than, for example, the teaching profession (Hart, Wearing & Heady, 1995; McCreary et al., 2004).

Some researchers categorise stressors in the police environments in terms of organisational stressors and operational stressors (Arrigo & Shipley, 2005; Hart et al., 1995; McCreary et al., 2004). Examples of operational stressors are, physical threat, violence, exposure to danger, facing the unknown, arresting a violent person, appearing in court. Organisational stressors are more prevalent and manifested by staff shortages, inadequate resources, time pressure, lack of communication and work overload (Arrigo & Shipley, 2005; Hart et al., 1995; Kop et al., 1999). The afore-mentioned stressors are expressed in terms of negative life experiences. However, according to Hart et al. (1995) police officers may also have positive experiences which are reflected in increased well-being, positive affect and morale. Stress outcomes may also be manifested in terms of burnout or engagement (Kop et al., 1999; Storm & Rothmann, 2003a; Wiese et al., 2003).

The next part of the chapter attempts to operationalise environmental factors in terms of the Moos (1994) model congruent with the Organisational Police Stress Questionnaire (OPSQ) (McCreary et al., 2004).

2.5.1.1 Dealing with co-workers

While working among other employees, individuals may be threatened or challenged by the behaviour of other individuals either in group context, or not (Hayes, 2002). However, in most instances employees are expected to work in groups or teams which may be a source of arousal. The interaction between individuals within a group or team, or between groups or teams within organisations may unveil the most dynamic processes within organisations. Teams and groups interact with each other consciously and unconsciously that may be the consequence of functional or dysfunctional behaviour experienced by individuals. Dysfunctional teams or groups have negative consequences for the individual employee (Cilliers & Koortzen, 2002). Positive conflict can yield achievement of individual goals within the organisation. Negative conflict can be the source of affected individual emotions. Relationships between police officials may be impaired. Individuals become detached from the organisation and develop a low self-esteem and in some instances, a sense of hopelessness (Loo, 2005). In adverse situations, individuals may develop self-worth which contributes to group cohesion. People who belong to highly cohesive groups are highly motivated and productive. Individuals working in groups with high cohesion levels often resist when expected to leave such groups (Berry, 1998; Hayes, 2002). The above scenario may also be applicable to police environments. Police officers working under similar situations may present solidarity among themselves as a result of group cohesion, even under difficult circumstances (Lord, 2005).

While dealing with co-workers, conflict may be another source of stress (McCreary & Thompson, 2006). Although positive conflict can be an asset to an organisation's creativity and success, many research publications have also described the negative aspects of conflict in work environments (Kahn & Quinn, 1984; Luthans, 2001; Robbins, 2003). Further, working relations among organisational members assume a certain degree of conflict, given the complexity of role and task demands, and some conflict is necessary and useful. For example, in the formation of a work group or team, various stages can be observed, namely forming, storming, norming, and performing. The last stage, performing,

indicates the group is moving to a point of full productivity and collaboration without need for struggles and adaptation (Freedman & Leonard, 2002; Handy, 1999; Kakabadse et al., 1995). Team conflict can also be a source of strain (Hayes, 2002). According to Robbins and Finley (1995) approximately 60 percent of the length of any team project, from start to finish, is taken up with the forming and storming group stages. In the storming stage, conflict among team members is a "necessary" period of stressful negotiation of the terms under which the team will work together. Due to the autocratic nature of police work environments, uncertainty who the leader should be within the forming stage can be a source of conflict. Further, if roles within the teams are not clearly stipulated role conflict, role ambiguity, and job future ambiguity may be a stress factor to the individual police officer.

History reveals that police environments were strongly controlled by male officers and the entrance of female officers created both positive and negative conflict (Van Wyk, 2005). Negative conflict may emerge in the norming and storming phase of group formation. However, in the performing stage police officers realise the importance of group or interpersonal support that contributes to positive, healthy competition between males and females, as well as among various culture groups.

In other instances, team conflict may arise from inadequate or inconsistent leadership misalignment of team goals and objectives with corporate goals and objectives, or scapegoating, stereotyping, or other communication problems. Inadequate resources or skill deficit among one or more team members can be another stressful factor (Freedman & Leonard, 2002; Robbins & Finley, 1995).

Interpersonal conflict can result between two co-workers or a worker and superior (Luthans, 2001). This conflict can arise from differences of opinion, style, values, or mannerisms. It can also arise because of role conflict, role ambiguity, or role overload. Verbal, physical, or sexual harassment can be a factor, and sometimes personality factors are involved. Ordinarily, personality factors are considered secondary to role factors, when analysing

conflict in an organisational setting (Luthans, 2001; Robbins, 2003). In American police environments, racism is the cause of most of the interpersonal conflicts. Shooting incidents took place between white and black police officers from different police units. Further, police officers working under superiors from the opposite gender or race were detected as a source of conflict among police officers in the American police environments (Dantzker, 2005). The same can also be expected in the South African Police Service with its diverse racial composition.

Intergroup conflict refers to conflict between two or more work teams, or corporate units/divisions (Freedman & Leonard, 2002; Luthans, 2001; Robbins, 2001). It can be constructive, such as in the healthy competition to meet production quotas, or unhealthy when one group sabotages the efforts of another. As mentioned by Van Wyk (2005) as well as Haarr and Morash (2005), working groups in police context represented by the majority of a particular ethnic group may be in conflict with minorities represented by an opposite ethnic group. Therefore, it should be expected that a multi-cultural composition of work groups in the S.A. Police Service should suppress domination of the one group over another.

2.5.1.2 Different rules apply to different people

Inconsistent interaction between management and subordinates can be a source of stress (Hayes, 2002). Van Wyk (2005) points out that in many instances not all police officers are treated equally by their superiors. This may be instigated by racism or favouritism. Further, some supervisors and subordinates may be corrupt. Those who are not in corruptive activities are not equally treated by their superiors. In addition, Grote (1996) is of the opinion that performance appraisal interviews may also be a source of inconsistency. One individual may be reprimanded for bad performance, while another is overlooked. In all these instances, the individual may feel that different rules apply to different people. A last example is when one police officer commits a minor disciplinary offence and is eventually severely dealt with, while another gets away with a verbal warning. In a South African

sample drawn by De Beer and Korf (2004), 36% of the police respondents indicated that favouritism plays a role in police stress events due the fact that the perception exists that different rules apply to different people.

2.5.1.3 Feeling you have to prove yourself to the organisation

It may be a challenge to prove one's abilities to the organisation. However, according to McCreary et al. (2004) an individual may experience stress when he or she continuously must prove him or herself to the organisation in which he or she is working. Stress emerges if the individual's needs and goals are in mismatch with those of the organisation (Lowman, 1993; Newell, 2002). These experiences of strain emerge out of the responsibilities an individual has towards his or her organisation. Such responsibilities can be seen as a duty, a burden or an obligation. The organisation expects the individual to be successful in the execution of his or her duty, burden or obligation (Salaman, 2000).

Martins (2000) is of the opinion that these expectations reside in the trust relationship between an individual and his or her management. He is of the opinion that the trust gap usually widens in changing organisations due to a lack of communication between manager and subordinates. On a psychological level, it can be assumed that the individual may experience more and more strain as a result of the widening gap. Further, as the gap widens, the individual may feel that he or she is expected to do more in order to establish a trust relationship between the organisation, its management and him or herself. Grote (1996) supports Salaman (2000) in the sense that the individual may feel that his or her contribution to an organisation is worthless if no agreement exists between the supervisor and the subordinate with regard to his or her occupational goals and the expected achievement of such goals.

Lord (2005) confirms that police officers in the United States of America in many instances feel that they cannot do enough to prove their value to their respective police organisations, especially when the supervisor and the patrol officer are of different ethnic origins. Further,

these gaps between the management of the police agency may widen when public charges of misconduct are laid against individuals, regardless whether they are guilty or innocent.

Since 1994, South African organisations including the South African Police Service are going through dramatic changes (Louw, 2001; Martins, 2000). Some individual police officers in South Africa may feel that their contributions to the organisation are worthless due to the fact that his or her supervisor is of an opposite race or gender, and that the country's history is held against him or her. Therefore, many police officers in the current police environment may share such an opinion unless the trust gap between the management and subordinates is narrowed. It seems that much work is to be done to integrate everyone in a multi-cultural work environment.

2.5.1.4 Excessive administrative duties

Sometimes organisational change brings other work responsibilities over and above those that a police officer must adhere to on a day-to-day basis, especially during the "unfreezing" phase of the change process. During the latter it is expected to forward extraordinary feedback reports to management. Further, job design and redesign problems may emerge from change initiatives which enforce more correspondence between ground level and management (Lord, 2005).

Excessive administration duties can lead to role overload. Role overload refers to excessive expectations and demands associated with an individual's job (Edwards et al., 1998). As organisations have downsized, more workers are not only expected to increase their job productivity, but also to assume additional role functions and tasks that were previously part of other job descriptions. For example, many managers and other professionals now have the added responsibility of doing filing and word processing previously done by clerical staff (Edwards et al., 1998). According to Schaufeli and Buunk (2003), role overload, lack of control and a lack of expressing one's potential correlates positively with high levels of burnout.

All the above elements can be present during change in police environments (Lord, 2005). Due to changes, police officers are sometimes shifted from one responsibility to another, or some officers may resign without replacement, therefore such vacancies usually leave some responsibilities for those who stay behind. Consequently, one group or group of individuals may be burdened with additional or excessive administrative duties. Some individuals who like administrative duties may see it as a challenge, but others may experience it as an infringement on their desire to do real police work. Some may prefer to do either ordinary patrols or physical investigation duties. It should be mentioned that police officers do not have secretaries and when a shift is completed, the officers must return to office to complete excessive administrative duties which cannot be postponed to the next day. If a balance cannot be created during the redesign process, such excessive duties may cause unnecessary strain in a police officer's life.

2.5.1.5 Constant changes in policy/legislation

In many instances change can make the work environment easier or challenging, for example by implementing non-discriminative policy or legislation. However, such changes may be a stressor in the lives of police officers (Lord, 2005). In South Africa the majority of organisations, especially state departments, are touched by changes in legislation and policy that flows out of the constitutional changes since 1994 (Tinarelli, 2000). Change can take place in many forms (Hammer, 1997; Robbins, 2003). As organisations attempt to become more strategically focussed and globally competitive, they tend to engage in restructuring activities. For a decade planned change efforts such as "re-engineering", "downsizing", "mergers", and "organisational transformation" have been popular (Hammer, 1997; Meyer & Botha, 2000). The stressful consequences of these planned change efforts are comprehensive, pervasive and can significantly affect the health and well-being of workers involved (Sperry, 1995).

In South Africa the various police agencies of the former homelands were expected to merge with the former South African Police Force to become the South African Police

Service (Mufamadi, 1994). Healthy expectations may emanate from a merger, for example sharing of resources. In contrast, the "merger syndrome" may be the result of either a merger or acquisition that was inadequately planned or enforced on employees without proper information sessions or consultations. As reported in literature reviews, the symptoms experienced by a majority of workers involve anxiety, dysphoria, insomnia, and various somatic concerns (Marks & Mirvis, 1986). Because they have not adequately been psychologically prepared, workers experience fear of the unknown, grief at the anticipated change, and loss of psychological contract with their employer (Mirvis, 1991; Robbins, 2003; Sperry, 1995).

Downsizing syndrome involves similar symptoms plus guilt feelings, specifically the guilt associated with being a survivor. It has also been called "layoff survivor sickness" (Noer, 1993). When an organisation downsizes, certain workers are laid off, usually permanently, while other workers retain their jobs, at least for a while. Those that are laid off or fired experience the consequence of the job loss syndrome (Noer, 1993; Warr, 1992, 1999). Those that survive the layoff can experience downsizing survivor syndrome (Sperry, 1995). Although the South African Police Service was not downsized, the merger suggested by Mufamadi (1994) resulted in the dissolution of various police investigation or response units which may have had the same psychological consequences as a downsized organisation. Police officers became uncertain about their structural support as well as their occupational domains that produced a lot of strain. Simultaneously others may have experienced it as a gain, especially those in the former homelands who thereafter were exposed to more funds and resources.

2.5.1.6 Staff shortages

The work environment may be a challenge in terms of a learning curve if one is exposed to many activities as possible (Lord, 2005). However, research done in South Africa in terms of the Job Demands-Resources model (JD-R) (Bakker, Demerouti & Schaufeli, 2003), predicts that stress associated with a lack of resources is relatively more severe

than other stressors in the S. A. Police Service. In this regard staff shortages and other officers not doing their job, caused stress. Stressful job demands include such as dealing with crisis situations, excessive paperwork, having to perform tasks not in the job description, and having to do someone else's work. The mentioned research revealed a strong relationship between staff shortages and job demands. By not having resources (e.g. staff) it is most probably more difficult to deal with crisis situations, paperwork and performing tasks not in the job description (Wiese et al., 2003). Staff shortages may have pathogenic consequences instead of a salutogenic solution to the problem.

2.5.1.7 Bureaucratic red tape

According to Robbins (2003) a bureaucracy has strength, but its weaknesses may overwhelm this strength. The primary strength lies in its ability to perform standardised activities in a highly efficient manner. Therefore, bureaucracies can easily get on with less talented subordinates as well as middle- and lower level managers. The pervasiveness of rules and regulations substitutes for managerial discretion. Thus, those police officers who fit in this scenario will enjoy the flow of activities in a bureaucracy (Lord, 2005).

The weakness of a bureaucracy is the obsessive concern for following the rules. According to Ingraham, Thompson and Sanders (1997) state departments are extremely guilty of this obsessiveness. In practice it means that a police officer on patrol, or a detective, is expected to keep comprehensive records of everything done in more than one source, for example, keeping records in a case docket, a pocket book as well as an occurrence book simultaneously, instead of one comprehensive record followed by brief cross-references. Further, red tape may follow in the form of incident reports when a vehicle or other official equipment is damaged during a car chase or shooting incident. The fact that an officer in most instances must report to a commander at the radio control centre as well as his or her own unit commander may cause unnecessary frustration among officials who already experience a work overload (Haarr & Morash, 2005).

2.5.1.8 Too much computer work

According to Robbins (2003) computer-aided systems are increasing in organisations. Electronic mail for instance has dramatically reduced the number of memos, letters and phone calls. Further, intranets are also becoming the preferred means for employees within organisations to communicate with each other.

In 2.5.1.3 the issue of excessive administrative duties was discussed. An increase of computer work may require more time limits and add to the quantity of workload (Lord, 2005). Functional police officers, who are expected to operate in the streets or community, may be chained more and more to their offices than to the areas where they belong. Despite comprehensive manual records that are required, management may require more data transfers to computers for management purposes. In many instances it results in duplication of work. Thus, whereas computer-aided systems may be an asset to management information systems and their managers, the opposite is true for police officers at grassroots level. A gain for the one is a burden and strain for the other. Further, it can be expected that older police officers who are not familiar with computer data processing, as well as colleagues who did not study typing as a subject at school or otherwise, may be more frustrated in this regard than their female counterparts.

2.5.1.9 Lack of training on new equipment

The introduction of technology may improve many employees' worklife, provided that they are sufficiently trained. According to Robbins (2003) technical training is directed at upgrading and improving an employee's skills. Technical training has become increasingly important recently for two reasons. The one is as a result of the introduction of new technology and the second is structural designs. Jobs change as a result of new technologies and improved methods. For example, computer-controlled equipment has required employees to learn a whole new set of skills. If individuals are not properly trained they may however become frustrated (Lord, 2005).

In the police work scenario the above can be expected (Lord, 2005; McCreary & Thompson, 2006). An officer who is issued with a new fire-arm may be scared to use it if the officer is not trained how to use it. Such an individual may develop anxiety. Another example is the switch from manually operated camera equipment for scene investigations to digital ones. Mistakes by police officers on scenes may become public in newspapers or in court which may have a serious impact on an individual's self-esteem. Those who are trained may act with confidence and in many instances may enjoy working with new technology.

In the same vein, similar stressors are reported by Lord (2005) with regard to community orientated problem solving where police officers' duties are switched from traditional policing to community-focussed policing. Stressors are transferred from civilians in public to police officers. Those who are not retrained to adapt to community orientated policing experience more stress than those who are retrained.

2.5.1.10 Perceived pressure to volunteer free time

In general, people who suffer from workaholism (addiction to work) may enjoy to be at work as much as they can, but others may also enjoy free time that emanate from flexi work schedules (Schabracq, Winnubst & Cooper, 1998). It is, however, confirmed by research that a lack of free time may have health consequences for individuals, for example in police environments (Kerley, 2005; Morris & Maisto, 2005). Work schedules can impact on job productivity, commitment, and job satisfaction as well as worker health (Muchinsky, 1993). For some workers, flexible work hours offer an alternative to the traditional fixed working schedule and provide workers some choice in arrival and departure times (Berry, 1998). For other workers, work schedules include a second shift, night shift, or rotating shift work. Research indicates that many shift workers experience problems with health and social adjustment. Because of an interruption in circadian rhythm, shift workers often complain of lack of sleep, fatigue, appetite loss, and constipation (Warr, 1999). They also experience family and marital difficulties. Schedule or shift problems affect worker productivity, health,

and interpersonal relationships (Muchinsky, 1993).

According to Salaman (2000) every organisation in any country has negotiated arrangements on the number of working hours per week as well as working days per week. However, Lord (2005) mentioned that police work consists of ordinary day working schedules as well as shift work. Further, police officers like detectives must also do standby duties for a period of time in which they are expected to be available for emergency duties during any time of the day or night. Although police officers are given time off, they are sometimes expected to sacrifice those off duty periods to attend court proceedings, meetings during free time as well as to volunteer on weekends or other free time to do additional duties at, for example, sports events (Lord, 2005).

According to Morris and Maisto (2005) an individual's circadian rhythm becomes disturbed if he or she works night shifts. Sufficient time must be given to those individuals who came from night shifts. If not, several symptomatology may develop. Therefore, it can be expected that a police officer may become burned-out if not sufficient time is given for recovery. In addition, a police officer may develop stress or anxiety if they are expected to work during free times when they are supposed to give attention to family or individual matters and consequently deprived from doing so.

2.5.1.11 Dealing with supervisors

McCreary et al. (2004) is of the opinion that approachable supervisors usually create a less stressful work environment while the opposite is also possible. In contrast, ineffectual or troublesome supervisors who either may be unqualified for their position or have received improper/inadequate training is another source of police stress (Kets de Vries & Miller, 1987; Sperry, 1996; Steinmetz, 1969). Therefore, it seems that affirmative action and inappropriate supervisor personalities can play a role in the individual police officer's experience of stress (Van Wyk, 2005). One can imagine what frustration a police officer may experience if his or her supervisor is not efficiently trained, while the former depends on guidance from the latter during uncertain or difficult times. In the same vein it can be

mentioned that police officers in South Africa experience the effect of affirmative action through which both trained and experienced, as well as untrained and inexperienced supervisors are appointed above those who are labelled as "previously advantaged" (Hermann, 2000; Muller & Roodt, 1998). Some police officers may develop a negative attitude towards the police agency if they perceive affirmative action as unfair and discriminative.

In addition to the above, the individual police officer may also experience the supervisor's personality as having either a negative or positive influence on the organisation and its employees. It means that the same way as an executive/supervisor can have a negative or positive influence on the organisation's culture, so his or her psychological condition can have a negative or positive effect on employee supervision (Kets de Vries & Miller, 1987; Steinmetz, 1969). Personality clashes in supervision cause uncertainty and a lack of personal control amongst individuals (Sperry, 1996).

Some authors have written about work personalities of supervisors/executives and their influence on the organisation as well as individual employees (Kets de Vries, 1999; Kets de Vries & Miller, 1987). Dollard and Winefield (1995) as well as Davidson (1989) are convinced that positive interactions between executives and individuals result in individual happiness and trust. Disturbed relationships caused by individual differences create anxiety, hostility and uncertainty amongst individuals. Prolonged exposure to these stressful conditions cause burnout (Bakker & Schaufeli, 2000).

While characterisations of executive personality styles, as described by Kets de Vries (1998) are immensely valuable, they have a negative effect on the individual employee in terms of his or her fit in the organisation. In terms of the Person-Organisation Fit theory, the individual enters the organisation with skills, knowledge, personality, expectations, values and attitudes to match those of the organisation (Aamodt, 2004). However, the executive who is in control of the work environment, may cause a misfit due to his or her personality incongruence. The misfit between the individual and his or her work environment will then unnecessarily be blamed instead of the supervisor or executive's inappropriate personality

influence on the organisation's employees. In this regard Bakker and Schaufeli (2000) warn that a characteristic of one employee can be contagious to other individuals.

2.5.1.12 Inconsistent leadership

While leadership in any organisation can be a challenge, another source of stress in police environments listed by McCreary et al. (2004) refers to leadership inconsistency which suggests that police officers are involved in criminal activities or misbehaviour while their superiors overlook the seriousness of these allegations. The said authors are trying to explain the strain or stress a law abiding police officer experiences when police activities in terms of institutional, societal and ethical expectations are not executed as expected in terms of institutional policy, existing legislation or work ethics. In this regard it seems that leadership inconsistency among American Police agencies mostly appears to be in cases where police officers are involved in corrupt activities (Dobby, Anscombe & Tuffin, 2004), family violence (Lott, 1995) and insufficient community policing (Zhao, Thurman & Lovrich, 1997). Relevant to the examples mentioned above, the implications are that the leadership turns a blind eye when a police officer is involved in inconsistent behaviour and is thus not reprimanded or punished accordingly. If it was a member of the public the punishment would have been more severe.

Kouzes and Posner (1997) are convinced that leadership inconsistency leads to authority problems. The leader-follower scenario should not be underestimated in the police work environment. Therefore, it can be assumed that if it is possible to invent ways of reducing crime that dramatically affect all spheres of society, most police officers will find success so gratifying that their own self-image, their pride in being part of a winning organisation, will serve as an internal bar to misbehaviour. Further, if a leadership/management structure can be created to keep everyone focussed on the institution's core crime-reducing mission, that in itself will go far to controlling police officers. Additionally, if police officers have legal and leadership support it can be expected that they (police officers) will not feel the pressure to exceed their authority, and will also not develop cynicism that comes from trying to do a job whose requirements are in irreconcilable conflict (Kerley, 2005; Violanti, 2005).

Paton (2005) is of the opinion that a consultative leadership style counters leadership inconsistency and moderates misconceptions in this regard.

According to Kelting (1995) inconsistent leadership leads to two cultures in police environments. The one is a management culture in which the leadership does not have an understanding of what real police work is about. The other refers to officers experiencing pressure from the public through the expectation that “something drastic” must be done about a particular crime situation. The feeling of no leadership support creates a “loneliness feeling” among police officers that in turn creates a second culture in police environments such as the “cop culture”. The latter explains the feeling that police officers are sold out to politicians, the media and civilian verbal attacks. According to Kelting (1995) the disparities between “official” police work and actual police work are what cause frustration, cynicism, stress and a wary isolated culture among police officers. The mentioned scenario institutes a feeling where the public is seen as “enemies” (possibly the reason for police brutality) and where policemen express their deep frustration at a system in which success or humiliation is often based on departmental politics or unpredictable encounters with citizens. In a sample drawn in 2004 by De Beer and Korf (2004) 21,6% of the police respondents that took part in the survey indicated that they (the respondents) experience leadership inconsistency in the South African Police Service.

2.5.1.13 Lack of resources

Research done in South Africa (Bakker, Demerouti & Schaufeli, 2003) predicts that stress associated with a lack of resources is relatively more severe than other stressors in the South African Police Service. In a sample drawn by De Beer and Korf (2004) it was found that lack of resources are the highest rated stressor, as 48% of the respondents indicated that they are experiencing stress as a result of lack of resources. In the same sample 34,7% of the police respondents indicated that equipment is inadequate. Whether resources are either not enough or inadequate, the same frustration is experienced by police officers. While a police career can be exiting and challenging, inadequate salary, staff shortages and a shortage of vehicles is a source of stress. This lack of resources

exaggerates stressful job demands including having to deal with crisis situations, excessive paperwork, having to perform tasks not in the job description, and having to do someone else's work. The mentioned research revealed a strong relationship between job resources and job demands. By not having resources (e.g. staff, money, and equipment) most probably it might be more difficult to deal with crisis situations, paperwork and performing tasks in or not in the job description (Wiese et al., 2003).

2.5.1.14 Unequal sharing of work responsibilities

According to McCreary et al. (2004) all police officers want to be responsible and accountable for their jobs. However, it appears that unequal work responsibilities may emanate from job design problems (Kreitner & Kinicki, 1998; Lowman, 1993; Luthans, 2001). The meaning and purpose of job design has been discussed earlier in this chapter (see 2.5.1.4). In this case, insufficient job design causes role overload (Ivancevich & Matteson, 1999; Luthans, 2001; Robbins, 2003). In turn, role overload is a source of burnout (Bakker et al., 2003).

Another source of stress detected in recent research (Bakker et al., 2003) reveals that other officers not doing their job is also a source of stress. Robbins (2005) is of the opinion that unequal sharing of work responsibilities can stem from social loafing which is a case where individuals hide within their teams. With the job demands a police officer faces, the workload becomes more unbearable when another officer is not taking full responsibility for his or her own job description (Wiese et al., 2003).

The above findings correlate with the Protestant Work Ethic values (recently called "veterans values") that some employees are more loyal to their organisations and colleagues in terms of work responsibility (Robbins, 2005). It seems that perceived unequal work responsibilities explained by a Protestant Work Ethic value also predicts that some cultures are more hard working than others and that those who do more than their colleagues may become dissatisfied and even stressed about the situation. Such situations are causing unbearable conflict between sub-cultures within the organisation.

It seems that favouritism among leadership in the police service as indicated in section 2.5.1.2, has the effect that some police officers are sharing unequal work responsibilities (De Beer & Korf, 2004). In the South African context, Hermann (2000) is of the opinion that affirmative action is the cause of inequality because the experienced individuals must do more work while the novice appointed in the same rank cannot produce work like the experienced employees. Therefore experienced police officers might become frustrated with the higher workload. On the other hand, an experienced individual may also see it as a challenge to train a novice depending on his or her attitude towards novices and affirmative action.

2.5.1.15 When sick or injured co-workers seem to look down on each other

Toch (2002) is of the opinion that police officers have a culture to support each other in difficult times, but there may be exceptions. In contrast, McCreary et al. (2004) suggest that individual police officers who are really sick or injured may experience stress due to the fact that co-workers probably would look down on them when they are absent from work. According to Paton (2005) some police officers are more vulnerable to diseases, injury and stress experiences. Consequently, it happens that an individual may book off sick due to these indispositions, of which stress, depression, anxiety or post traumatic stress disorder may be a cause. Those who stay on duty are thus burdened by more work. In addition, relevant stress factors may be exaggerated as it appears that antagonism in this regard increases in cases of racial and gender stereotypes in the police work environments. Usually it is the minority groups that suffer the most in these instances (Van Wyk, 2005).

Paton (2005) as well as Robbins (2003) is of the opinion that training in group skills can moderate stressors as a result of stereotypes and misconceptions that emanate from gender, racial and minority differences. Due to the changes in South Africa where one social minority group once ruled the police services, misconceptions similar to the above scenarios may rise. In a survey done by De Beer and Korf (2004) a substantial percentage (44,8%) of police respondents indicated that they feel that if one is sick or injured their co-workers seem to look down on them. The item was rated as second highest stressor in the

particular police sample. To reduce misconceptions, sensitivity training sessions that are focused on individual vulnerability, stereotyping and tolerance in police context should moderate individual stress experiences (Robbins, 2003).

2.5.1.16 Overemphasis of negatives by supervisors

People usually dislike negative appraisals (Grote, 1996). But, by overemphasising negative aspects in individual police officers' day-to-day activities by means of performance feedback systems or otherwise, may create the impression that positive aspects are overlooked (McCreary et al., 2004; Stevens, 1998). Stevens (2005) argues that negative appraisals of police work emanate from the fact that the community and police supervisors do not understand the circumstances under which ordinary officers are expected to work. In a study done by Dantzker and Surette (1996) it was found that police stress not necessarily stems from operational police work, but as a result of disturbed relationships between police officers and their superiors. Disturbed relationships cause tension and create dissatisfaction and disloyalty among police officers. Society or the community's negative appraisal of police responses with regard to solving crime may be overemphasised by their supervisors. Distrust of the management who lead police officers as well as members of public who bleed them additionally, may create alienation among police officers, their supervisors and the community.

According to Grote (1996), and supported by Robbins (2003), performance appraisal is a tool not only to look into negative work performance, but also a means of motivating individuals by appraising the positive aspects of employees. Furthermore, unrealistic aims in the work situation should not be set on behalf of individual employees. In police context it means that the positive aspect by arresting a criminal on the scene should be positively appraised instead of emphasising speed limits that were exceeded in order to quickly arrive on the scene. In addition, the emphasis should rather be on how many criminal activities were prevented instead of how many were arrested. A preventative stance towards law enforcement may increase satisfaction among police officers and constitute better relationships among themselves, their supervisors as well the community (Stevens, 2005).

Lastly, Millon and Everley (1985) warn against conscientiousness amongst managers and executives, which is a personality style, that urges the latter to be critical, demanding, and even tyrannical in the face of small errors made by subordinates. Superiors with such traits demand more attention to small detail, neatness, and perfection than executives with other work-personality styles. A conscientious executive cannot recognise that his or her staff admirably completed a rush job because he or she keeps spotting minor imperfections. Furthermore, these executives tend to equal overtime with job commitment and loyalty. Thus, they are likely to believe that subordinates or colleagues who leave the office at the regular quitting time, are leaving early.

2.5.1.17 Internal investigations

For disciplinary reasons, it may be expected that internal investigations will follow as a result of allegations of misconduct or other reasons (Stevens, 2005). Internal investigations of any nature may affect any police officer, irrespective whether an individual or group of officers are guilty or innocent (McCreary et al., 2004). An example of internal investigations can be when allegations of corruption take place. Any police officer may experience tension, or strain due to the fact that individuals are victimised or falsely drawn into allegations. Therefore, Stevens (2005) suggests a fair disciplinary system with consistent leadership styles in order to moderate the effects of stress under these circumstances.

2.5.1.18 Dealing with the court system

According to McCreary et al. (2004), the court and criminal justice system is a possible source of stress in the lives of police officers, if it is not properly managed. Firstly, the criminal justice system creates the perception among police officers that it is sympathetic to criminals and insensitive to police concerns (Lord, 2005). Furthermore, officers sometimes perceive the court system as inefficient, ruling too leniently on offenders, but too restrictive on procedural issues, such as evidence admission. Police officers easily come under the impression that the courts do not respect them as manifested in inconveniently scheduled court appearances and a lack of follow-up on cases. Further, an

officer cannot think and testify properly in court after he or she worked a midnight shift and has been sitting behind the wheel of a police vehicle all night. Additionally, scheduling court appearances for officers while enjoying days off, is not only affecting his or her morale, but also denies an officer the much needed recovery period for the circadian rhythm after signing off from night shift.

Aveni (2005) is of the opinion that rescheduling police officers' court cases as well as other responsibilities in case of night shifts will create the perception that the system is sympathetic to their dilemma. Such an act may moderate job satisfaction and commitment to the criminal justice system as a whole.

The above may coincide with the negative response they feel they receive from the public, supported by negative media coverage, especially when they (police officers) are involved in shootings or traffic crashes with fatalities (Lord, 2005). The afore-mentioned can be made worse if the public has easy access to police organisations' internal affairs, or court records for complaints.

2.5.1.19 The need to be accountable for doing your job

Since 1994, the restructured South African Police Service envisaged a police service that should be accountable for safety and security in the newly reformed South Africa (Mufamadi, 1994). This strategic aim also put questions to every individual police officer in terms of accountability. According to McEvan (2001), accountability is structured on different levels of the organisation. Accountability demands that a person is bound, obliged or willing, if called upon, to give an account of personal responsibility or liability for any action, or to make explicable any involvement in the action. Hunsaker (2001) is of the opinion that employees in an organisation are supposed to be mutually taxed with accountability, both on an individual or group level. This is to prevent social loafing or "free riding." In the new police service that is represented by the broad spectrum of society, the need for accountability may cause conflict. Individuals or cultural groups may accuse each other of social loafing. On the other hand, minority groups may refuse to be equally

accountable for organisational or team objectives as they may argue that it will bring them nowhere in terms of promotion. Attempts to improve accountability might cause stress among many individual police officers. In turn others may regard it as positive and a challenge.

2.5.1.20 Inadequate equipment

The effect of a lack of resources and its relationship with stress and frustration was discussed in section 2.5.1.13. In order to achieve organisational goals, teams or work groups need adequate equipment (Robbins, 2005). The work situation might be very stressful if there exists a high demand for performance and service delivery and the equipment to prevent, solve or investigate crime is inadequate. Criminals become more innovative, therefore police services necessarily require adequate equipment to meet all these demands.

Together with police stress, social resources form part of the same component in the Moos (1994) model. This important component will be discussed in the next section.

2.5.2 Social resources

Literature reviews revealed a possible mediating role of social resources between either individual vigour, or burnout during the coping process (Brief & Weiss, 2002; Shirom, 2003a). In case of the first mentioned, vigour predicts a positive outcome (a challenge) of stress, while in the latter burnout predicts to be a negative outcome (a negative stressor). For example, work groups can promote mutual trust, high social support and favourable employee morale, or vice versa. Specifically, work group cohesion was found to predict vigour (Shirom, 2003a; Terry et al., 2000). Therefore, it can be assumed that support from friends, family members or significant other resources may play a role in stress moderation.

The Moos (1994) stress and coping model divides social resources into two categories. The one is work resources and the other refers to non-work resources. Social resources,

which is within the framework of this section resort under panel 1 as discussed in chapter 1 (see figure 1.3). Moos (1994, 1997, 2002) also refers to personal resources. The latter is discussed under panel 2 (see figure 1.3 in chapter 1).

In the various research reports published by Moos (Moos & Swindle, 1990; Moos, 1994, 1997, 2002), he and his colleague suggested that co-workers can play a role during stress moderation. When an individual experiences stress he or she can turn to a colleague for advice with regard to a problem or during a life crisis. His definition of a life crisis is depicted as a separate phenomenon in panel 3 of the stress and coping framework. Although he (Moos) categorised life crises under a separate panel, it could have been simplified by also placing it under panel 1 which incorporates environmental stressors. A life crisis is nothing else than a threat coming from the individual's environment. However, a life crisis is something experienced by an individual which is uncontrollable, for example the death of a loved one or a divorce. Moos (1994, 1997, 2002) argues that stressors out of the work domain can be worsened by life crises in such a way that the individual must turn to co-workers, family members or friends during the coping process. In police context it means that, besides the environmental stressors like organisational hassles, the unexpected death of a colleague or family member may worsen the strain a police officer is already experiencing.

While Moos (1994, 1997, 2002) postulates his social resources in the stress handling process, Antonovsky (1979) also made a contribution in this regard. Emanating from the hardiness personality postulate of Kobasa (1979), Antonovsky (1979) suggests that people have several resources to handle stress. He (Antonovsky, 1979) described a range of such resources which he calls General Resistance Resources (GRR). His (Antonovsky) examples show similarities with the resources categorised by Moos (1994, 1997, 2002). It includes:

- Physical and biochemical GRR, like immuno suppressors and potentiators. These resources are of a personal nature and support Moos's (1994) panel 2;

- Artefactual-material GRR, particularly wealth, that can buy, for example, food and clothing or safe abortion for unwanted pregnancy, but also power, status and services. Artefactual-material GRR can also be categorised as of personal nature which is analogous with Moos's (1994) panel 2;
- Cognitive GRR, particularly knowledge-intelligence, contingent on education, which includes skills, but also knowledge, for example, avoiding AIDS or carcinogens, or of one's legal rights. Cognitive GRR is also of a personal nature like the previous two examples;
- The emotional GRR of ego identity. These GRR are also of personal nature;
- Interpersonal-relational GRR, like social support and commitment. The latter supports the Moos (1994) model by stating that the interpersonal relationship with family members, co-workers or non-work friends are stress moderators; and
- The macro socio-cultural GRR of "ready answers provided by one's culture and its social structure" which include religion. Macro socio-cultural GRR are analogous with the coping strategies postulated by Carver's (1997a) model of behavioural self-regulation.

It appears that Antonovsky's (1979) GRR are more of a personal nature and therefore form part of his hardiness personality postulate as suggested by Kobasa (1979). It means that an individual requires those personal resources to overcome stressful life events. Whereas Antonovsky (1979) places emphasis on personal resources in the stress or strain handling process, researchers like Moos (1994), Shirom (2003a, 2003b) and Zimet et al. (1988) extended their stress resistance or mediating postulates to social resources. According to Shirom (2003a) social resources are conducive to vigour. In contrast, a lack of social resources predict burnout where physical fatigue, emotional exhaustion and cognitive weariness are dimensions of the said phenomenon (Shirom, 2003b). In case of a negative social exchange relationship, helper jobs like police officers, nurses, general practitioners, hospital doctors, and other relevant occupations are more stressful and prevalent to

burnout than other occupations. A lack of reciprocity between individual and social resources is likely to play a role in the emergence of burnout (Schaufeli, 2003).

To operationalise the role of social resources in stress handling, Zimet et al.'s (1988) definition of social resources was given in chapter 1. Simultaneously, the Multidimensional Scale of Perceived Social Support (MSPSS) suggested by Zimet et al. (1988), forms part of the operationalisation of social resources. The said instrument operationalises the social resources theory for the empirical research. The three dimensions (family members, friends and significant other) and facets of the said instrument are dealt with in the next section.

2.5.2.1 Special people are around when one needs them

According to Zimet et al. (1988) individuals depend on people who they know, who are staying or working close to them and who have significant meaning during ordinary or difficult times. Police literature supports Zimet et al.'s (1988) arguments (Kerley, 2005; Lord, 2005). Special people can be a colleague or a group of colleagues who an individual police officer can share his or her experiences with, such as the harmful words of a supervisor. It refers to someone who is just a listener.

2.5.2.2 A special person with whom one can share joys and sorrows

In this case Zimet et al. (1988) most probably include one's direct supervisor with whom one has a very good relationship. A police officer may for example have had a bad encounter with a member of the public. If the direct supervisor is sympathetic, he or she may put an individual officer at ease when such an encounter causes anxiety. The office secretary, who is not really a friend, but who is a good listener, may also share an individual police officer's joy when he or she is promoted or studying for an important examination. In the latter scenario esteem support may be of significance (Lord, 2005).

2.5.2.3 Family members who try to help

Zimet et al. (1988) emphasise the importance of family members. Here they refer to a spouse, a brother or sister, or children who are around for emotional support. According to Lord (2005) a family member indeed may provide informational support. A police officer who considers promotion with a transfer, may find a family member's advice very useful, especially when his or her mind is distorted by other stressors in the work situation.

2.5.2.4 Emotional support from family members

Like in the previous section, family members may play a significant role when a police officer has witnessed a member of the public or a colleague's death. In this case emotional support serves in the interest of those individuals affected (Lord, 2005).

2.5.2.5 Someone who provides comfort

Someone who deals with critical stress debriefing in police context may be a source of support to an individual or a group of police officers (Violanti, 2005). A psychologist who on a regular basis deals with individual problems within the police agency may be considered as someone of significant support when putting tense individuals at ease. Violanti (2005) mentions that stress debriefing interventions are mostly focussed on pathogenic situations, but employee assistance to develop a positive outlook may enforce a salutogenic approach to social support.

2.5.2.6 Friends may really be of assistance

A police officer who experiences real stress may easily be relieved when he or she experiences the honest and real help of work- or non-work friends (Kerley, 2005; Lord, 2005). According to Kerley (2005) a police officer's private life is sometimes defined in terms of public life and may experience stress and support in the same way as ordinary

members of the public. While abuse also appears in police private life, a female officer may turn to real friends when her husband abuses her.

2.5.2.7 Counting on friends when things go wrong

A police officer who goes through a divorce or disciplinary action is not only affected in his or her private life, but his or her work performance is also under suspicion. In most serious cases individuals cannot handle stress anymore. There may be days that someone feels he or she may turn to suicide as a solution of his or her problems. In such cases Loo (2005) is of the opinion that real friends can play a significant role in terms of emotional support.

2.5.2.8 Family members who listen to problems

According to Violanti (2005) and Loo (2005) individual police officers are sometimes overwhelmed by perceived stressful situations. Someone may experience financial problems or he or she may be overlooked with regard to promotion opportunities. Such situations usually cause strain among individuals and family members may assist an individual to place his or her situation in a more positive perspective.

2.5.2.9 Friends with whom one can share joys and sorrows

Instead of a special person like a spouse, one may have friends with whom one can share joys and sorrows. A police officer may have received an increase, a promotion, or successful results of a difficult examination which he or she passed. Friends are there to share such joyful events. Even difficult times, such as experiencing a terminal illness can be relieved by close friends (Loo, 2005).

2.5.2.10 A special person with whom one can share feelings

A special person can be a spouse, a girl- or boyfriend, a colleague or someone who one

really can depend on (Zimet et al., 1988). According to Loo (2005) police officers may commit suicide if they become hopeless about their situation, and when they have no one to share their feelings with. Someone special who supports a police officer under similar situations may create a different perspective on the problems he or she is experiencing, and although things could be worse, such support may be instrumental in solving a problem, for example, financial problems or the loss of a colleague in the line of duty.

2.5.2.11 A family who is willing to assist with decisions

According to Loo (2005) an individual's rational thinking processes may become distorted when one is overwhelmed by an accumulation of stressors. As mentioned earlier, such scenarios may lead to suicide attempts and family members preferably should play a role during remediation. Loo (2005) is of the opinion that family members can be counselled in order to assist a police officer who is going through uncertain or unbearable times. At a later stage such an individual may re-think that his or her situation was a challenge instead.

2.5.2.12 Friends' openness to listen to problems or challenges

Zimet et al. (1988) suggest that friends are open to listen to problems, and can be moderators in stress handling. It means that at a particular point in time an individual may face a stressful or challenging situation in which he or she cannot make a decision on his or her own, or lack personal resources to deal with the challenge or problem, due to an accumulation of events. It may be a family or work-related problem which he or she cannot discuss with a spouse or supervisor. In such cases a friend's willingness to listen can moderate stress (Loo, 2005). A police officer may perhaps be burdened with a divorce as a result of stressful work situations and simultaneously perceive his supervisor as unsympathetic about his problem while experiencing family conflict. In a police context, Stephens (2005) is of the opinion that a non-work social resource is usually a useful moderator of stressful situations or challenges beyond the individual's rational abilities at that point in time.

It appears that, like social resources, personal factors may also have an impact on stress and health outcomes (Carver, 1998; Caspi, 2000). Thus, the next section will discuss the second component (panel 2) of the Moos (1994) model, namely the reciprocal relationship between stressors, individual differences and personality.

2.6. PERSONAL SYSTEM (Panel 2)

Personal factors form part of the personal system as depicted in panel 2 of the Moos (1994) model (see figure 1.3 in chapter 1). According to Moos (1994), every individual has a unique way of dealing with stressful situations. This uniqueness is rooted in individual differences that can be called personal differences or personal factors. The said panel represents the personal system of the individual and includes the following demographic aspects: age, gender, socio-economic status as well as personality, cognitive styles, ego strengths, self-confidence, religious and philosophical views, including relationships and previous crisis or coping experiences. These aspects assist the individual to deal with stressors or life crises (Moos, 1994, 1997, 2002). A combination of personal factors and environmental factors may have either positive or negative consequences for individual health (Moos & Schaefer, 1993). In the next section, demographic characteristics in stress moderation or inducement is discussed, while personality is discussed in the following section.

2.6.1 Demographic factors

This section explores the role of demographic factors in stress perceived stress. It begins with gender followed by age and tenure, ethnicity or race, educational level, marital status and rank.

2.6.1.1 Gender

In police context, some evidence was found to explain stress in **gender** differences while experiencing strain or challenge. Female officers face stressors that are unique to their

gender (Lord, 2005). Attempting to enter a profession that is traditionally male orientated, places a heavy burden on them. Acceptance by the majority, as well as their own family members, is a source of stress instead of a challenge to enter this new world of work. According to Van Wyk (2005) negative attitudes toward female officers are stressors that translate into strain for both female and male officers. Women are usually the target of sexual harassment by males for structural gains. In contrast, pairing male and female police officers for policing purposes, creates a healthy relationship between these gender groups that is conducive to performance competition. However, it was found that domestic disputes attended by both male and female officers simultaneously, may be a source of stress. The potential for encountering enduring violence is dictated by the presence of male officers on scenes of a domestic nature. The consequence thereof is a high level of strain experienced by both male and female police officers due to gender role attitudes which is compounded by patterns of domestic abuse (Van Wyk, 2005).

Haar and Morash (2005) mentioned that emotional labour may be another potential stressor that relates to gender. For example, police work may require more emotional labour in the sense that officers must induce or suppress “feelings” in order to sustain the outward countenance that produces the proper state of mind in others. One reason is that women created the perception that they are watched whether they can perform a job or not. Further, Steinberg and Figart (1999) add that women officers are often involved with sexual assault victims. These female officers consequently must manage these victims’ emotions that in turn place more emotional strain on them. In this case, it can be argued that their male colleagues provide emotional support if they are aware that such vulnerability exists, and the “message” can be conveyed via sensitivity training sessions (Robbins, 2003). The next demographic factor to be evaluated in terms of the stress handling process is age and tenure.

2.6.1.2 Age and tenure

The question whether **age** may play a role in perceived stress experiences, is also examined on a limited scale. In this regard, stress experiences among American police

officers are demonstrated in the average age of death for police officers (Violanti, Vena & Petralia, 1998). The average death age of police officers is 66 years while the general population is 75 years. It was found that police officers in this population died of cancer and heart diseases. In another study conducted in Rome, Italy, an increased rate of ischemic heart disease was found in officers less than 50 years of age. A strong prevalence of other stress-related diseases found in this cohort were colon cancer, bladder cancer, non-Hodgkin's lymphoma, and melanoma. Bladder cancer rates were significantly increased in patrol car drivers, while kidney cancer was more prevalent in motorcycle officers (Violanti, 2005). It appears that if **age** runs parallel with **tenure** (years of service) police officers may experience less stress if they progress through the ranks, or migrate to branches where individuals experience more autonomy (Kirkcaldy, Brown & Cooper, 1998).

Kirkcaldy et al.'s (1998) demographic study among police superintendents in the United Kingdom, revealed that older personnel report less home and work carry-over problems. The assumption is that as one approaches retirement, it is likely that negative spill will be less pronounced. The latter findings do not explain why Violanti (2005) reports a high suicide rate in a cohort of officers over the age of 65 or after 30 years of employment . A further assumption could be made that stressors vary from country to country and from region to region. Kirkcaldy and Cooper (1992), for example, report a series of positive correlations in a sample of senior police in the Berlin Metropolitan Police between age and the specific facets of job-stress like "relationships with other people", "career and achievement" and "home-work interface". They argue that older personnel experience more threat from impending redundancy or early retirement, an absence of any potential career advancement and opportunities for personal development, and eventually feel the adverse impact of demands on the home-work interface more than younger personnel. The latter study appears to be in agreement with Warr's (1999) suggestion that "young people" are more troubled by recurrent daily hassles and experience greater personal conflicts between possible identities and future pathways, while older personnel experience more anxiety due to the approaching retirement age. This section explicates the role of age and tenure in perceived stress, while the next section concentrates on ethnicity or race as a demographic factor.

2.6.1.3 Ethnicity or race

When it comes to **ethnicity** or **race** as an individual difference, significant research results have also been reported (Haarr & Morash, 2005; Van Wyk, 2005). Like gender, race is a social construct. Van Wyk (2005) draw a distinction between ethnicity and race, while Berry (1998) uses ethnicity and race as interchangeable. However, Van Wyk (2005) categorises ethnicity as a biological, spiritual, cultural, or religious inheritance, while race refers to skin colour. The reason why she (Van Wyk) attempts to differentiate between the elements of ethnicity and race (whether they are interchangeable or not), is to illustrate that every ethnic or racial element in society or in the workplace can create a minority group within such a context. Van Wyk (2005) adds further that minority in the workplace can be a source of stress as a result of discrimination. Whereas some researchers (Haarr & Morash, 2005; Van Wyk, 2005) report minority as a source of stress in police environments, Barlow and Barlow (2000) are of the opinion that healthy competition between minorities in the workplace can be a challenge. The latter boosts them all for productivity and job satisfaction, if managed well. In the American context, Van Wyk (2005) emphasises that minorities of colour experience more strain than whites. In South Africa one can see Indians, coloureds and whites as minorities in the current political dispensation, and it can be expected that these minorities are experiencing more strain as a result of reversed discrimination by the majority (Hermann, 2000). The next section explains the role of educational level in perceived stress.

2.6.1.4 Educational level

It seems that individual level of education, linked with ethnic minority and age may have an effect on stress moderation. Berry (1998) is of the opinion that **education** is likely to affect a minority employee's job satisfaction. Despite the possibility that ethnic minorities may attempt to improve their qualifications, jobs and posts may not be easily available, and job satisfaction eventually will be low. Although speculative, Berry (1998) is further of the opinion that overqualification also reduces the level of satisfaction of young workers of all ethnic groups. In police context, Kirkcaldy et al. (1998) found that the most highly educated

(postgraduate degree) personnel report the lowest level of satisfaction with regard to personal relations. The latter sample was obtained among police superintendents. When it comes to satisfaction with organisational design and structure linked with educational levels, the same sample reflected a curvilinear relationship in terms of satisfaction. Satisfaction increases from low level personnel to professional diploma staff. It decreases with tertiary education, progressing from university graduates to postgraduate qualified personnel (Kirkcaldy et al., 1998).

When considering education level as a predictor of stress and eventually job satisfaction in the South African Police Service (SAPS), it can be expected that the stress levels are high and the satisfaction low. Legget, Louw, Schönteich and Sekhonwagane (2003) for example reported that at the end of 2002 the SAPS comprised of 12 191 constables (12%), 18 072 sergeants (18%), 56 930 inspectors (55%) and 15 156 senior staff (15%) and that the numbers decreased between 1996 to the end of 2002 from 166 206 to 102 349. The above statistics depict a picture where inspectors are by far exceeding the numbers of constables and sergeants. Further, these ranks are mostly obtained by further education. Therefore, if the ratios are not changed, the SAPS may experience high numbers of dissatisfied corps which is not good for individual and organisational health. Police officers may further see studies as a way to improve quality of life. However, it does not promise satisfaction, due to lack of promotion opportunities and as a result of reversed discrimination. If it is envisaged to put the said numbers at the correct ratios in comparison with international norms, further dissatisfaction may arise as a result of top-heaviness among middle ranks that hampers further promotion opportunities. As mentioned, demographic factors like marital status may also play a role in perceived stress. This factor is explored in the next section.

2.6.1.5 Marital status

In this section **marital status** as a personal factor in the stress handling process is evaluated. Roberts and Levenson (2001) suggest that police officers are also members of the public with spouses, children, hobbies, pets and the like. As a result of the work they

perform, such as shift work, or working on holidays or weekends, spouses and children may experience the secondary effects of stress. The time away from home, coupled with constant interaction with the public, can increase the possibility of infidelity and sexual promiscuity. Furthermore, the potential dangers of police work may cause fear and concern among the families of officers. Additionally, police officers routinely observe traumatic, violent, and depressing events that may impact on familial relationships.

Whereas the marital or parental relationship in some instances can be a moderator of stress, the above scenario is evidence of the inducement of stress, and eventually a vicious circle may emanate from the situation (Kerley, 2005). Therefore, a married police officer may experience more stress than a single officer (Van Wyk, 2005). Roberts and Levenson (2001) found that on stressful days, officers and their spouses, became more defensive in their interaction style. Their (Roberts & Levenson) research revealed that officers and spouses displayed higher levels of heart rate, autonomic arousal, and cardiovascular arousal at such occasions. These elevated levels made it more difficult to think clearly, communicate clearly with each other, or solve problems effectively. The defensive and vigilant posture of a spouse may either be in anticipation of difficult marital interactions or in an effort to avoid exacerbating their husbands' stress. In sum, it can be assumed that a demographic characteristic like marriage status may predict stress (or adverse situations) among police officers, depending on the circumstances. It also seems that the rank in which an individual serves can play a significant role in terms of the intensity of stress in the police context (Kirkcaldy et al., 1998). This aspect is investigated in the next section.

2.6.1.6 Rank

Not much research has been reported with regard to the relationship between **rank** and stress levels. However, Lord (2005) reports that low level supervisors like sergeants may experience more stress that originates from the organisation's additional administrative duties. Kirkcaldy et al. (1998) report lower levels of stress among senior police officers due to the nature of their work in which they can consider strategies like delegating, planning and better "time-tabling." Such strategies may create pleasurable work conditions. Whereas the

above refers to organisational origins of stress, it appears that low level officers (e.g. constables) predict more operational origins of stress in the form of post-traumatic stress disorder. The latter situation happens due to constables' or patrol officers' direct contact with violent crimes or disturbing crime scenes (Stephens, 2005). As reported earlier in this section, police officers in the South African context that are categorised among minority groups may be more frustrated on a lower level, due to the lack of promotion opportunities.

In the afore-mentioned sections demographic factors were discussed as stress moderators or stress inducements. In this regard, personality, which also forms part of the Moos (1994) theoretical framework and the empirical research, is discussed in the next section.

2.6.2 Personality

According to Morris and Maisto (2005) personality is an individual's unique pattern of thoughts, feelings, and behaviours that persist over time and across situations. These authors are aware of the diverse approaches psychologists have with regard to personality definitions, but in their discussion of personality as a construct, some commonalities among psychologists can be mentioned, namely:

- Personality is dynamic, stable and enduring. Over a period of time a person's responses to various situations can be predicted;
- Personality refers to a combination of unique behaviour characteristics, thoughts and emotions of any individual; and
- Personality helps a person during adaptation to life situations.

Individual uniqueness is described by various authors in terms of different theoretical approaches (Costa & McCrae, 2000; Goldberg, 1993; Mischel, Shoda & Smith, 2003). Some try to identify the most important characteristics of personality. Others try to understand why personalities differ. Among the latter group, a number of psychologists

identify the family as the most important factor in the development of an individual's personality. Another school emphasises environmental influences outside the family, and individual experiences. The broad theoretical schools that describe individual uniqueness are the psychodynamic theories, the humanistic personality theories, the trait theories and the cognitive-social learning theories (Morris & Maisto, 2005).

As mentioned in chapter 1, the trait personality theory has been chosen for this research and is discussed in the next section. According to Kowalski and Westen (2005) sufficient data has been gathered to prove the relationship between the dimensions of the Five Factor Personality model and stress related behaviour. The next section explicates the relevance of personality traits in the stress and coping process.

2.6.2.1 Trait theories

Traits are continuous dimensions like "friendliness". On such dimensions, differences among individuals may be arranged quantitatively in terms of the degree of the quality the person has. Degrees of "conscientiousness" is another example of a quantifiable trait (Mischel et al., 2003). Traits are assumed to be quantifiable and scalable (Mischel et al., 2003). Scalable means that a trait is a certain quality or attribute, and different individuals have different degrees of qualities or attributes. A pioneer in personality research like Guilford (1959) defined a trait as "... any distinguishable, relatively enduring way in which one individual varies from another." A further aspect of traits is that inferences can be made from how a person behaves. Gordon Allport and his colleagues composed a vocabulary list of almost 18 000 words that might refer to personality traits. For Allport (1961), traits or dispositions are literally encoded in the nervous system as structures that guide consistent behaviour across a variety of situations. Allport (1961) also believed that while traits describe behaviours that are common to many people, each individual personality comprises a unique constellation of traits. According to Krueger and Makon (2002), a few psychologists today might deny the influence of environment in shaping personality.

However, recent evidence substantiating the importance of genetic factors in the development of specific personality traits supports Allport's suggestion that at least some personality traits are encoded biologically (Loehlin, 1992; Plomin & Caspi, 1999). The genetic stance of the trait theory is in conjunction with the Diathesis-Stress model as explained in section 1.6.2 of chapter 1.

While Allport started the trait discourse and proposed thousands of words or attributes of personality, Cattell (1965) narrowed the list of synonyms to 200 and the traits to 16 (initially), and later added an additional seven. Cattell (1965) used a statistical technique called "factor analysis" to reduce the number of traits. Later Eysenck (1976) reduced it to just three dimensions such as emotional stability, introversion-extroversion, and psychoticism. Contemporary trait theorists have boiled personality traits down to five basic dimensions, namely extroversion, agreeableness, conscientiousness, emotional stability, and culture (Goldberg, 1993; Wiggins, 1996). There is also growing consensus today that these five dimensions, known as the "Big Five" personality dimensions, and sometimes referred to as the "Five-Factor Model" capture the most salient dimensions of human personality (McCrae & Costa, 1997, 2000; Wiggins, 1996). The said model is more comprehensively discussed in the following sections.

2.6.2.2 The Five-Factor Model of personality

As mentioned in chapter 1, the Five-Factor Model of personality is chosen as an instrument to measure personality in the empirical research. There are various reasons for this decision. Firstly, as mentioned, it is recently regarded as the most comprehensive taxonomy of personality (Costa & McCrae, 2000; Goldberg, 1993; Saucier & Goldberg, 2002). Secondly, it has relevance to employment decisions. For example, one study (Ones, Viswesvaran & Schmidt, 1993) found that the dimensions of conscientiousness and emotional stability were reliable predictors of job performance in a variety of occupational settings. In addition, research has shown that absenteeism in the workplace is related to the conscientiousness, extraversion, and neuroticism scales (Conte & Jacobs, 2003).

Lastly, research revealed that the Big Five personality traits are universal and thus evident in various cultures (McCrae & Costa, 1997; Salgado, Moscoso & Lado, 2003). Consequently it can be expected that police officers should also be classified among the dimensions of the Big Five personality structure.

Contemporary proponents of the Big Five structure such as Goldberg (1992), McCrae and Costa (1997), as well as Wiggins (1996) use the original Big Five factor presentation as originally discovered by Tubes and Christal (1961) and Norman (1963). The latter authors set broad dimensions for measuring scales of the Big Five personality structure. The five broad dimensions will be dealt with in the following sections generally proposed by the Big Five theorists (Costa & McCrae, 1992; Goldberg, 1993; McCrae & Costa, 1997; Saucier & Goldberg, 2002), and in terms of the Goldberg (1993) scale.

- **Introversion versus extraversion**

Extroverts are sociable and love interaction with other people. Extroverts prefer to socialise in large groups and gatherings. They are assertive, active and talkative. By nature they are energetic, cheerful, enjoy excitement and have a need for stimulation (Ashton, Lee & Paunonen, 2002). Their lives are characterised by upbeat and optimism. Recent research evidence suggests that social attention is the cardinal feature of extraversion (Ashton et al., 2002). Further, extraverts have greater impact on their social environment, often assuming leadership positions. Conversely, introversion reflects an absence of extraversion. Introverts are reserved and sometimes perceived as unfriendly, independent, and even inert. Introverts prefer to be alone but do not reflect social anxiety (Ashton et al., 2002). They are not necessarily unhappy or pessimistic. According to Costa and McCrae (1992) introverts tend to be more socially independent individuals.

A further comparison between extraversion and introversion revealed that extraverted men are happier and likely to be bold with women they know, whereas introverted men tend to be more timid with women (Larsen & Buss, 2005). Extraverts like to drive fast, listen to

music while driving, and as a consequence tend to get into more car accidents than their introverted peers (Lajunen, 2001). Another study shows that salespeople are more likely to be extraverts than introverts, and cooks are less open to experience than are creative writers (McCrae & Costa, 2003). In addition, alcohol consumption is best predicted by high extraversion and low conscientiousness (Paunonen, 2003). The sub- dimensions proposed by Goldberg (1993) are:

- Silent versus talkative;
- Unassertive versus assertive;
- Unadventurous versus adventurous;
- Unenergetic versus energetic; and
- Timid versus bold.

In sum, not much research has been reported in personality and police stress/burnout literature (Larsen & Buss, 2005). However, Maslach (1982) found that those officers who appear to be weak and unassertive, reserved and conventional, and unable to express or control their emotions (e.g. hostility, fear, impatience, empathy) are more prone to burnout. Barrick and Mount (1991) is of the opinion that extraversion is a requirement for police performance. The latter's statement is supported by later research conducted by Cortina, Doherty, Schmitt, Kaufman and Smith (1992). An assumption can be made that those police officers who pretend to be unenergetic may also be prone to burnout, as energy is a requirement to prevent burnout and to experience high levels of vigour (Shirom, 2003a, 2003b). Furthermore, in the South African police context it can be expected that particular individuals, who score high on extraversion, may see new tasks as a challenge, but will become frustrated if no stimulation is experienced in their immediate situation. Whereas introversion versus extraversion forms part of this discussion, antagonism versus agreeableness as a sub-scale is investigated in the next dimension proposed by Goldberg (1993).

- **Antagonism versus agreeableness**

Antagonism reflects an opposing and critical outlook on life (Larsen & Buss, 2005). Antagonistic people are also egocentric, skeptic and competitive. Although low scores on the antagonism-agreeableness scale have been associated with accurate scientific analysis, in some severe instances it also suggests a narcissistic, anti-social and paranoid personality disorder. In addition, those high on antagonism tend to assert their power to resolve social conflicts (Graziano & Tobin, 2002). Antagonistic individuals seem to get themselves into a lot of social conflict. The opposite of antagonism is agreeableness (Goldberg, 1993). Like extraversion, agreeableness is a dimension of interpersonal trends. Such an individual is sympathetic towards others and eager to help. They also believe that others are eager to assist them. Although the agreeable person is popular, he or she tend to withdraw from conflict situations. Because it is a disposition that gives other an advantage over a difficult situation, they are simultaneously expected to fight for their rights. In some instances high scores have been associated with a dependent personality disorder. The abbreviated facets of the antagonism-agreeableness scale are as follows:

- Unkind versus kind;
- Uncooperative versus cooperative;
- Selfish versus unselfish;
- Distrustful versus trustful; and
- Stingy versus generous.

Agreeable individuals seems to get on well with others and are well liked (Larsen & Buss, 2005). McCrae and Costa (2003) suggest individuals scoring high on agreeableness to be suitable to service careers. This postulate is supported by Barrick and Mount (1991) as an additional personality trait suitable for police careers. In the South African context, with its history of racial conflict in the past where a high demand is currently placed on community policing for the future, individuals with such a trait may be selected as patrol officers. Continuing the Big Five dimensions proposed by Goldberg (1993), lack of direction versus

conscientiousness is the next sub-scale to be evaluated.

- **Lack of direction versus conscientiousness**

People with a lack of direction (low conscientiousness) are weak-willed, sometimes reckless and sloppy (Larsen & Buss, 2005). People belonging to this category tend to be less organised, have a lack of trust in their own abilities and acknowledge their low sense of unpreparedness and low aptitude. Low scores on this sub-scale suggest unreliable individuals with a more relaxed attitude towards their responsibilities. Such individuals are characterised with a low sense of success, lack of ambition, aimless and mostly happy with low performance levels. Low scores on the lack of direction versus conscientiousness scale represent hedonism and sexual interest. They tend to postpone activities and are less encouraged to take many challenges. This category lacks an urgency in the execution of tasks (Larsen & Buss, 2005). Together with low agreeableness, low conscientiousness predicts risky behaviours such as having many sex partners and not using condoms, as well as high alcohol consumption (Paunonen, 2003; Trobst, Herbst, Masters & Costa, 2002).

Individuals with high scores on the sub-scale belonging to the conscientious pole of the personality dimension (Saucier & Goldberg, 2002). They are driven by self-control, planning, and an organised way of executing tasks. The conscientious person is purposeful, has a strong will-power and is determined. They tend to be high achievers and high scores on this sub-scale suggest exactness, promptness and trustworthiness. Conscientiousness is linked with high academic and occupational performance, but also with compulsive neatness and irritable meticulousness or workaholic behaviour. High scores predict job satisfaction and more committed positive social relationships (Langford, 2003). The abbreviated sub-scales of the lack of direction versus the conscientiousness dimension are as follows:

- Disorganised versus organised;

- Irresponsible versus responsible;
- Impractical versus practical;
- Careless versus thorough; and
- Lazy versus hardworking.

A high score on conscientiousness is a third trait suggested by Barrick and Mount (1991) as well as Silverthorne (2001) as appropriate for leadership positions, especially in police environments and business settings. With the leadership situation of the Police Service that is under suspicion, individuals high on this scale should be an asset to the institution's leadership corps (Louw, 2001). Whereas lack of direction versus conscientiousness constitutes this discussion, the fourth dimension on the Goldberg (1992, 1993) Big Five personality scale is emotional stability versus neuroticism, and is discussed in the next section.

- **Emotional stability versus neuroticism**

This scale contrasts emotional stability or adjustment with maladjustment or neuroticism. Low scores suggest emotional stability (Goldberg, 1993). Such a person is relaxed and reflects calmness and even-temperedness, and is able to deal with stressful situations without becoming upset with such events. Furthermore, low scores represent high frustration tolerance, emotional control, no social disturbances, and individuals with such low scores find it easy to overcome temptations. In addition, low scores on the emotional stability scale indicate that an individual remains on course despite day-to-day hassles (Larsen & Buss, 2005).

In contrast, people scoring high on the neuroticism scale tend to experience negative emotions such as anxiety, depression, fear, anger, guilt and sadness (Costa & McCrae, 1992; Saucier & Goldberg, 2002). Such individuals usually feel insecure and easily become jealous of other. People with high scores on this scale tend to entertain irrational ideas, experience a lack of impulse control and an inability to deal with stressful situations. Costa

and McCrae (1992) are of the opinion that, although patients who suffer from neurosis usually respond with high scores on the neuroticism scale, they however should not be interpreted as psychopathology cases. Furthermore, people with high scores on this scale are usually worried, tense, reflect frustration and bitterness, tend to be depressed and easily experience shyness and self-consciousness. Such individuals are uncomfortable among groups of people and tend to experience feelings of inferiority. Unhappiness also predicts high scores on neuroticism. Such individuals are more prevalent to social disconnectedness, more fatigue over the day, more likely to develop post-traumatic stress disorder and have a greater fear of engaging in sex (De Vries & Van Heck, 2002; Heaven, Crocker, Edwards, Preston, Ward & Woodbridge, 2003). The abbreviated sub-scales of the Goldberg (1992, 1993) Big Five personality scale are:

- Relaxed versus tense;
- At ease versus nervous;
- Stable versus unstable;
- Discontented versus contented; and
- Unemotional versus emotional.

Research (Barrick & Mount, 1991; McCrae & Costa, 2003) suggests that individuals who respond high on the emotional stability/neuroticism dimension should not be considered for appointment as police officers due to their high vulnerability. Furthermore, it can be expected that police officers who are high on the neuroticism scale may become dissatisfied easily, have lower self-esteem and be likely to perform less effectively under situations of stress. When considering the above, it can be assumed that police officers who are high on this scale will also predict marital problems which may induce the negative aspects of the work-home interface, while the converse predicts candidates who are eligible for such positions. A discussion in the next section of closedness versus openness as a dimension of the Goldberg (1992) Big Five personality scale will conclude the investigation of personality as a construct in the Moos (1994) framework.

- **Closedness versus openness to new experience**

Individuals with low scores are more conventional, conservative and reflect a low level of interest. Life is approached prosaically and they prefer to focus on the practical side of tasks or life events. People with low scores are less sensitive to, and do not show an interest in arts. Those with low scores on this scale are more resistant to change and prefer the known as less disturbing. Low scores also imply a lack of curiosity and intelligent individuals will still reflect a narrowed focus (tunnel vision) on limited subjects, while finding it easier to ignore competing stimuli. Closed individuals tend to honour authority and tradition. In general, closed individuals are more conservative despite any political affiliations (Larsen & Buss, 2005; Peterson, Smith & Carlson, 2002).

High scores on the closedness-openness scale represent an openness with regard to life experiences (Peterson et al., 2002). They represent active imagination, aesthetic and emotional sensitivity and prefer diversity. Such individuals are mostly unconventional and opposed to authority and have an unique value system. They prefer their own and independent judgement, as well as a value system dominant to others. Emotional experiences are intensified. High scores may also reflect high levels of imagination (Watson, 2003). Such people use fantasy and daydreaming not only to escape spheres of awareness, but to create an interesting inner world for themselves. They believe that imagination is conducive to a creative lifestyle. Individuals with high scores have a high aesthetic sense and also attach high values to arts and beauty (Watson, 2003). They are deeply touched by arts, especially poetry, and are absorbed by music although they may not be talented in these domains themselves. Higher scores represent more deeply and differentiated emotional experiences. Such people are also open to variety and like to visit new environments. They have an appetite for unusual food. They tend to take on new hobbies and variety and change are preferred beyond the known and routine. Therefore, such individuals may also be open to new and unconventional ideas. They are of more philosophical nature and may enjoy brain teasers (Costa & McCrae, 1992). The abbreviated sub-scales proposed by Goldberg (1993) for this scale are:

- Unimaginative versus imaginative;
- Uncreative versus creative;
- Uninquisitive versus curious;
- Unreflective versus reflective; and
- Unsophisticated versus sophisticated.

A third dimension on the Five Factor model predicted by Barrick and Mount (1991) for police officers, is a high score on openness to experience. Police officers performing high on this scale may be good at problem solving. When it comes to police management, Whetten and Cameron (2002) also support such a statement, because an openness to change opportunities requires a high tolerance for ambiguity among information sources. Thus, good police managers may score high on this dimension, although it seems that low scores on this dimension do not disqualify an individual from being a police officer. In the same vein, Peterson et al. (2002) warn that such low scorers are more prone to alternative sex partners. It may therefore be assumed that individual officers scoring low on this dimension may become involved in marital problems when experiencing prolonged stress. Furthermore, the latter situation will not be positive for spillover effects between work and home (Petersen et al., 2002).

SUMMARY

In the afore-mentioned sections attention was given to the dynamic interaction among dimensions described in panels one and two of the Moos (1994) model. Stressors were explicated out of a police organisational context. Discussions within the framework of the Moos (1994) model, (in particular with reference to panel 1) revealed that the police officer's work environment consists of various facets that can be perceived as either distressful, or challenging. A stressful situation for the one is not stressful for the other and vice versa. In the same vein, so do situations that impose challenges on individuals. One situation may be a challenge to the one but not to the other. All situations are interpreted differently. The role of social resources was also underlined in the discussion. In some

instances families, friends or significant other individuals might be of great support, but in other situations such resources can worsen the effect of a perceived stressor in the policeman/woman's work and social life.

Personal factors and their role in the dynamic process of stress and coping, as proposed by the Moos (1994) model, were considered in terms of the police work environment. In this regard, attention was given to demographic factors as well as personality. Indeed, various literature reviews revealed, although on a limited scale, that demographic factors like age, gender, years of service (tenure), marital status and rank can play a role in perceived stressors, and eventually in the stress-coping process. None of these factors were found to be dominant in cross-sectional research reports and every facet played a situational role at a given point in time depending on individual variables. It seemed that older people learned during lifespan progress how to reduce the effects of stressors, as did experience in a particular career position. According to literature reviews, detectives experienced more job satisfaction while senior police officers gave evidence of less perceived stress (Kirkcaldy et al., 1998).

A discussion of personality's role in stress handling concluded the discussion of panel 2 as proposed by Moos (1994). It seems that the Five Factor model is an appropriate structure for personality assessment in a work context. High scores on Extraversion, Conscientiousness, and Openness are relevant predictors of stress resistance in terms of a police personality, while high scores on Neuroticism predict pathological consequences for relevant respondents (Larsen & Buss, 2005).

Whereas panel 1 of the Moos (1994) model concentrated on the environment and social resources as sources of stressors, the following section distinguishes acute life crises from environmental sources of stress. Although they are not measured in the empirical research, but rather considered as an element of environmental factors, acute life crises represent an additional panel in the Moos (1994) stress and coping model. This component will be discussed in the next section with an explanation as to where it fits into the environmental

system.

2.7 LIFE CRISES AND TRANSITIONS: (PANEL 3)

The third panel in the Moos (1994) model (see figure 1.3 in section 1.6.3 of chapter 1) depicts life crises and transitions in an individual's life that may cause additional strain, besides those threatening or challenging stressors that approach him or her out of the immediate environment. When examining the framework of the Moos (1994) model, one discovers that Moos refers to two types of stressors. Panel 1 (see figure 1.3 in section 1.6.3 of chapter 1) refers to "ongoing life stressors", while panel 3 refers to "event-related factors." The question should be asked why two panels were formed to represent day-to-day stressors and life crises respectively, because any stressor, irrespective of the nature or context, comes out of the environment and the same coping processes are activated in order to deal with such stressors whether it is acute or chronic (Moos, 1994, 2002).

A further investigation into Moos's literature (see Moos & Moos, 1994) reveals that he developed an instrument called the Life stressors and Social Resources Inventory (LISRES) that measures both types of stressors presented in panels 1 and 3. Depending on the aims of a research project, the said instrument seems to detect superficial acute life crises. In addition, it can be mentioned that in an earlier study (Moos, 1986) he (Moos) used the same model exclusively to investigate acute life stressors with the emphasis on the construct represented in panel 3. It further appears that life crises were Moos's (1986) main concern in that particular research project. Thus, when evaluating the way Moos uses the model, it may be considered a flexible theoretical model that can be adapted in accordance with situations, and that the aims of an empirical enquiry dictate whether this panel is of concern for a particular research project or not. In addition, irrespective of the emphasis of a particular research project, panel 3 continues to remind researchers of the existence of daily environmental stressors (panel 1) and acute life stressors and transitions (panel 3) that may occur simultaneously. Therefore, in this research no instrument is selected to measure acute life crises due to the research objective that focuses on

environmental factors in police stressors in the police context. However, although not measured, acute life stressors should be identified and briefly described in order to draw a theoretical understanding between these components as postulated by Moos (1994), as well as in the police context.

According to Moos (1986, 1994, 2002) a life crisis means typical changes in personal factors like a physical injury or illness. It can also be changes in environmental factors such as the death of a spouse, a divorce or recovering from a serious motor accident. Furthermore, according to Moos (1987, 1994, 2002), people choose environments which they are willing to conform to. People have a preconceived cognitive map of their environment and do not want changes in this environment. It means that any unwanted change in the environment will be an acute life crisis. Being confined to a wheel chair after a motor accident is a life change that requires substantial life adaptations. Even forced changes in office space may be unwanted and can be considered as a life crisis due to the infringement of the individual's personal space.

People may prefer open plan offices. Other may prefer closed plans. Changes at the work that have an effect on the autonomy of the individual may cause mood disturbances (Warr, 1999). Furthermore, as suggested by Erikson (1968), during an individual's lifespan, people normally go through eight developmental phases. Every phase has meaning to individual development. During adolescence the individual is engaged in the development of an own identity. Emotional problems sometimes go with these life stages. In addition, the development of intimate relationships is another life task. People may further experience more emotional responses and potential negative physiological, as well as physical affects during a life crisis or transition, depending on the way they cope with the situation (Moos, 2002). A dynamic relationship between environmental and personal factors eventually influences the way these difficult situations are dealt with. Therefore, the level of satisfaction with life-outcomes will consequently influence individual well-being (Holahan, Moos & Schaefer, 1996).

The examples given by Moos (1986, 1994, 2002) comprising life crises in most instances relate to post traumatic stress disorder and are distinct from daily hassles. Furthermore, life crises are acute stressors, distinguished by McCreary et al. (2004) as operational stressors that mostly relate to post traumatic stress disorder in police context. Paton (2005) uses the term “critical incident stressors” when referring to acute stressors. Such stressors include disaster scenes (e.g. earthquakes), or hostage taking and terrorist bombing events. Others may be the loss of a family member, child or a dedicated colleague through unexpected death or shooting incident, while bearing the effects of daily environmental factors. Other examples involve the recovery and identification of bodies and human remains. On these negative personal experiences are the stress reactions and feelings of the bereaved. Police officers are not trained to deal with these situations. These acute stressors make police officers more vulnerable to daily experienced stressors. Furthermore, a transfer from one unit to another may induce a life crisis for one individual, but a challenge to another (Stephens, 2005; Warr, 1999). Because the latter scenario relates to post traumatic stress disorder (McCreary et al., 2004; Stephens, 2005), which is not within the mandate of this research, no further attention will be given in terms of a literature review or the empirical research. What is of importance at this point of this research, is the aspect of coping strategies applied by individuals when dealing with stressful or challenging situations. Therefore, cognitive appraisal and coping responses will be discussed in the next section within the framework of the Moos (1994) model.

2.8 COGNITIVE APPRAISAL AND COPING RESPONSES (PANEL 4)

Panel 4 in the Moos (1994) stress and coping model represents cognitive appraisal and coping responses. Further, the model suggests that the coping process takes place in different phases, although interwoven. The Moos (1994) model posits that acute life crises or transitions (panel 3), and the environmental and personal factors that foreshadow them (panels 1 and 2), shape cognitive appraisal and coping responses (panel 4). While section 2.4 explored various coping models and theories, this section explicates the above phases

which are represented in the fourth component of the Moos (1994) model as depicted in chapter 1 (see panel 4 of figure 1.3 in section 1.6.3.). The phases proposed by Moos (1994) as well as other authors (Anshel, 2000; Lazarus, 1994; Lazarus & Folkman, 1984) refer to are primary appraisal, secondary appraisal and adapting (coping with) to a threatening or challenging situation.

According to Moos (1994, 2002) appraisal refers to the individual's perceptions and interpretations with regard to threatening (or challenging) aspects in the environment, and the consequent evaluations done. Moos (1994, 2002) distinguishes between primary appraisal and secondary appraisal. In addition, Moos (1994, 2002) also mentions that a coping response is a cognitive process in which the individual chooses several strategies in order to deal with the threatening or challenging nature of a stressor or life crisis. Consequently, the decisions made can influence individual psychological well-being either positively or negatively (Holahan et al., 1996). To understand the stress and coping process, Moos (1994) distinguishes between approaching and avoiding coping strategies. Seeing that coping is a moderating process in which appraisal and the application of coping strategies play a role, the next section gives attention to primary and secondary appraisal, followed by coping strategies.

2.8.1 Primary appraisal

Primary appraisal is the process of perceiving a threat or challenge to oneself (Carver et al., 1989; Lazarus & Folkman, 1984; Moos, 2002). The individual decides whether the stressor or challenge is something worth getting upset about. If the individual decides that a stressor does not imply any danger, the coping process is stopped. Weiten, Lloyd and Lashley (1991) summarised primary appraisal as an initial evaluation of whether an event is either irrelevant, relevant but not threatening, or stressful. In the event that danger or threat is perceived, the individual moves to the process of secondary appraisal (Lazarus & Folkman, 1984; Moos, 1986, 1994, 2002). In the police officer's situation, it means that

he or she detects an encounter, event, or stimulus (Anshel, 2000). In the next part of primary appraisal he or she evaluates the significance of the encounter. If an encounter is perceived as irrelevant, benign, or positive, it is not stressful and does not require coping. If a police officer cognitively appraises an encounter or event as either currently or potentially threatening, harmful, or challenging it is stressful and requires coping. Thus, the officer's cognitive appraisal strongly influences his or her perception of the stressor's intensity, importance and the strategy he or she chooses (Haarr & Morash, 2005).

Primary appraisal is influenced by psychological, sociological, well-being and contextual factors. The importance of the reciprocal relationship between these components is also emphasised in the Moos (1994) model. Psychological variables include values, objectives and self-regard. Sociological variables are ethnicity, cultural background, socio-economic status and gender. Contextual variables include aspects such as employment, family, money and socio-political variables. All these aspects play a significant role in the appraisal of the situation as well as in the coping process. If the stressor is perceived as harmful or threatening, the individual engages in the next phase of stress-handling called secondary appraisal that will be discussed in the following section.

2.8.2 Secondary appraisal

At this point the police officer considers the available coping options (Anshel, 2000). During secondary appraisal the individual assesses whether anything can be done about the perceived danger or threat, and what options are available (Lazarus & Folkman, 1984). If something can be done, the individual assesses what form of action can be taken. Secondary appraisal also includes individuals' evaluations of their coping resources and options available for dealing with the perceived challenge or threat (Lazarus & Folkman, 1984; Moos, 1986, 1994, 2002). While considering stressor appraisals, Haarr and Morash (2005) are convinced that the choice of a coping strategy is determined by the amount of personal control a police officer believes he or she has over the stressful situation.

Therefore, it seems that the personal, social and contextual variables mentioned in 2.8.1 play a role in determining the level of control a police officer has in a given situation.

To control the effect of stressors or challenges, literature underlines the fact that individuals follow different strategies while appraising a particular situation (Carver et al., 1989; Lazarus & Folkman, 1984; Moos, 1986, 1994, 2002). Lazarus and Folkman (1984) are of the opinion that coping has two important functions:

- To change or handle the stressor; and
- to regulate the emotional response to the stressor. In accordance with this postulate the coping responses are divided into problem- and emotional-focussed coping.

When considering the above, it appears that strategies can be categorised by approaching or avoiding strategies. The latter categories fall in the operationalisation of coping strategies postulated by Carver et al. (1989) that are relevant to this research. These strategies will be discussed in the next section.

2.8.3 Coping strategies

In the 1990's, researchers began to shift their focus from police officers' maladaptive coping strategies to understanding the variety of coping activities (e.g. problem-focused and emotion-focused coping) that police officers use to address stress at work (Beehr, Johnson & Nieva, 1995; Stephens, Long & Miller, 1997). Violanti (1993) for example found that police recruits drew on a wide array of coping strategies. He predicted that some of these coping responses could become either adaptive or maladaptive during occupational functioning. Furthermore, Violanti (1993) found that recruits experiencing high levels of stress used more coping strategies than those with lower levels, and they significantly more often used maladaptive (de-constructive) styles of coping. An additional finding by Violanti (1993) suggests the magnitude of stress is an important influence on the array of coping

techniques used to manage or reduce stress. No statements were made whether some of the respondents indicated that stress was seen either as a challenge or a threat via the use of coping strategies.

Haarr and Morash (1999) also focused on strategies among police officers with high versus low levels of stress. Both male and female officers were included in the research and their findings supported Violanti's (1993) findings mentioned above. As further supported by Haarr and Morash (1999), Violanti (1993) learned that police officers do not attempt to deal with stress and its sources step-by-step or by means of an increase in the number of coping strategies. Instead, they "give all they have." It was confirmed that officers with high levels of stress were significantly more likely to use escape strategies, express feelings of anger and hurt toward co-workers. Other strategies applied were trying to get co-workers to like them, keeping written records, relying on support from co-workers as well as superiors or family members in order to reduce stress. As mentioned in chapter 1 (see section 1.6.4) an instrument to measure coping strategies was developed by Carver et al. (1989). This instrument measures a variety of strategies that should be evaluated.

Coping strategies suggested by Carver et al. (1989) were adapted from the interactional model of stress and coping originally postulated by Lazarus and Folkman (1984) (see section 2.4.2.1). The latter two authors divided coping strategies into approaching and avoiding styles of coping. It can be argued that approaching strategies are constructive while avoiding strategies are de-constructive (Kleinke, 2002). Originally Carver et al. (1989) developed a multi-dimensional scale of 60 items to detect individual coping strategies. This dimensional scale was structured in accordance with the Lazarus and Folkman (1984) theory of problem-focussed and avoidant dimensions of coping strategies. For research purposes, these strategies were reduced to form the Brief COPE (Carver, 1997a) in which 28 of these strategies are reflected. The said strategies have significance for this research and will be discussed in the next sub-section.

2.8.3.1 Problem-focussed strategies

The first coping strategy described by Lazarus and Folkman (1984), as well as Carver (1997a), involves the attempt to understand and define a problem and to work out possible solutions without avoiding the challenge or threat of the stressor. It means that the individual attempts to control the situation, stressor or event. According to Kleinke (2002) it can also mean changing the situation or behaviours of others. In this regard problem-focussed strategies are also considered as “approaching” coping strategies (Haarr & Morash, 2005). The latter implicates that a police officer experiences or has to process intense, unpleasant, and/or threatening/challenging information that causes intense arousal. Once again the objective of problem-focussed coping is to control, to improve understanding, or to foster resourcefulness in dealing with sources of stress through either approach-cognitive coping (i.e. thoughts) or approach-behavioural coping (i.e. actions) (Anshel, 2000).

Problem-focussed, or approach-behavioural coping is typically used after an officer interprets (appraises) an encounter or event as highly stressful, threatening or challenging, and yet controllable. Furthermore, it involves reducing a stressful situation by physically interacting with the source of stress for the purpose of controlling the situation. Examples of controlling the situation by a police officer are obtaining information from or questioning a person, making direct eye contact, giving verbal or written commands or instructions, confronting or restraining others physically, drawing a weapon, attempting to catch a suspect, or making an arrest. While the above are more of a behavioural nature, they can also be of cognitive nature (Haarr & Morash, 2005). Examples of cognitive focussed strategies used by police officers are thoughts to manage the stressor or challenge, empower or improve one’s resources in dealing with perceived stress. Typical examples are planning, imaging or analysis to solve a challenging or threatening situation.

For the purpose of this research, Carver (1997a) distinguishes coping strategies which form

part of the overall category of problem-focused (or direct/approaching) coping. The latter include:

- Active coping which implies initiating direct action and increasing one's efforts. It also means that the officer concentrates on efforts to do something about the situation. The action can also be to make the situation better (Sanderson, 2004). Carver (1997a) operationalises active coping by using statements like "I've been concentrating my efforts on doing something about the situation I'm in", and "I've been taking action to try to make the situation better."
- Planning which refers to thinking about how to manage a stressor. This includes thinking hard about what steps to take to deal with a stressor or challenge (Sanderson, 2004). Statements like "I've been trying to come up with a strategy about what to do" and "I've been thinking hard about what steps to take" operationalise planning as a coping strategy (Carver, 1997a).
- Seeking instrumental support which includes consulting or approaching another person for advice in order to solve the threatening or challenging situation or event. It also refers to any attempt to obtain advice, or getting help and advice from others (Carver et al., 1989). This dimension is operationalised in statements such as "I've been trying to get advice or help from other people about what to do" and "I've been getting help and advice from other people" (Carver, 1997a).

With the above strategies the police officer actively applies actions or thoughts to address the threat or challenge. The above strategies can be regarded as most useful and situation-directed. However, coping strategies can also be inner-directed (Carver, 1997a; Kleinke, 2002) and emotionally focused. The afore-mentioned strategies will be discussed in the next part of the chapter.

2.8.3.2 Emotion-focused strategies

To be "emotional" in police work reflects a tendency for weakness, femininity, as well as unwanted and undesirable characteristics in an occupation that is traditionally seen as masculine in nature (Martin, 1999; Miller, 2000). Emotions are regarded as unwanted influences that deflect police officers from the path of objectivity and professionalism. They are regarded as forces to be controlled and hidden by police officers, if not eliminated through training, socialisation, and supervisory practices (Martin, 1999). Police recruits are expected to repress emotional displays, and therefore should respond to dangerous situations in ways that impair emotional identification and reaction. Furthermore, recruits are taught to conform to the "norm" of solidarity, teamwork, toughness, and stoicism when confronted with pain, fear, anger and tragedy. Thus, throughout an officer's career, the occupational cultural belief that displaying or communicating emotions while performing police duties is a weakness, that is periodically communicated to police officers (see Haarr & Morash, 2005).

In a very early study, Violanti (1981) found a positive relationship between stress and burnout symptoms, while respondents reflected an incongruity between real emotion and what is demanded in a police organisation. Violanti (1981) viewed stress as an affective response to a cognitive activity or response to a stressful encounter. In this regard it appears that Industrial and Organisational Psychologists have given little attention to the emotional component in job stress, and in particular in police organisations (Haarr & Morash, 2005; Muchinsky, 2000). It appears that the disguised emotions in police context are the consequence of irrational decision-making, child or spouse abuse, suicide, or drug and alcohol abuse. It would therefore be important to determine the strategies followed while experiencing stress or challenges. In order to operationalise these emotion-focused strategies, more attention should be given to Lazarus and Folkman's (1984), as well as Carver's (1997a) postulates in this regard.

In their coping literature, Lazarus and Folkman (1984), as well as Carver (1997a) suggest emotion-focussed coping as the second type of coping. This is orientated toward managing emotional drives. Anshel (2000) and Kleinke (2002) believe that individuals engage in emotion-focussed coping when a problem or challenge appears beyond their control. Emotion-focused strategies can also be considered as avoidance strategies when the police officer's coping strategies consist of thoughts that serve to distract, filter out, ignore, discount or physically distance him or herself from the sources of stress. These actions in turn serve to reduce or eliminate stressor related thoughts.

Emotional-focused strategies may help officers in the short term to mentally escape from the unpleasant after effects of a stressful event (Anshel, 2000). Over the long term they are often less effective than mental or physical confrontations with stress inducing sources (Anshel, 2000; Carver, 1997a). In this case an officer may avoid thoughts relevant to the stressor (e.g. avoiding negative remarks by the supervisor or public), avoiding an individual (e.g. avoiding a complainant in a criminal case by sending his colleague, or avoiding the supervisor), moving to the next task (ignoring cases reported earlier), or engaging in maladaptive strategies (e.g. drugs, alcohol, overeating, abusing family members). Carver (1997a) and Carver et al. (1989) operationalised various emotional-focused strategies that are discussed in the next section, for example:

- Seeking emotional support. In this case the individual approaches a friend, family member or even a colleague in order to deal with the stressor. Seeking emotional support may encourage someone to engage in a problem solving strategy. The Brief COPE Inventory refers in this case to "I've been getting emotional support from others" and "I've been getting comfort and understanding from someone" (Carver, 1997a);
- Positive reframing. Initially, the individual may not be engaged in problem-focused

strategies, but attempts to rethink the nature of the stressor in a positive way. In some instances the individual may see it as a challenge and deal with the stressor or event positively after reframing. Carver (1997a) operationalises this facet with items like "I've been trying to see it in a different light, to make it seem more positive" and "I've been looking for something good in what is happening";

- Acceptance. Although a stressor may be appraised as a challenge or a strain, the individual may respond by accepting the consequences of the stressor or event without actively engaging in any action (Carver, 1997a). This facet includes statements like "I've been accepting the reality of the fact that it has happened", and "I've been learning to live with it";
- Denial which is a defense mechanism identified by Freud (1900), as the first reaction of a person who often faces a threat or (uncontrollable challenge) by temporarily denying reality. By denying it, the individual may be better equipped to avoid emotions that would otherwise be overwhelming (Morris & Maisto, 2005); Carver (1997a) operationalised denial in terms of statements like "I've been saying to myself this isn't real" and "I've been refusing to believe that it has happened";
- Religion. Many people use religion as a way of coping with potentially stressful events, including medical problems, accidents, and problems with loved ones. Further, it seems that religious commitment may also lead people to rely on adaptive coping mechanisms. Many religions directly encourage healthy behaviour, such as abstaining from smoking, alcohol/drug use, and risky sexual behaviours (Sanderson, 2004). In terms of Carver's (1997a) inventory, religion is operationalised as a coping strategy through statements like "I've been trying to find comfort in my religion or spiritual beliefs" or "I've been praying or meditating"; and Humour which may help people cope with stressors by distracting them from their problems (Sanderson, 2004). It appears that humour as a coping mechanism is also associated with lower blood pressure (Lefcourt, Davidson, Prkachin & Mills, 1997). Carver's (1997a)

operationalisation of humour in stressful or challenging situations is reflected in statements like "I've been making jokes about it" and "I've been making fun out of the situation."

A third dimension of coping strategies suggested by Carver et al. (1989) and Carver (1997a) that has emotional implications, are discussed in the following paragraphs. They are categorised as "less useful" strategies by the authors.

- Self-distraction which can be regarded as a form of withdrawal from the situation by shifting one's mind to something else instead of engaging in self-destructive behaviour, like aggression (Morris & Maisto, 2005). In this case shifting the mind is a positive and realistic response, especially if one knows there is no solution to the stressor or challenge. Carver's (1997a) operationalisation of this facet is reflected in statements like "I've been turning to work or other activities to take my mind off things" and "I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping."
- Venting, which should be distinguished from catharsis (Bushman, 2002). In their venting hypothesis, Kennedy-Moore and Watson (1999) are of the opinion that expression of feelings is a healing and restorative process, while suppressing or hiding them is a danger to health. These authors further add that emotional venting is an important mechanism to "let emotions out" rather than "bottle them up." It appears that emotional venting refers mostly to the expression of anger experienced by an individual. Venting is considered to be a short term process to deal with daily hassles rather than long term significant events. Venting differs from catharsis in being closer in time to trigger events (hours rather than years), less severe (an argument rather than for example sexual or physical abuse) and with no reference to it having previously been suppressed, not dealt with, or inadequately processed, over a period of years. Catharsis in contrast applies to the reliving of significant

traumatic events, often from childhood, which have not been adequately processed and which are addressed during process of therapy (Bushman, 2002). It appears that the latter also refers to post traumatic stress events experienced by police officers, which is not within the scope of this research. Venting rather deals with the police officer's discharge of feelings in cases where an important suspect slipped out of arrest and the officer expresses his or her dismay about this event. In the Brief COPE Carver (1997a) operationalises venting by means of the following statements: "I've been saying things to let my unpleasant feelings escape" and "I've been expressing my negative feelings."

- Behavioural disengagement. According to Marsella and Gratch (2003) behavioural disengagement means that the individual abandons any action to deal with a stressor or challenge. Whereas mental disengagement refers to mental activities (e.g. daydreaming or sleeping) to take the mind off a problem, behavioural disengagement deals with the ceasing of actions. Carver (1997a) operationalises behavioural disengagement through statements like "I've been giving up trying to deal with it" and "I've been giving up the attempt to..."
- Self-blaming. According to Morris and Maisto (2005) self-blame sometimes takes place when it is not possible to identify or deal with the real source of a stressor, or challenge. For example, a police officer who blames him or herself when he or she and a colleague encounter a shooting incident and the latter is killed accidentally. Marsella and Gratch (2003) associate self-blame with neuroticism and depression and daydreaming. In another research, Sarafino (2002) detected self-blame in patients who blame themselves for their serious conditions like cancer and depression. They usually relate self-blame to their conditions. Sarafino (2002) is of the opinion that blaming others may relieve the effect of negative feelings, although it may change, into anger that is a possible negative outcome of a situation. Self-blaming was not part of the original COPE developed by Carver et al. (1989), but

was included by Carver (1997a), because his research revealed that many individuals engage in self-blame as a strategy. Self-blame is operationalised in the Brief COPE through the following statements: "I've been criticising myself" and "I've been blaming myself for things that happened."

- Substance abuse. It appears that individuals who do not have control over stressors or challenges and who run out of sufficient and effective coping mechanisms or strategies, engage in substance abuse as a way of getting rid of problems. Substance abuse includes alcohol and drugs (Carver, 1997a). Haarr and Morash (2005) confirm that police officers who fail to cope effectively usually engage in alcohol and drug abuse and even divorce and suicide. Violanti, Marshall and Howe (1985) are further of the opinion that alcohol and drug abuse became a culture in police organisations. This culture relates to the male-orientated nature of such organisations which places a high value on recreational drinking among a cohesive fraternity of officers for whom uniformity of behaviour and secrecy are normative. Carver (1997a) operationalises substance abuse via the statements " I've been using alcohol or other drugs to make myself feel better" and " I've been using alcohol or other drugs to help me get through it."

When considering the variety of coping strategies that individuals engage in from time to time, it can be expected that they eventually produce various effectiveness levels. The effectiveness of these strategies will be discussed in the next section.

2.8.4 The effectiveness of coping strategies

With reference to the afore-mentioned sections that explain the coping strategies as well as coping resources, it seems that not all are effective when dealing with stressors. It also confirms that coping patterns are difficult to determine, because they vary from individual to individual (Wissing & Van Eeden, 2002).

According to Zeidner and Endler (1996) research results consistently suggest that problem-solving strategies are associated with adjustment while emotional-focussed coping (like self-blame and expression of negative emotions), are associated with maladjustment. Emotional-focussed coping mostly includes avoidance-orientated fantasies and self-blame. It is further associated with depression (Zeidner & Endler, 1996).

A much earlier study of McCrae and Costa (1986) revealed that the most effective coping responses include seeking help, communicating feelings, taking rational action, drawing strength from adversity, using humour, maintaining faith, self-confidence, and feelings of control. These authors further advocate that least effective coping responses include hostility, indecisiveness, self-blame, and attempting to escape or withdraw from the situation.

Besides the above research, Folkman and Moskowitz (2000) emphasise the role of a realistic fit between the problem situation and a specific coping strategy. Lazarus and Folkman (1984) are evenly of the opinion that problem-focussed coping is more effective if the problem can be changed. Otherwise, emotional-focused coping can be regarded as more effective if the problem cannot be changed. Individual cognitive appraisal is important in the sense that it is expected that he or she can “fit” or adapt to the situation realistically. The two forms of coping complement each other. Ineffective coping appears when the individual appraises the problem incorrectly and applies the incorrect coping strategy (Folkman & Moskowitz, 2000).

Ayers, Sandler, West, and Roosa (1996) emphasise problem-focused coping strategies to be significant for intervention with HIV AIDS victims. They refer to activities that can improve problem solving, decision-making, communication and appropriate work related skills. Folkman et al. (1991) refer to the following constructive emotional focussed coping strategies: relaxation and meditation as well as cognitive re-defining of the problem

situation. Additionally, Folkman et al. (1991) are also optimistic about social support networks to improve coping skills.

Researchers (Halonen & Santrock, 1997; Holahan et al., 1996) maintain that specific coping responses should be seen in context with particular stressors. Key factors that may influence the effectiveness of specific coping strategies are time and controllability of stressors. In some instances it seems that avoiding strategies can be favourable. For example, denial by individuals who suffer from acute coronary heart problems, suggests positive medical outcomes in the short term (Holahan et al., 1996). However, in the long term it can lead to irresponsible behaviour with consequently more damage. In addition, it is also found that problem-focussed coping is associated with depression if the stressor is appraised as changeable. An avoidance-coping strategy, such as a search for alternative incentives, may have positive effects after uncontrollable events (for example after the death of a loved one). This is because the attention on negative feelings is diverted and new sources lead to satisfaction (Holahan et al. 1996).

It appears that some coping strategies in a police context are also more effective than others (Burke, 1998; Haarr & Morash, 2005). The latter (Haarr & Morash, 1999) found that officers who changed job assignments and took formal action were better able to decrease their workplace stress than those who used escape, co-worker support, and/or family support. In South Africa, changing job assignments may also be a solution for police officials, but with affirmative action implemented in almost any sphere of life it may be a frustration due to job reservations for previously disadvantaged officers (Hermann, 2000). Furthermore, for a police officer, escape coping strategies may reduce stress in the short term, but do not lead to problem resolution, and can actually increase stress over the long term (Haarr & Morash, 2005).

It seems that police officers cannot use escape strategies because of constant scrutiny by fellow officers, citizens or supervisors. When considering the afore-mentioned arguments,

it can be assumed that coping strategies such as distancing and planned problem solving reduces stress significantly, but escape/avoidance and self-control coping strategies appear to be insufficient, and relevant studies indicate a significant increase in stress levels among police officers (Haar & Morash, 2005; Hart et al., 1995).

As discussed in sections 2.8.3.1 and 2.8.3.2, Carver et al. (1989) and Carver (1997a) grouped several activities as adaptive/effective strategies. They are: active coping, planning, seeking instrumental support, seeking emotional support, positive reframing, acceptance, denial, religion and humour. Less useful strategies are listed by these authors as self-distraction, venting, behavioural disengagement, self-blaming and substance abuse. If Haar and Morash (2005) as well as Hart et al.'s (1995) afore-mentioned arguments with regard to coping strategies in a police context are considered, denial and humour will not be an effective coping strategy because of the "non-escape" opportunities of police work. In the same vein Parker and Endler (1996) also raise an opinion that search for social support is however a coping skill that mostly leads to less effective problem solving, especially when it is used for emotional ventilation and a delay in active problem solving. It seems that the latter strategy (seeking social support) would also be an ineffective coping strategy if used consistently.

Considering the above, it can be concluded that some coping strategies are effective while others are less or ineffective, and police officers will have to select a strategy that suits his or her work environment. Furthermore, an additional assumption can be made that police officers are in most instances excluded from a wide range of coping strategies due to the nature of the work environment as indicated above. A final remark can be made that some officers may use appropriate coping strategies vigorously, while others' health and well-being may be affected by the enduring effects of stressful situations. The reciprocal interaction among various components in dealing with stress or challenges as indicated by the Moos (1994, 2002) model will lead to a particular health outcome. As discussed, such an outcome will consequently be manifested in an individual's state of well-being.

Psychological well-being is the last component in the Moos (1994) model that is to be explicated in this chapter, therefore this important component will be discussed in the next section.

2.9 PSYCHOLOGICAL WELL-BEING

Health and well-being is the fifth panel described by Moos (1986, 1994, 2002) in his comprehensive model of work-related stress, coping and adaptation. This model is depicted in figure 1.3 (see chapter 1). The Moos (1994) framework emphasises the central mediating role of cognitive appraisal and coping responses in the stress coping process. The reciprocal interaction between every component in the model is indicated by the arrows in the schematic representation of this model (see figure 1.3 in chapter 1). The framework is built on the premise that the human being is playing an active role in the way his or her life is created. However, the model suggests that contextual factors (environmental system) may have an influence on psychological well-being.

In terms of the said model the individual's overall well-being is the outcome of how he or she is adapted in response to environmental stressors. As mentioned in chapter 1, well-being is a multi-dimensional phenomenon. Wissing and Van Eeden (2002) indicated that well-being is a multi-dimensional phenomenon and that such a phenomenon can hardly be investigated in terms of all its facets and manifestations in one single study. In a police context, Toch (2002) has also suggested that well-being is a multi-dimensional phenomenon. Wissing and Van Eeden (2002) suggested further that well-being should be investigated in a particular context.

Kerley (2005) has indicated that burnout is a syndrome which is the physical and emotional consequence of police stress. If the antipode of burnout is considered as a positive challenge to stressors, vigour is a positive consequence or outcome of such events and should be investigated in terms of its bi-polar nature (Kop et al., 1999; Shirom, 2003a;

Storm & Rothmann, 2003a). As a result of the bi-polar relationship between burnout and vigour (Shirom, 2003a, 2003b), these two phenomena are investigated in the next chapter from of a pathogenic as well as a salutogenic approach. Due to the length of this chapter. A summary is given in the next section, followed by a theoretical integration of all constructs and theories mentioned in the literature review of this chapter.

SUMMARY

In sections 2.7 and 2.8, life crises and transitions, as well as cognitive appraisal and coping responses were discussed as components (or panels) in the Moos (1994) model. Panels 4 and 5 were explicated in terms of general literature, as well as in cross-reference with police work situations. The fifth component or panel was briefly discussed as an outcome of the reciprocal interaction among the other four panels of the model. For the purpose of this research, vigour and burnout were demarcated as contextual outcomes of the stress and coping process within the Moos (1994) model, and in particular for this research.

The literature review in the above sections mentioned that acute life stressors differ from daily hassles in the work environment and that the former mentioned can worsen stress handling, if sufficient resources (either social or personal) are not available to an affected individual. While prolonged organisational stressors in police context tend to cause burnout, it was found that operational stressors in such a context and acute life stressors are actually the cause of post traumatic stress disorder (PTSD) which is not within the scope of this research.

Cognitive appraisal and coping responses were discussed as processes with several phases. Initially an individual perceived a stressor as a threat or a challenge. If it was appraised as a threatening situation, the individual considered available coping options and an appropriate strategy, or a number of strategies. Coping strategies were categorised as approaching or avoiding. During the approaching category, the individual confronted the

stressor or challenge and actively engaged in problem solving. In the avoiding strategies the individual avoided or postponed the effects of the threat or challenge. Approaching (problem-solving) strategies were regarded as the most effective ones, although they were in the minority.

The above sections were followed by a brief discussion on psychological well-being as a multi-dimensional phenomenon that should be investigated in a particular context in which it is observed or experienced due to its comprehensive nature. While this section represented a summary of sections 2.7 and 2.8, the following discussion constitutes an integration of the various components (panels) in the Moos (1994) model.

2.10 INTEGRATION: THE INTERACTION AMONG ENVIRONMENTAL FACTORS (STRESSORS), SOCIAL RESOURCES, PERSONAL FACTORS, COPING AND PSYCHOLOGICAL WELL-BEING

When considering empirical research literature, it seems that coping acts as a buffer between stressors and psychological well-being (Sarmany-Schuller, 2000). Researchers also place emphasis on the important role social support (e.g. parents, co-workers, family members and friends) as well as personal factors play when using coping strategies. Such research confirms the buffer effect of social resources between stress and psychological well-being (Holahan, Valentiner & Moos, 1994; Holahan et al., 1996; Jou & Fakada, 1995; Pierce, Strauman & Lowe-Vandell, 1999). The afore-mentioned findings therefore support the mediating role of coping in the stress and coping process as well as the influence on psychological well-being (vigour). However, Moos's (1986, 1994, 1997, 2002) literature argues that social resources can also be regarded as a cause or inducing factor of strain. The latter's arguments are also supported by literature in police context (Kerley, 2005; Loo, 2005). Therefore, there is still uncertainty which component is the most important in the stress and coping process. Is it social resources, or, is coping the most significant mediator between stress and psychological well-being? Or, are both equally important in the stress

and coping process?

When studying the dynamic interaction between components in the Moos (1994) model, literature produces overwhelming evidence of the influence stress has on individuals, either by threatening them or challenging them. Such an argument can be interpreted that people perceive stressors in the environment in particular ways that may have differing implications for individual health. There is however no direct research evidence proving that particular individuals, with certain personality traits, may attempt to change the physical environment from where threats or challenges come. If an individual indeed implements changes it can be regarded as a defense mechanism that does not relate to personality directly (Morris & Maisto, 2005). Examples of such defense mechanisms are positive illusions and self-deceptions (Pervin et al., 2005).

What is known, is that individuals apply techniques such as time management to ease workload that may be the cause of such threats or challenges (Sanderson, 2005; Sarafino, 2002). Further evidence suggests that organisations apply redesigning techniques to reduce uncomfortable or health threatening physical work settings. But it seems that no personality characteristics or traits can be attached to such changes, because they have to do with standard organisational procedures (Aamodt, 2004; Robbins, 2003). Despite some uncertainties in empirical evidence as mentioned above, an assumption can be made that the coping process is the most significant component in the stress handling process and that literature supports the fact that an individual in many instances adapts to particular situations via coping techniques (Carver, 1997a; Halonen & Santrock, 1997).

It can be assumed that environmental factors have an influence on an individual police officer's psychological state, depending on how it is appraised (Haarr & Morash, 2005; Moos, 2002). A positive appraisal of such an environment may reduce perceived stress. Simultaneously, an individual officer who is perceived as positive by others, may trigger others also to become positive about their environment, or threats or challenges within such

an environment. This argument supports the reciprocal relationship between an individual and his or her environment as suggested by Moos (1994, 2002).

It appears that personal factors such as demographic characteristics play some role in the coping process (Moos, 1994; Sanderson, 2005). Morris and Maisto (2005) are of the opinion that with increased age, adults become less self-centered and therefore apply coping skills more successfully. An older person may have the experience of turning situational factors around to his or her benefit as a counter to emanating environmental stressors. This can happen by applying constructive (problem-solving or approaching) strategies to overcome environmental threats. Some research proved that men and women respond similarly to the same circumstances (Morris & Maisto, 2005). Other research revealed that males and females respond to stress differently and use different coping strategies (Pitman, 2003; Taylor et al., 2000). In a particular study, women experienced more stress effects than men, but it was also found that caring for their jobs and children simultaneously, made coping more difficult than for men. The latter findings are also supported by police literature (Dantzker, 2005; Stevens, 2005).

In recent studies it was found that men in general as well as in police context, are turning more easily to alcohol than women during stressful situations (Nolen-Hoeksema, 2001; Van Wyk, 2005). Women in turn, tend to ruminate about the problem, revisiting negative emotions, as well as the events that led up to these emotions. Socio-economic differences, which can be categorised as personal factors (economic status) may also play a role in stress handling (Evans & English, 2002). Some data indicate that people in low-income groups cope less effectively with stress. Thus, stressful events have a harsher impact on their emotional lives. People in lower income classes often have fewer resources to cope with stress and other difficulties. Low-income people also have fewer people to turn to and fewer community resources to draw on for support during stressful times. Due to their low income status, people in such classes may have low self-esteems and they may doubt their ability to master difficult situations (Evans & English, 2002). Police officers with a low

income status may therefore reflect low self esteems and more vulnerability during environmental threats or challenges.

Research found some relationship between personality and psychological well-being (Carver 1997b; Sanderson, 2005). Indications are that coping can be influenced by personality, and in turn the outcome of such interaction eventually has an influence on psychological well-being (Hemenover, 2001; Holahan et al., 1996; Watson & Hubbard, 1996). People's personalities can influence the way they perceive stressful situations. For example, people who are high in hostility experience more frequent and severe daily hassles and major life events, and they report more conflict in their jobs, marriages, and families than those who are low in hostility (Sanderson, 2005). This includes hostile police officers who may find it difficult to deal with members of the public, and vice versa (Violanti, 2005). People who are high in optimism, hardiness and extraversion perceive potentially stressful life events as less threatening, perhaps because they tend to view such events as challenging as opposed to a threatening situation. Further, such individuals tend to focus on positive features of the situation (Hemenover, 2001). Police stress literature suggests that individuals scoring high on extraversion, agreeableness and conscientiousness have a more positive outlook on their work environments than those scoring high on neuroticism (Barrick & Mount, 1991; Larsen & Buss, 2005). Therefore, the former three personality traits predict healthier lives particularly in police work contexts.

Personality may influence the use of different coping strategies (Sanderson, 2005). People who are high in optimism, hope, hardiness, extraversion and internal locus of control use more adaptive and problem solving strategies for coping with problems, including acceptance, rational thinking, social support, and positive reframing. Such individuals use avoidance coping strategies less frequently, such as denial and behavioural disengagement (Drach-Zahavy & Stomech, 2002; Wiebe & Christensen, 1996). The latter findings are also supported by empirical research in police context (Dantzker, 2005; Violanti, 2005).

Personality factors influence individual health habits (Sanderson, 2005). A study in a military environment revealed that neuroticism was associated with fewer wellness behaviours, less accident control behaviour, and more traffic risk-taking behaviour. This included bad dental hygiene and driving under the influence of intoxicating liquor (Peterson et al., 1998). In contrast, people who are high in conscientiousness, optimism, and extraversion are more likely to be engaged in health-promoting behaviours, including taking vitamins, regular exercise, healthy eating, avoiding cigarette smoking and drugs, as well as safe driving (Scheier & Carver, 1992; Schwartz et al., 1999; Wiebe & Christensen, 1997).

Personality factors may influence people's physiological reactions to stress including immune functioning and cardiovascular response (Morris & Maisto, 2005; Sanderson, 2005). For example, people who have a pessimistic outlook on life or who are low in perceived control, have weaker immune systems and poorer DNA repair than those with a more optimistic view of the world, or those who are high in perceived control. Further, physiological reactions may also explain why people who are high in hostility tend to have worse health. Hostile people have consistently higher heart rates and blood pressure than those who are low in hostility. The latter usually show extreme cardiovascular reactions to stressful situations, and it takes longer for their bodies to return to normal functioning following a stressful interaction (Raikkonen, Matthews, Flory & Owens, 1999; Sagerstrom, Taylor, Kameny & Fahey, 1998). In the same vein, Violanti (2005) mentions that police officers scoring high on hardiness and extraversion are less prone to physiological reactions caused by stressors.

Personality factors may influence how much social support a person has. (Lepore, 1995). People who are hostile, neurotic and pessimistic may have trouble forming close relationships and may experience high levels of interpersonal conflict. The latter happens partly because they are likely to treat others in an antagonistic way. Individuals who are experiencing anxiety consistently, may make others feel uncomfortable and thus have few

social relationships. In line with this, people who are high in negative affect and those with Type A personalities have lower marital satisfaction. Furthermore, people who are low in hostility experience less stress when they have a friend with them, whereas people who are high in hostility do not show any benefit from the presence of such support. Strong social support may assist an individual to change the threatening events in the environment. With altered situations an individual may have healthier psychological and physiological health (Lepore, 1995). Larsen and Buss (2005) suggest that police officers who score high on openness have more social support, but are more prone to multiple sexual relationships that eventually cause marital problems.

As mentioned in section 2.8.3, cognitive style is a personality related construct. It is also a component in the Moos (1994) model, although not measured in the empirical research. The dynamics between cognitive style, coping and psychological well-being is, according to literature driven by personality, but still not unraveled by empirical research. Research usually refers to the reciprocal relationship between stressors, personality, coping and psychological well-being without explaining a direct involvement of cognitive style as a dimension of personality (Peterson, et al., 1998; Sanderson, 2005). It means that people with certain personality traits may engage easily in specific coping strategies. For example, extraverts engaging into problem-solving strategies (Larsen & Buss, 2005). According to Moos (1994), coping is a mediator between cognitive style and psychological well-being. A few studies investigated the relationship between cognitive style and psychological well-being (Scheier & Carver, 1992; Wissing & Du Toit, 1994). The research mentioned found that people who think constructively apply problem solving and active coping strategies. The nature of such reciprocal relationships is still unknown. A few studies however revealed direct relationships between cognitive style and psychological well-being (Epstein, 1992; Lightsey, 1996; Ursin & Erikson, 2004).

The afore-mentioned discussion mentioned the influences of personality on well-being. In

turn, environmental threats may have an influence on well-being and personality (Davison et al., 2003; Moos, 2002). In some instances stressors such as HIV, accidents and pollutants can cause mental retardation. Such a retardation is a further cause of personality changes. Further, an individual who suffers brain injuries due to accidents may become schizophrenic or epileptic.

An individual's health conditions can influence the way he or she responds to his or her environment (Violanti, 2005). Burnout literature refers to work stress that causes depersonalisation when exhausted by work overload, and eventual energy resources that become depleted. Although depersonalisation may be temporary in nature, it influences the individual's ability of constructive thinking and consequently the coping strategies he or she uses (Maslach, Schaufeli & Leiter, 2001; Schaufeli & Bakker, 2004; Ursin & Eriksen, 2004). Individuals who are not burned-out may respond vigorously to environmental challenges (Shirom, 2003a; Schaufeli & Bakker, 2004). To conclude this argument in police context, Violanti (2005) warns that police officers whose constructive thinking is disturbed by burnout, use alcohol or drugs as a coping strategy.

Well-being may not change a person's personality directly, but a person who suffers from anxiety or depression may avoid social interaction. A person who has experienced a traumatic event may develop a particular phobia (Davison et al., 2004). A healthy person may experience his or her environment or stressors as less stressful or harmful (Sanderson, 2005; Sarafino, 2002).

In sum, it appears that general literature exploring the dynamic interaction among variables for ordinary people are also applicable to police officers. Police officers are also threatened or challenged by the environment, also use coping strategies of which some are more or less useful. Furthermore, it also seems that stress outcomes are the same as for ordinary citizens. However, it appears that due to the nature of the job, police officers have less

supporting mechanisms and therefore carry a heavier burden in terms of emotional overload. Those who perceive their environments as a challenge act vigorously in accordance, but those who engage in an opposite affective state experience burnout.

Remark: The research objective to conceptualise and integrate the dynamics of individual vigour and burnout with special reference to stressors and coping processes in the police context was achieved in this chapter.

2.11 CHAPTER SUMMARY

Appropriate literature studies with regard to the components described in the Moos (1994) model were conceptualised and integrated. Stress was discussed as a trigger of a threatening or challenging situation in police context, and its relationship with psychological well-being was explored. Coping as a mediating process was discussed as well as the interaction between coping and psychological well-being. Various models were ultimately included in the analysis of the stress coping process. Attention was given to the effectiveness of the various coping strategies and insight was given to the reciprocal interaction between all the components suggested in the Moos (1994) model. The need to narrow psychological well-being to vigour and burnout as outcomes of the stress and coping process was emphasised. The following conclusions can be made with regard to literature studied in this chapter:

- The Moos (1994) model is a more integrated version of the stress- coping theory in comparison with the various other theories reviewed;
- The most general classification systems in literature reviews are those that distinguish between problem-focussed and emotional-focused coping strategies, approaching- and avoidance strategies, cognitive- and behaviour-coping strategies, social and anti-social coping strategies, direct and indirect coping strategies,

problem-focused coping strategies, as well as a search for social support and avoiding strategies;

- Most research reports are focussed on the coping process distinguished by how to prevent diseases, instead of promoting health;
- While focussing on the coping process itself, a need exists to conceptualise and integrate the dynamic interaction among dependent-, independent- and moderating variables of such a process. Furthermore, such an analysis should demarcate the stress and coping outcome in a single construct, or when expressing a difference between ill health and good health, do it in terms of two distinct constructs in a bi-polar relationship. A single construct or bi-polar relationship will give significance to the operationalisation of psychological well-being;
- None of the coping strategies described, can be regarded as most effective. However, it seems that the active self-supportive strategies such as planning and problem solving can be regarded as adaptive coping strategies, while avoidance and anti-social strategies should be seen as less adaptive. Research results of coping strategies demand a need for further research in this particular domain; and
- Coping effectiveness plays an important role in terms of individual, group and organisational adaptation to environmental pressures.

In the above chapter, attention was given to theories and models of the stress and coping process that constitute vigour and burnout as antipodes. It seems that no consensus exists as to how psychological well-being should be defined. However, for the purpose of this research, it was decided to conceptualise and operationalise psychological well-being in terms of the various dimensions of burnout as a negative experience of health, while vigour

and its dimensions represent an antipode of such experience. Whilst this chapter conceptualises the stress and coping process, the next chapter explains the stress and coping outcomes with special reference to vigour and burnout respectively.

CHAPTER 3

STRESS AND COPING OUTCOMES: VIGOUR AND BURNOUT

3.1 INTRODUCTION

The previous chapter focuses on the dynamic interaction between components as illustrated in the Moos (1994) model. It also explains the preliminary processes that lead to either vigour or burnout. The second literature objective of this research is to conceptualise vigour and burnout as outcomes of the dynamic stress and coping process. In this chapter vigour and burnout are conceptualised in terms of the research objective and opposite affective states in the stress and coping process. An integrative section integrates the dynamic relationship among the various components proposed by Moos (1994) in his model. Vigour and burnout form an extension of the said model. The chapter is concluded by a chapter summary.

3.2 VIGOUR

Vigour has long been the topic of literary expressions, artistic descriptions, as well as philosophical enquiries. The expressions such as “I feel energetic” or “I feel vigorous” appear widely in both lay psychology and narrative expressions of human activities in organisations (Shirom, 2003a). According to Church and Waclawsk (1998), a vigorous feeling is often associated with managerial effectiveness. As mentioned in chapters 1 and 2, burnout as a negative affect dominated research projects until positive psychology acknowledged the existence of positive well-being outcomes (Sarafino, 2002; Schaufeli & Enzmann, 1998). Eventually, burnout is often seen as an affective response to ongoing stress of which the core content is the gradual depletion over time of individuals’ intrinsic energetic resources, comprising of emotional exhaustion, physical fatigue and cognitive weariness (Shirom, 2003b; Shirom & Melamed, 2006).

Vigour has been defined in chapter 1 (see 1.6.4). In this section the focus is on the

antithesis of burnout, namely on individuals' feelings that they possess physical strength, emotional energy and cognitive liveliness. These three dimensions form a set of interrelated affective experiences called vigour (Shirom, 2003a).

Researchers (Russel, 2003; Shirom, 2003a) view vigour as a core affect attributed to one's work milieu. Authors (Shirom, 2003a; Strümpfer, 2003) consider a positive affective state as indicative of mental well-being. Representing such an affective state, vigour is simultaneously an indicator of psychological well-being. According to Shirom (2003a), vigour is an operational definition of well-being and therefore relates to positive emotions and moods (Fredrickson, 2005; Shirom, 2003a).

In section 2.10.3.1 the nature of emotions in the coping process was discussed. In this section the effect of *positive* emotions is considered. Together with vigour, cognitive psychologists acknowledge that emotion and mood can influence an individual's cognitive processes (Fredrickson & Joiner, 2002; Matlin, 2005; Shirom, 2003a). Positive emotion and positive mood represent object-directed and object-less versions of the same process (Russel, 2003; Shirom, 2003a). Nash et al. (1994) give more insight on the object-directed and object-less postulate of Shirom (2003a) and Russel (2003). It means that emotions are triggered by a particular event. For example, a student's excitement about passing an examination (object-directed), whereas mood is actually a reflection of sustained emotions. For example, failing a particular examination (object-less).

According to Shirom (2003a) emotion, which is a highly structured response to specific types of events or environmental interactions, gives rise to a characteristic of adaptive behaviour. This adaptive behaviour is relevant to the needs, goals, or survival of the organism. Emotion refers to basic responses such as fear, love, guilt or joy and other manifestations listed in chapter 2 (Gray & Watson, 2001; Shirom 2003a). A further characteristic of emotion is that it is short term focussed, intense, infrequent, and an adaptive response.

In contrast with this short-term response, moods refer to long-term and pervasive,

unfocussed, less intense, and continuous responses. Shirom (2003a) uses both these interactive responses (positive emotions and positive moods) as complimentary to an affective state. Whereas emotions grab attention and strengthen (or disrupt) ongoing activities, moods provide a background sense of positive or negative well-being (Kowalski & Westen, 2005). People can regulate emotions and moods. For example, fear or happiness can be expressed or inhibited.

When considering Lazarus and Folkman's (1984) definitions of cognitions and emotions as separable, but also joined and mutually affecting each other, Shirom (2003a) as well as Strümpfer (2003) propose emotions as relating to behaviour modification in order to survive. The primary functions or adaptive value of emotions are reflected in activities such as preparing for action, withdrawing from danger, or communicating with other members of the species. With the interrelatedness of vigour, positive emotions and positive moods, it seems that these components cultivate long-term adaptive benefits during the coping process.

Whereas vigour was considered as a psychological affective state, Ashby et al. (1999) provided a neuropsychological theory which assumes that positive feelings (affect) are associated with increased dopamine secretion. This postulate by Ashby et al. (1999) provides underpinnings for Fredrickson's (2001) theory by explaining the effect of dopamine on cognitive flexibility, performance on various cognitive tasks, and on creative problem solving. Fredrickson's (2001) theory refers to the value of positive emotions in physical health. A relatedness of vigour, positive emotions and positive moods, is confirmed in the physical strength of athletes and therefore further confirmation is rendered that vigour, and its related states constitute psychological and physical health (Stevens & Lane, 2005).

According to Shirom (2003a) vigour was measured in the past as a mood state that reflects a form of physical strength while such research ignored other personal resources that are interwoven with physical strength, like emotional and cognitive liveliness. Some authors propose vigour as a dimension of engagement that is a positive mirror-image of burnout (Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002;

Shirom, 2003a; Shirom et al., 2005). This postulate will be discussed in the next section.

3.2.1 Vigour and engagement

Initially, vigour was seen as a dimension of engagement (Schaufeli et al., 2002). Researchers on the burnout topic (Maslach, 1998; Maslach et al., 2001; Schaufeli et al., 2002) proposed engagement as representing the positive pole on a continuum that ranges from a state of burnout to a state of engagement. To illustrate the negative pole of the continuum, Maslach and her colleagues (see Maslach, 1998) constructed a measure, the Maslach Burnout Inventory - General Survey (MBI-GS) to gauge burnout as a syndrome that includes three dimensions. These dimensions are: exhaustion, cynicism and personal efficacy. Engagement, the positive counterpart of burnout in this case, is reflected in terms of three other components such as high energy, strong involvement and a sense of efficacy (Maslach et al., 2001).

Schaufeli and his colleagues (Schaufeli et al., 2002) view engagement and burnout as relatively independent of each other and therefore, accepting the bivariate view of positive and negative emotions. Schaufeli et al. (2002) define engagement as a positive-affective motivational state of fulfilment comprising three components or dimensions: vigour, dedication and absorption. Vigour refers to high level of energy, motivation to invest effort at work, and resilience, that is withstanding difficulties and persisting despite obstacles. Dedication refers to strong involvement in one's work accompanied by feelings of enthusiasm and significance. Absorption refers to a pleasant state of total immersion in one's work, like the sensation of time passing quickly and being unable to detach oneself from the job (Maslach et al., 2001; Shirom, 2003a). Schaufeli et al. (2002) made a contribution in redefining the three engagement components by establishing the discriminant validity of each relative used constructs in organisational context such as job involvement and job inefficacy. Engagement's bivariate relationship with burnout as suggested by Maslach and Leiter (1997) is criticised by Schaufeli et al. (2002) and Shirom (2003a, 2003b). A reason for such critics stems from Maslach and Leiter's (1997) usage of a single instrument, "The Maslach Burnout Inventory (MBI)," to measure both constructs with measurements and structures that differ.

Besides the doubt that exists about the bivariate relationship between engagement and

burnout (including the instrument that measures these constructs) all three dimensions of engagement, like the three dimensions of the Maslach Burnout Measure (as mentioned above), were not deducted theoretically and therefore the underlying rationale of their inclusion as a syndrome has yet to be elaborated (Shirom, 2003a). Vigour, like most other positive affects, facilitates goal-directed behaviour (Carver & Sheier, 1990; Shirom, 2003a) or approach behaviour (Fredrickson, 2002; Shirom, 2003b; Watson, 2002) and therefore could be expected to prompt individuals to engage with their job and work environments. Thus, Shirom (2003a) argues that engagement behaviour should be regarded as residing in a distinct conceptual domain that does not overlap with that of vigour. Several other internal states may function as signals encouraging individuals to engage with their environment, including positive emotions such as joy or contentment, sensory pleasures, optimistic orientation and courage (Kahn, 1992; Shirom, 2003a; Watson, 2002). Shirom (2003a) illustrates this point of contamination with a study conducted by Fry (1995) in which the latter found that optimists (a personality disposition), who expected gain or growth from their encounter with daily hassles, tended to engage more with the environment in comparison to the withdrawal and distancing from the work environment found among pessimists. Therefore, engagement can rather be considered as a personality characteristic that distinguishes between optimists and pessimists.

A further critic against engagement as an opposite pole of burnout, is that the components of engagement, as defined by Schaufeli et al. (2002), namely Absorption, appears to overlap considerably with presence at work, defined by Kahn (1992) to include the elements of being attentive, connected, integrated and focussed on work. Kahn (1992) developed a theoretical model in which psychological presence leads directly to engagement at work. This model further refers to energetic task performance, being innovative and creative at work, and expressing feelings and thoughts openly and freely (Shirom, 2003a).

Dedication, another component of engagement proposed by Schaufeli et al. (2002) seems to overlap with the major dimensions of job involvement, that is the extent to which a person identifies psychologically with his or her work and the importance of work

to one's total self-image (see Brown, 1996). Vigour, as defined by Schaufeli et al. (2002) incorporates considerable extraneous conceptual content in that, in addition to the core meaning of high energy level, it includes motivational elements such as willingness to invest effort and resilience (persistence during taxing events). The items used by Schaufeli et al. (2002) to measure their engagement scale "I am very resilient, mentally in my job," and "I always persevere at my work, even when things do not go well," most probably reflect evaluative judgments that could be a behavioural response to feeling vigorous at work (Davidson, 2003; Shirom, 2003a).

Local researchers (Rothmann, 2003; Storm & Rothmann, 2003a) also included engagement in their studies. They used the "Utrecht Work Engagement Scale (UWES)" instrument developed to measure engagement as an opposite pole of burnout (Schaufeli, Salanova, Gunzalez-Roma & Bakker, 2002). The purpose of the study was to determine construct equivalence and bias in different race groups. Structural equation modelling confirmed a three-factor model of work engagement, consisting of vigour, dedication and absorption. The authors however recommended that the instrument needs further construct validity research, especially in the South African as well as police context. While a tri-dimensional mirror image of positive and negative affect is important in the empirical part of this research, it needs to be mentioned that researchers (Britt, 2003; Britt, Castro & Adler, 2005; Downey, Wefald & Withney, 2007; Smith, Downey & Whitney, 2006) failed to replicate a three-factor structure of engagement as proposed by Schaufeli et al. (2002). Further, Smith et al. (2006) consequently found vigour a more convincing construct to assess work engagement.

As mentioned in various sections, vigour as proposed by Shirom (2003a) is included in this research, suggesting its own dimensions: physical strength, emotional energy and cognitive liveliness. The conceptualisation of vigour proposed by Shirom (2003a) avoids the uncertainty described above and is focussing on the positive core affect of vigour. In turn, the positive core affect of vigour forms the basis of the dimensions of the instrument included in this research, while the theoretical underpinnings of the Shirom-Melamed Vigor Measure (SMVM) (Shirom, 2003a) relate to Hobfoll's (1989) central dogmas of Conservation of Resources (COR). The COR theory coincides with the Moos

(1994) model. Therefore, the inclusion of the said instrument becomes a useful instrument for this research to measure the opposite pole of vigour (burnout) with the Shirom-Melamed Burnout Measure (SMBM) (Shirom, 2003b) which is also related to the COR theory. Vigour's relationship with the COR theory is discussed in the next section.

3.2.2 Vigour and Conservation of Resources (COR)

The origins of the COR model have been discussed in section 2.4.1 (chapter 2). This section explores the COR model's relationship with vigour. The central theme of the COR theory is that people have a basic motivation to obtain, retain and protect anything that are valuable to them (Hobfoll, 1998). The things that are valuable to people are called resources (Hobfoll, 1998; Shirom, 2003a; Shirom et al., 2005). As mentioned in section 2.4.1, there are several types of resources. It includes material, social and energetic resources. In general, resources are those personal energies and characteristics, objects and conditions that are valued by individuals or that serve as the means for attainment of other objects, personal characteristics, conditions or energies (Carver & Scheier, 2002; Holahan, et al., 1996; Parkes, 1994; Shirom, 2003a; Shoda & Mischel, 1998).

Resources can also be external (Shirom, 2003a). They are: employment, social support and economic status. According to Shirom (2003a) the construct of vigour relates to energetic resources only, namely to physical, emotional and cognitive energies. Furthermore, as pointed out by Fox and Spector (2002), vigour represents an affective state that individuals attribute to their job and workplace when asked about it and do so spontaneously (Shirom, 2003a). This affective state is in contrast with emotional traits like positive affectivity that refers to the tendency to experience a positive affect across situations and times (Fox & Spector, 2002; Shirom, 2003a, 2004).

Shirom (2003a, 2003b) gives three reasons why vigour is conceptualised by these dimensions. Firstly, these forms of energy are individually possessed. The COR theory predicts that these three dimensions or factors are closely interrelated (Hobfoll & Shirom, 2000; Shirom 2003a). The COR theory's stance is that personal resources

affect each other and exist as a resource pool, and that an expansion of one is often associated with the other being augmented. This interactive relationship between personal resources, as suggested by Hobfoll (1998) support the dynamic nature of the Moos (1994) model. Furthermore, the three forms of individually possessed energy included in the conceptualisation of vigour, represent a coherent set that does not overlap with any other established behavioural science construct, like resilience or potency, or any aspect of the self-concept, such as self-esteem and self-efficacy (Shirom, 2003a). The third reason for including the said factors into the conceptualisation of vigour, is because vigour clearly differentiates from consequences like engagement, job involvement or resilience (Shirom, 2003a).

A significant point made by Shirom (2003a) is that an individual's expression of "feeling vigorous" most probably relates to one's appraisal of relevant job demands and available coping resources, as proposed in the Lazarus appraisal theory (Lazarus, 1999) and Carver and Scheier's (1998) theory of regulated behaviour, by assessing one's pace toward goal attainment. It can be assumed that someone who is experiencing life vigorously may be engaged in regulated behaviour towards goal attainment and that such individuals are continuously in contact with his or her inner system by appraising the life energies available for day-to-day functioning. An individual who is experiencing life vigorously, may reflect pleasure (Shirom, 2003a). This argument is discussed in the next section.

3.2.3 Vigour and pleasure

According to Shirom (2003a) an individual may derive sensory pleasure from any activity. It includes listening to music or engaging in sport activities. Vigour and the above sensory pleasures share a positive feeling that accompanies physiological changes. However, vigour and any of its components does not depend on pleasurable body stimulation, such as engaging in sports activities or listening to stimulating music. There is a difference between someone who enjoys sport activities and someone who enjoys pleasurable work events. In the case of an individual who solves a client's problem or any other work related problem, they may appraise these situations in such

a way as to develop feelings of emotional energy, cognitive liveliness, or physical strength regardless of any pleasurable body stimulation (Shirom, 2003a). When evaluating Lazarus's (1999) emotion theory, Shirom (2003a) is convinced that individuals' positive emotional reactions follow their appraisal of the situation as personally meaningful, and probably beneficial. Thus, the difference between person who experiences sports exercises as pleasurable and one that enjoys to solve a problem in the work situation, is that in the case of the first mentioned, the individual's pleasure emerges as a result of physiological changes such as endorphin secretion, while the latter's pleasurable experiences induce positive mood states. Therefore, the pleasure experienced by an individual is a reflection of a positive mood state which is a characteristic of vigour (Fredrickson, 2002; Shirom, 2003a). Further, it is argued by Russel (2003), that if vigour can be placed on a two dimensional space, its position will be midway on a dimension of arousal and a dimension of pleasure (Shirom, 2003a).

Although not incorporated in cross-studies, Shirom (2003a) is of the opinion that vigour relates to neighbouring constructs. With "neighbouring" he means that, vigorous individuals are also experiencing other things that do not necessarily overlap with vigour itself. It can be seen as life experiences manifested in individual vigour or an opposite affective state. These neighbouring constructs are discussed in the next section.

3.2.4 Vigour and related constructs

Although not overlapping, it seems that vigour relates to some neighbouring constructs (Shirom, 2003a). Neighbouring constructs, refer to *self-efficacy*, *potency* and *learned resourcefulness*. Whereas self-efficacy is an important aspect of personal control, both Sarafino (2002) and Sanderson (2004) draw a link between health and self-efficacy. People who have a strong sense of self-efficacy for a given behaviour are likely to exert considerable effort to perform that behaviour. For example, a person who has great confidence in his or her ability to stop smoking, may try harder to resist offers of cigarettes from friends. A further remark made by Sanderson (2004) is that people with low self-efficacy have greater physiological responses to stressful situations (such as

making difficult changes in their behaviour), including higher heart rates and blood pressure, than those with high self-efficacy. Finally, people with high self-efficacy show a higher correlation between knowledge and behaviour. They are more likely to act on their knowledge, for example, to eat healthy foods and do frequent exercises if they understand that healthy foods and exercise is good for them (Sanderson, 2004). To sum-up the self-efficacy postulate of Shirom (2003a), it can be expected that an individual who is vigorous at work also reflects a belief of self-control, a sense for success and engages in healthy behaviour, and simultaneously, a healthy lifestyle (Sanderson, 2004; Sarafino, 2002; Shirom, 2003a).

As far as potency is concerned, Shirom (2003a) argues that potency, as originally defined by Ben-Sira (1985), bears some similarities to that of self-efficacy because it refers to a person's belief in their own capacity and is explained by successful coping experiences in the past. It also includes components like commitment to the social environment and a perception of the social environment as basically ordered, predictable and meaningful. These additional components of potency relate also to Antonovsky's (1987) definition of sense of coherence (SOC), a life-appraising variable (Strümpfer, 2003). The SOC is a coping resource that is presumed to mitigate life stress by affecting the overall quality of one's cognitive and emotional appraisal of stimuli that impact on one, which is in turn presumed to engender, sustain, and enhance health, as well as strength (Strümpfer, 2003). A vigorous person therefore, can be expected to be one that has the confidence to cope with environmental demands (Shirom, 2003a).

Learned resourcefulness is the third neighbouring construct expected to relate to vigour (Shirom, 2003a). Learned resourcefulness has been defined as an acquired repertoire of behaviours and skills (mostly cognitive) by which a person self-regulates internal responses (such as emotions and cognitions) that interfere with the execution of target behaviour (Akgun, 2004; Rosenbaum & Jaffe, 1983). Learned resourcefulness includes four aspects: the use of self-statements to control emotional responses, the application of problem-solving strategies, the tendency to delay immediate gratification, and perceived self-efficacy. According to Rosenbaum (1990) learned resourcefulness does not influence an individual's perceived stress level, but it does influence an individual's

self-efficacy expectancy. Learned resourcefulness theory further suggests that people high in resourcefulness can minimise the negative effects of stress on their performance. Therefore, they can do better than low resourceful individuals under stressful conditions (Akgun, 2004; Rosenbaum, 1990). According to Shirom (2003a) learned resourcefulness strengthens individual self-control processes by involving one's skills and behaviours to complement the emotion-focused component of vigour.

The above sections explained the various constructs that relate to vigour. The next section investigates the work related predictors of vigour.

3.2.5 Work related predictors of vigour

As this research mainly focuses on work related behaviour, it is therefore necessary to investigate and explain the work related predictors of vigour, such as personality, work performance, job redesign, job roles, work group cohesion, and leadership. Shirom (2003a) is not sure whether dispositional factors may play a role in the levels of vigour experienced in the workplace. However, his opinion is based on research done by Brief and Weiss (2002) as well as others (Maslach et al., 2001; Shirom 2003b). These research reports lead to the assumption that those individuals who respond highly on the personality trait of extraversion (or positive affectivity) are more likely to experience vigour relative to those who respond highly on the trait of neuroticism. Shirom's (2003a) argument is further supported by earlier research conducted by Matthews, Jones and Chamberlain (1990) who confirm that the mood state of energetic arousal is related to extraversion. Similar research findings have been discussed in chapter 2 (De Neve & Cooper, 1998; Schaufeli, 2003a; Shirom, 2003a).

As mentioned in previous sections of this chapter, work-related emotional experiences result from peoples' appraisals of the on-going interactions with their job and work environments. Organisations therefore, do not have direct control over the emotional reactions elicited by employees. However, as mentioned in chapter 2 (see section 2.3) organisations are the work environments of employees and it is possible that employees' emotions can be regulated by prescribing, neutralising, buffering, or

normalising it. This can be done by means of job redesign or the imposing of multiple or conflicting roles, creating work groups or aligning leadership styles (Shirom, 2003a).

According to Berry (1998), job redesign is a motivational change programme intended to increase the inherent value of the job. By implementing such changes, intrinsic satisfaction is increased. Berry (1998) is convinced that vertical and horizontal designs can be implemented to make jobs more challenging and interesting. Following the rationale of job redesign, Shirom (2003a) expects vigour to be another mediator to employee organisational commitment and job performance.

Multiple or conflicting roles in an organisation can be a source of stress among employees. For example, an employee who must report to more than one superior in a matrix organisational structure. However, Shirom (2003a) is of the opinion that multiple or conflicting roles may create additional energetic resources. This may be useful if a climate of healthy competition is created (Berry, 1998).

By inducing cohesiveness in the work environment, groups provide a group spirit and a feeling of belongingness. In cohesive groups, members think in terms of “we” and group goals take precedence over individual goals (Berry, 1998). Brief and Weiss (2002) state that work groups tend to share emotions because of common socialisation experiences and common organisational features, norms and regulations that govern the expression of emotions, task interdependence, and the phenomenon of emotional contagion (Shirom, 2003a). According to Shirom (2003a) work group cohesion was found to predict vigour when it was measured as a mood state.

Leadership style may energise vigour (Shirom, 2003a). There are indications in literature reviews that leaders who feel energetic are likely to energise their followers (Brief & Weiss, 2002; Shirom, 2003a, 2004). With regard to the transformational leadership theory, Berry (1998) mentions that the focus is on an important social interaction. A transformational leader, which is a charismatic leader, is seen as having an extraordinary influence on the group. The transactions that occur between this leader and the subordinates is actually a transformation process. Furthermore, according to

Avolio (1999) transformational leadership comprises four key elements: idealised influence, inspirational motivation, intellectual stimulation and individualised consideration. Shirom (2003a, 2004) is of the opinion that an element like individualised consideration may be mediated by another variable, the experience of vigour. For example, individualised consideration by the transformational leader, as well as the expression of care and demonstration of empathy to followers by such a leader, enhances them into a higher level of perceived social support, inspirational motivation, and is likely to enhance or increases followers' self-efficacy and intellectual stimulation. The latter is a component of transformational leadership which consists of encouraging followers to think creatively and is likely to have a direct positive affect on cognitive liveliness, a component of vigour (Avolio, 1999; Shirom, 2003a).

A considerable part of Shirom's (2003a) postulate of work related predictors of vigour, is supported by Schaufeli and Salanova (2007). As suggested by Shirom (2003a) as well as Schaufeli and Salanova (2007) job redesign and leadership may optimise the emotional climate of teams and individuals. It may also enhance motivation. It confirms that vigour is not only an individual experience, but can also be optimised by the organisation and its leadership (Schaufeli & Bakker, 2004).

As far as work performance is concerned, it seems that "feeling vigorous" may generate a particular thought-action repertoire that expands activity, broadens the range of options, and promotes creative solutions for work-related problems (Shirom, 2003a, 2004). Research that confirms a direct relationship between vigour as a construct *per se* and work performance is hard to be found, but such a relationship has been confirmed in studies where vigour is incorporated as a dimension or component of another construct like engagement (Naude & Rothmann, 2004; Schaufeli & Salanova, 2007). In these studies, where vigour is a component or a dimension of another construct (like engagement), a positive relationship is detected between vigour and work performance. These arguments are also supported by studies that reveal the positive relationship between positive emotions and performance (Worline Wrzesniewski & Rafaeli, 2002). Such research reports confirm that performance is interwoven with emotion in organisational life. If the emotional route is followed, vigour has been linked

to several performance related behaviours, including enhanced creativity, more effective decision-making, sales-related pro-social behaviours, and the use of more successful negotiation strategies (Forgas, 1998; Shirom, 2003a).

In addition to the vigour-performance relationship postulate, positive causes of vigour are not manifested in the work situation only. It appears that employees who take positive experiences from work to home (or vice versa) exhibit higher levels of vigour, compared to those for whom there is no positive transmission between the two different life domains (Montgomery, Peeters, Schaufeli & Den Ouden, 2003). It has been proved that burnout crosses over from partners to spouses (Bakker & Schaufeli, 2000), then it is assumed that vigour can also cause contagion between work life on the one hand and family life on the other hand (Schaufeli & Salanova, 2007).

In section 3.2.1 it was mentioned that vigour as a positive affective state can be measured by the Shirom-Melamed Vigor Measure (SMVM) (Shirom, 2003a). The measuring of this construct with the said instrument will therefore be discussed in the next section.

3.2.6 Measuring Vigour

Before discussing the empirical measurement of vigour, its proposition as a positive affective state should firstly be evaluated. Conceptually, researchers regard affective states as representing obliquely related dimensions of the affective space rather than bi-polar dimensions (Cacioppo et al., 1999; Davidson, 2000; Shirom, 2004; Watson et al., 1999). Additionally, positive and negative affective states represent distinct components of general bio-behavioural and motivational systems, and are attuned to threat and aversion versus approach and nurturance, respectively (Cacioppo et al. 1999; Davidson, 2000; Shirom, 2004). Exceptions to the above opposite states appear primarily in highly stressful situations, because there is evidence of a coupling of negative and positive affects (Shirom, 2004; Reich, Zautra & Davis, 2003). It can therefore be assumed, that an individual may simultaneously score moderately on a positive as well as a negative affective scale and the coupling effect should be born in

mind when interpreting the Shirom-Melamed Vigor Measure (SMVM) (Shirom, 2003a).

As mentioned in section 3.1, Shirom (2003a) proposes emotional energy, physical strength and cognitive liveliness as dimensions of the vigour construct. The operationalisation of these dimensions are discussed in the following paragraphs commencing with emotional energy.

3.2.6.1 Emotional energy

The first dimension of the SMVM proposed by Shirom (2003a) is emotional energy. Literature on this topic is hard to find. However, earlier research revealed that emotional energy can be regarded as the capacity of a physical system to do work (Collins, 1993). Emotional energy proposes a state where an individual experiences an excessive amount of mental energy that is sufficient to deal with day-to-day activities (Collins, 1993). Furthermore, Collins (1993) is of the opinion that emotional energy is a single, specific and long-term emotion that is the main motivating force in social life. It counts in various situations. For example, it is manifested in love and hatred, investing, working or consuming, cult or waging war. Individually, emotional energy ranges from the highest heights of enthusiasm, self-confidence and initiative to the deepest depths of apathy, depression and retreat. Emotional energy seems to be an important element of effective coping (Halonen & Santrock, 1997; Shirom, 2003a) and it gives Shirom (2003a, 2004) reason to include it as an oblique dimension in the Shirom-Melamed Vigor Measure (SMVM) (Shirom, 2003a) as well as the Shirom-Melamed Burnout Measure (SMBM) (Shirom, 2003b). Shirom (2003a) operationalises emotional energy in the SMVM by means of the following statements: “I feel able to show warmth to others,” “I feel able to be sensitive to the needs of co-workers and customers,” “I feel I am capable of investing emotionally in coworkers and customers,” and, “I feel capable of being sympathetic to co-workers and customers.”

As mentioned above, emotional energy is not the only dimension of the SMVM, but also includes physical strength and cognitive liveliness. Therefore, physical strength is the next dimension that will be discussed and operationalised.

3.2.6.2 Physical strength

Physical strength is the second dimension of the SMVM proposed by Shirom (2003a, 2004). According to Newell (2002), physical strength enforces resilience while endurance increases with physical exercise. It means that people who are engaged in physical exercise automatically improve their abilities to deal with stressors. The latter argument is supported by Sanderson (2004) as well as Sarafino (2002). These authors agree that physical strength increases the individual's self-esteem and self-efficacy, and consequently, work performance. It can therefore be assumed, that physical strength may be a pillar for emotional energy and cognitive liveliness (Shirom, 2003a, 2004).

In order to operationalise the SMVM, Shirom (2003a) included five items to measure physical strength. It contains statements like "I feel full of pep", "I feel I have physical strength", "Feeling vigorous", "I feel energetic", and "Feeling of vitality." To conclude the discussions on the SMVM's dimensions, "cognitive liveliness" will be explained in the next section.

3.2.6.3 Cognitive liveliness

Cognitive liveliness is the third dimension included in the SMVM as proposed by Shirom (2003a). This dimension is also interrelated with physical strength and emotional energy (Hobfoll, 2002; Shirom, 2003a). Shirom (2003a, 2004) did not give a definition of cognitive liveliness and neither could a comprehensive internet search provide the researcher with a definition. However, according to Heise (1989) as well as Rashotte (2002a), cognitive liveliness is a behaviour expression of experienced positive emotion. Although this expression is not necessarily a verbal one, other people can observe cognitive liveliness as a human activity. It means that a person who does not reflect activity in the form of vitality, brightness or other positive emotional expression can be observed as passive, while experiencing anxiety instead. For research purposes, Shirom (2003a, 2004) proposed the following statements to operationalise cognitive liveliness as a dimension on the SMVM: "I feel I can think flexibly," "I feel I can think

rapidly,” “I feel I am able to contribute new ideas,” “I feel able to be creative,” and, “A feeling of flow.”

Technical aspects regarding the administration, interpretation, rationale and motivation for using the instrument, as well as reliability and validity aspects are discussed in chapter four. Due to this research’s focus on both positive and negative affects as explained in chapter 1, vigour’s oblique relationship with burnout will be explicated in the next section (Shirom, 2003a, 2003b).

3.3 BURNOUT

Almost simultaneously, two persons took the burnout research further from two different perspectives (Schaufeli, 2003). Herbert Freudenberger, a psychiatrist, represents the clinical approach of the “burnout syndrome” as a mental disorder that is mainly caused by personal characteristics, such as intra-personal conflicts, dysfunctional personality traits or cognitions, and wrong coping patterns. On the other hand, Christina Maslach, a social psychological researcher, represents the scientific approach that considers interpersonal, social, and organisational factors as the root-causes of burnout (Schaufeli, 2003). Ever since burnout became a buzz word in the American media, the first burnout measuring instrument, the Maslach Burnout Inventory (MBI) was published and a definition of burnout was formulated. Burnout is originally defined as:

“... a syndrome of emotional exhaustion, depersonalisation, and reduced personal accomplishment that can occur among individuals who do ‘people work’ of some kind” (Maslach & Jackson, 1984, p. 1).

The burnout metaphor was initially used in everyday language by professionals such as poverty lawyers, social workers, psychiatrists, teachers, probation officers, and hospice counsellors (Schaufeli, 2003). These professionals used it to denote their gradual energy depletion, loss of motivation and commitment that was often associated with a wide array of other physical and mental symptoms. Although twenty years of burnout research have passed by, burnout is still not recognised as a psychiatric diagnosis

(Schaufeli, 2003).

Burnout as a phenomenon became a concern in work environments, because in advanced market economies like the USA, Netherlands and the United Kingdom, the incidence of stress-related workers' compensation claims has risen sharply in recent years. In Japan, work-related excess fatigue is considered one of the major occupational health problems (Kawakami & Haratani, 1999; Schaufeli & Enzmann, 1998). Therefore, burnout at work can be regarded as a major public health problem and a cause for concern among policy makers (Shirom, 2003b).

As reported by Schaufeli (2003), cross-fertilisation between clinical practitioners and academic scholars in the United States of America is limited. He (Schaufeli, 2003) however experiences a better relationship between practice and academy in the Netherlands and Scandinavia, where collaboration between these fields is alive. In South Africa, several efforts have been made to close the burnout gap between practice and academia.

These efforts in South Africa emerged due to the political and economical changes since 1994 that burdened the South African society with increased incidences of stress, burnout and psychological symptoms among police officers. Therefore, several attempts have been made to understand these symptoms in South Africa (Basson & Rothmann, 2002; Wiese et al., 2003). Like overseas cases, researchers usually follow burnout and engagement theories and models proposed by Maslach (1998) and Schaufeli et al. (2002). Research projects were mostly conducted to confirm the bi-polar relationship between engagement and burnout scales under South African conditions. One study (Wiese et al., 2003) revealed that job demands (as stressors) are associated with exhaustion. Furthermore, passive coping strategies contribute to exhaustion and cynicism, while seeking emotional support led to lower exhaustion. In the same study, a positive relationship was also found between exhaustion and cynicism. An additional remark that can be made, is because of a lack of resources, active coping strategies, and not coping passively, seems to impact on professional efficiency.

Like vigour, Hobfoll's (1989) conservation of resources (COR) theory is the departure of the burnout model used in this research, and the measure the Shirom-Melamed Burnout Measure (SMBM) proposed by Shirom (2003b). A definition of burnout as seen by Shirom (2003b) is also given in section 1.6.4 of chapter 1. Shirom's (2003b) definition of burnout is seen as an individually experienced phenomenon. The COR theory that has a link to this phenomenon is also linked to the Moos (1994) model.

The conceptualisation of burnout, based on the conservation of resources (COR) theory relates to energetic resources only and covers physical, emotional and cognitive energies. The three dimensions of burnout, namely physical fatigue, emotional exhaustion, and cognitive weariness, are expected to be closely interrelated factors (Hobfoll & Shirom, 2000). These domains are obliquely related to vigour's three dimensions of emotional energy, physical fatigue and cognitive weariness. It should be emphasised that Shirom (2003b) as well as other researchers (Cacioppo et al., 1999; Watson et al., 1999) consider vigour's relationship with burnout as obliquely related instead of a bi-polar one.

Each component covers the draining and depletion of energetic resources in a particular domain (Shirom, 2003b). Like vigour, burnout is also related to the "Conservation of Resources theory." Such relationship will be discussed in the next section.

3.3.1 Burnout and the Conservation of Resources (COR) Theory

The theoretical underpinnings of the COR theory have been discussed in chapter 2 (see 2.4.1). In this section the COR's relationship with burnout is considered. Initially, COR was formulated at the individual level of analysis using social-psychological paradigms. It is in contrast with other known burnout theories that are formulated at the group, organisational unit, or organisational level of analysis (Bakker & Schaufeli, 2000; Garman, Corrigan & Morris, 2002; Shirom, 2003c). Thereafter, the COR theory was used to explain the theoretical links between burnout, mental and physical health.

According to COR (as postulated by Hobfoll, 1998), when individuals experience a loss

of resources, they respond by attempting to limit the impact of that loss, through energy conservation, which itself requires additional resource expenditure. When circumstances at work or otherwise threaten the ability of the individual to obtain or maintain the required resources, stress ensues. The COR theory further postulates that stress occurs in either one of the following three conditions: Firstly, when resources are threatened, secondly, when resources are lost, and thirdly when individuals invest resources and do not receive the anticipated rate of return (Shirom et al., 2005). In addition, the COR theory suggests that individuals strive to protect themselves from resource loss. Loss is more salient than gain, and therefore, employees are more sensitive to workplace stressors that threaten their resources (Hobfoll & Shirom, 2000). Furthermore, the stress of interpersonal conflict has been shown to be particularly salient in the burnout phenomenon (Maslach et al., 2001).

When applying the above notions to the relationships of burnout with mental health, Shirom (2003b, 2003c) argues that people feel burned-out when they perceive a continuous net loss, which cannot be replenished with the physical, emotional, or cognitive energy that they possess. Furthermore, the net loss cannot be compensated for by expanding other resources, or borrowing, or gaining additional resources by investing in existing ones. Burned-out individuals may exacerbate their losses by entering an escalating spiral of losses (Hobfoll & Shirom, 2000; Shirom & Melamed, 2006). They then may start manifesting symptoms of psychological withdrawal, like acting with cynicism towards and dehumanising those with whom they interact, and most probably even reaching an advanced stage of burnout, where the predominant symptoms are those of depression (Shirom et al., 2005).

It may be speculated that there is a time lag between stress and the feelings of burnout, but studies conducted by Schaufeli and Enzmann (1998) did not support such a postulate. Hobfoll and Shirom (2000) however discovered that the early stages of burnout are characterised by a process of depletion of energetic resources not available for coping with work-related stresses and other threatening demands. During these early stages, individuals continue to try to engage in active coping to prevent further losses of energetic resources and possibly replenish lost resources. Burnout may also occur

with a high level of anxiety, due to the active coping behaviours that usually entail a high level of hyper-activity (arousal). When these coping behaviours prove to be ineffective, the individual may give up, and engage in emotional detachment and defensive behaviours that may lead to depressive symptoms (Shirom & Ezrachi, 2003). Earlier studies (Burke & Greenglass, 1989; Cherniss, 1980) found that in the later stages of burnout, individuals behave defensively and display cynicism toward clients, as well as withdrawal and emotional detachment. These responses are actually coping attempts that have limited effectiveness and often serve to heighten burnout and problems for both the individual and the organisation in which he or she works (Shirom, et al., 2005).

In this chapter (and in chapter 1) it was mentioned that people who are exposed to ongoing stress situations may end up with impairment, and consequently in early retirement. Regarding burnout, the question may be: "What is the chronicity of burnout?" Several longitudinal studies have been conducted, some of which have considerable large samples, which revealed that burnout represents a continuous loss of resources that cannot be easily replenished (Bakker et al., 2000; Leiter & Durup, 1994; Toppinen-Tanner, Kalimo & Mutanen, 2002). In the above cases it was found that, regardless of the sample makeup, the cultural context, and the length of time of the follow-up survey, the phenomenon of burnout exhibits remarkable stability. It means that burnout attests to its chronic nature. Both Sanderson (2004) and Sarafino (2002) are convinced that stress and burnout are reciprocally related over time. Burnout symptoms will persist if stress persists. The question that may rise, is whether there is a relationship between depression and burnout. This question is explored in the next section.

3.3.2 Burnout and secondary symptoms

Burnout has secondary symptoms (Maslach et al., 2001; Schaufeli & Buunk, 2003; Schaufeli & Enzman, 1998; Shirom, 2003b). Schaufeli and Enzman (1998) are of the opinion that layman see symptoms like depression, anxiety and somatic complaints as burnout, whereas these symptoms are actually secondary to burnout. It means that these symptoms are not reflecting the syndrome itself (burnout). Considering the above, it can be argued that academics and therapists may identify the burnout syndrome among these secondary manifestations, but layman not. These symptoms are usually

not directly measured which is also the case in this research. However, the full impact on an individual's physical and psychological functioning is better understood when these symptoms are considered in the literature review. Therefore, the symptoms that relate to burnout are discussed in the next sections commencing with depression.

3.3.2.1 Burnout and depression

Depression is characterised by symptoms such as feelings of sadness, emptiness, hopelessness, helplessness and low energy (Shirom, 2003b). Low energy may give rise to the conjecture that burnout overlaps with depression (Schaufeli & Buunk, 2003).

According to Morris and Maisto (2005), depression is a mood disorder characterised by overwhelming feelings of sadness, lack of interest in activities, and perhaps excessive guilt or feelings of worthlessness. In contrast to vigour, people suffering from depression are unable to experience pleasure from activities they once enjoyed (Shirom, 2003a, 2003b).

Research by Berry (1998) and Morris and Maisto (2005) confirms that depression can differ in terms of severeness. In some instances it is "normal" to feel sad due to the death of a loved one. In more severe cases, depression can be more serious and such individuals may be bothered by suicidal thoughts, or may even attempt suicide. It can be assumed that people who suffer prolonged burnout eventually may consider suicide as a solution.

Several authors ascribe certain physiological disturbances of individuals suffering from burnout. Examples are diabetes mellitus (Bailes, 2002), type 2 diabetes mellitus (Melamed, Shirom & Froom, 2003), as well as hypertension and dyslipidemia (Beckman, Creager & Libby, 2002). These disturbances can cause depression. It can be assumed that burned-out individuals may present physiological complaints or symptoms, and the main components in diagnosing such individuals are psychological and physical exhaustion (Shirom, 2003b). To draw a broad distinction between burnout and depression, it is argued that burnout is a work-related phenomenon while depression

represents a social phenomenon, and that these phenomena are not one and the same (Shirom, 2003b).

Kahn (2003) maintains that classification systems such as the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (APA, 2000) ignores psychopathological symptoms within the work environment. Therefore, industrial psychologists should continue to seek a proper classification of burnout as a work-related phenomenon for recognition in all diagnostic spheres. Like depression, anxiety is another secondary symptom of burnout which is explored in the following section.

3.3.2.2 Burnout and anxiety

The relationship between anxiety (Bakker & Schaufeli, 2000; Leiter & Durup, 1994) and somatic complaints (Gorter, Eijkman & Hoogstraten, 2000) has been well researched. It was found that burnout may overlap with anxiety since high levels of emotional exhaustion may raise an individual's levels of anxiety in stressful situations and may weaken their ability to cope with anxiety (Shirom et al., 2005). Beehr (1998) relates anxiety to work situations and says that it results from a specific aversive condition that can be identified, for example, high anxiety levels experienced by business executives. Beehr's (1998) statement makes it easy for diagnostic purposes in the sense that a particular event can be identified as the cause of anxiety. Although anxiety can be related to work situations, it may turn into constant anxiety throughout life that forces individuals into avoidance coping behaviour. Two earlier studies have been conducted to investigate the relationship between anxiety and burnout. Winnubst's (1993) study of trait anxiety predicted each of the Maslach Burnout Inventory (MBI) components, while Turnipseed's (1998) research with both trait and state anxiety scales predict each of the MBI components as contributors to burnout, especially the emotional exhaustion component of the MBI. It can be accepted that anxiety may emanate from burnout in the work situation (Shirom, 2003b). It also appears that burned-out individuals do not only experience depression or anxiety, but also somatic complaints. The latter is investigated in the next section.

3.3.2.3 Burnout and somatic complaints

Research provides reason to believe that individuals may present somatic symptoms when burned-out (Shirom et al., 2005). Somatic complaints refer to subjectively reported health-related problems, such as circulatory and heart problems, musculoskeletal pains, and excessive sweating. Other examples are sleeping disturbances, recurrent headaches and gastro-intestinal problems, skin manifestations and peptic ulcers (Gorter, Eijkman & Hoogstraten, 2000; Heyns, Venter, Esterhuyse, Bam & Odendaal, 2003).

If stress is conceptualised in terms of a transactional process as suggested in this research, the irritable bowel syndrome and asthma can also be included in the list of somatic complaints (Sarafino, 2002). On an emotional level, irritability temper tantrums, avoidance of obligations and unwarranted paranoiac behaviour can occur. Furthermore, the sufferer withdraws from family and friends. Thus, at work, burnout and its related symptoms may affect work performance (Heyns et al., 2003). The next section therefore explores the relationship between burnout and performance.

3.3.2.4 Burnout and performance

It seems that researchers find it difficult to provide convincing evidence in support of burnout's negative relationship with work performance (Bakker et al., 2004). According to Shirom (2003b, 2003c) researchers attempted to link burnout to several negative outcomes. Like vigour, burnout leads to emotional contagion (Shirom, 2003a). An individual who suffers from burnout affects other individuals. The latter, which emphasises burnout on an individual level, can also be spread to organisational level. The open systems approach postulates that there is a dynamic interplay and interconnectedness among elements of any system, its subsystems, and within the more inclusive system. Parker and Kulik (1995) report higher turnover and absenteeism among organisational members. Therefore, an organisation's performance as a whole may be jeopardised. Maslach and Leiter (1997) revealed lower organisational commitment. Kop et al. (1999) report more use of violence against civilians by police

members. With further reference to burnout in police spheres, earlier research by Johnson (1991) revealed that female officers scored relatively high on emotional exhaustion, whereas males scored relatively high on depersonalisation. Despite the fact that no study relates burnout to actual job performance, Kop et al. (1999) concluded that emotional exhaustion and depersonalisation (dimensions on the MBI scale) are strongly related to stressors and work attitudes of police officers. A further expectation raised by Kop et al. (1999) is that a more cynical attitude towards civilians will influence the way police officers behave during interactions with the public.

Despite the above findings, the results that support a relationship between employee performance and burnout are still not convincing (Shirom, 2003b). Burnout measures were used to determine its relationship with performance. Schaufeli and Enzmann (1998) found that self-rated performance correlated weakly with the MBI emotional exhaustion scale with only 5% of the variance shared. Parker and Kulik (1995) reported that, after controlling for negative affect the performance of nurses was higher and their feeling of emotional exhaustion was rated lower both by the nurses themselves, and by their supervisors. Wright and Cropanzano (1999) used the Emotional Exhaustion scale (EE) of the MBI in a longitudinal design. This research's results reported a correlation of -0.27 between the EE scale and a one-item measure of global performance as assessed by supervisors of 52 social workers over a three-year period. Similar to the above, Wright and Bonnet (1997) learned that the EE scale predicted negative performance assessed by supervisors. After controlling individual variables such as age and gender among a sample of 44 human service personnel, the mentioned studies failed to find relationships between performance and the other two scales of the MBI, namely depersonalisation and reduced personal accomplishment. Such finding therefore give support to the importance of emotional exhaustion as a dimension in the burnout experience (Shirom, 2003b).

Recent research published by Bakker et al. (2004) could also not produce overwhelming evidence that burnout does not relate to low levels of actual performance. These authors speculate about the reason why it is difficult to prove such a relationship. They are of the opinion that the measuring instruments have used may be the reason why

strong relationships cannot be proved. Despite the lack of support for strong relationships between burnout and work performance, Bakker et al. (2004) pointed out that burnout entraps employees in a negative, vicious spiral in which they do not seek help or are not prone to strive for changes in their situation. Furthermore, as a result, such individuals continue to perform ineffectively. A last remark is that burnout reduces an individual's self-confidence in solving work-related problems. Considering the above, a final conclusion can be made that burnout may at least have an indirect influence on performance due to cognitive weariness experienced by such an individual (Bakker, Demerouti, Taris, Schaufeli & Schreurs, 2003; Shirom, 2003b). In order to determine the effects of burnout on individual employees, these effects should be measured. The next section deals with this aspect.

3.3.3 Measuring burnout

Certain researchers are of the opinion that the picture of health conditions is much broader if burnout is investigated together with its positive counterpart (Schaufeli et al., 2002; Shirom, 2003a, 2003b). Thus, due to a simultaneous salutogenic and pathogenic approach of health in the workplace, researchers began to pair positive and negative outcomes of the stress-coping process. Consequently, the instruments to measure these outcomes are also paired. Schaufeli et al. (2002) paired engagement with a burnout scale based on the Maslach and Jackson (1984) tradition. Resulting from an evolution of these constructs (engagement and burnout) and the theoretical problems detected by Shirom (2003a, 2003b) as already explained (see section 3.2.1), he paired the Shirom-Melamed Vigour Measure (SMVM) (Shirom, 2003a) with the Shirom-Melamed Burnout Measure (SMBM) (Shirom, 2003b) in order to measure and reflect the oblique relationship of vigour and burnout. Whereas vigour's dimensions were discussed in section 3.2.6, burnout's dimensions are operationalised in the following sections commencing with emotional exhaustion.

3.3.3.1 Emotional exhaustion

Emotional exhaustion is the negative counterpart of vigour (Shirom, 2003a, 2003b). This dimension refers to feeling too weak to display empathy to clients or co-workers and lacking the energy needed to invest in relationships with other people at work. As an antithesis of vigour, emotional exhaustion proposes a state where an individual experiences that he or she does not have sufficient mental energy to deal with day-to-day affairs (Collins, 1993). If an individual suffers from emotional exhaustion, he or she lacks emotional energy that is a single, specific and long-term emotion representing a de-motivating force in social life (Collins, 1993). Shirom (2003b) operationalised emotional exhaustion with the following statements in the SMBM: "I feel like my emotional 'batteries are dead,'" "I feel emotionally burned out in my job," and, "I feel emotionally fatigued." The second dimension of the SMBM is physical fatigue and is discussed in the next section.

3.3.3.2 Physical fatigue

Physical fatigue refers to feelings of tiredness and low levels of energy in carrying out daily tasks, like getting up in the morning to go to work (Shirom, 2003b). A lack of physical strength can decrease an individual's self-esteem and self-efficacy, and consequently work performance (Sanderson, 2004). It can therefore be assumed, that physical fatigue may also influence emotional energy and cognitive liveliness (Shirom, 2003a, 2004). Shirom (2003b) operationalises physical fatigue by the following statements in the SMBM: "I feel tired," "I feel physically drained," "I feel physically exhausted," and "I have no energy for going to work in the morning." Cognitive weariness is the third and last dimension that will be discussed in the next section as proposed by Shirom (2003b).

3.3.3.3 Cognitive weariness

Cognitive weariness is the counterpart of vigour's cognitive liveliness as proposed by

Shirom (2003a, 2003b). Cognitive weariness is a human activity and refers to feelings of slow thinking and reduced thinking agility. Cognitive weariness also lacks a reflection of vitality, brightness or any other positive emotional expression that can be observed as passive, while experiencing anxiety instead (Heise, 1989; Rashotte, 2002a, 2002b). Shirom (2003b) included the following statements to operationalise the SMBM: “I am too tired to think clearly,” “I have difficulty concentrating,” “My thinking process is slow,” and, “I have difficulty thinking about complex things.”

The dimensions of vigour and burnout discussed above are included in the empirical research and the measures they constitute are used in the formats as discussed above. Whereas this chapter explicated vigour and burnout as either outcomes of the stress coping process, the next few sections seek to integrate the dynamic interaction among components as proposed in the Moos (1994) model.

3.4 INTEGRATION: DYNAMICS BETWEEN VIGOUR AND BURNOUT, AS WELL AS COMPONENTS OF THE MOOS (1994) MODEL

This section integrates the reciprocal relationship between vigour and burnout as well as components of the Moos (1994) model. The first component that is integrated in this discussion, refers to environmental factors and the stressors that emanate from it.

3.4.1 Environmental system (stressors)

In chapter 2 it was mentioned that the individual has to function optimally in the workplace and anything that is experienced in this environment can be regarded as immediate threats or challenges to deal with. The stressors that individuals experience emanate from this environment and may have a positive or negative influence on their general health. When an individual is not on duty, his or her social environment may also have a positive or negative influence on his or her well-being (for example preparing for a wedding) (Morris & Maisto, 2005). Depending on the individual’s interpretation of his or her environment, he or she may respond vigorously, or may be

burdened by such an environment, and experiences prolonged burnout (Shirom, 2003a, 2003b, 2003c; Shirom et al, 2005). Sanderson (2004) argues that a stressful situation (like efforts to win a contract) may create positive experiences among individuals in the form of challenges. People who experience challenges with enthusiasm or energy, reflect a positive mood state which is typical of individual vigour (Shirom, 2003a). In the same vein, if the experience of stressors within the environment is negative, frustrating and enduring, a negative mood and burnout emanate from the environment (Shirom, 2003b, 2003c). While this section explains environmental implications, the next part deals with the role of social resources in the reciprocal stress and coping process.

3.4.2 Social resources

When evaluating stress in terms of a transactional process (Lazarus & Folkman, 1984; Moos, 1994, 2002) an argument about the existence of moderating factors is unavoidable (Levert, Lucas & Ortlepp, 2000). These moderating factors constitute the dynamics of individual vigour and burnout that are explained in this thesis (Moos, 1994; Shirom, 2003a, 2003b, 2003c). As proposed by the Moos (1994) model (see figure 1.3 in chapter 1), social resources play an important role as a mediator in the interpretation of life stressors that emanate from the environmental system, and also in the case of vigour and burnout (Shirom, 2003a, 2003b). A core component of vigour is conservation of resources (COR) proposed by Hobfoll (1998). Here the interplay is between the environment and personal resources. The vigorous individual utilises his or her social resources to overcome the challenges or threats out of the environmental system (Shirom, 2003a). Shirom (2003a) refers to internal resources as self-esteem, self-efficacy and optimism. The external resources Shirom (2003a) is referring to, are in line with social support and economic status. Social support as suggested by Shirom (2003a) can be broadened to the categories proposed by Winnubst and Schabracq (2003). The latter divide social support into several categories such as:

- Instrumental support (helping persons directly by doing things);
- Emotional support (giving care, love, sympathy);

- Informational support (giving information that can be used by the receiver for coping); and
- Appraisal support (feedback about personal functioning directed at enhancing self-esteem).

In the same vein burnout's relationship with social resources is a negative one (Shirom, 2003b). According to the COR theory, burnout emerges when individuals are either threatened with resource loss or actively lose resources. One of the corollaries of the COR theory is that stress does not occur as a single event, but represents an unfolding process wherein those who lack a strong resource pool, are more likely to experience cycles of resource loss. Eventually, burnout is likely to exist when individuals experience a cycle of resource loss over a period of time at work (Shirom, 2003a, 2003b). However, resource gain or loss is not the only variable that plays a role in the dynamic interaction between vigour and burnout components. Chapter 2 explicated the role of individual factors in the dynamic process. The next section is an integration of that discussion.

3.4.3 Personal system

In recent years, it has become increasingly clear that the tendency to perceive events and circumstances as stressful, ways of coping with them, and how failure and success coping is dealt with, depend in part on the characteristics of the person. These characteristics typically involve beliefs about the world and one's relationship with it, especially one's possibilities of dealing with it (Levert et al., 2000; Semmer, 2003).

Various individual variables which have one or another relationship with the environment's interpretation, have been identified (Levert et al., 2000). They are: individual differences like age, gender, years of service and personality traits (Semmer, 2003), locus of control (Rotter, 1966), self-efficacy (Bandura, 1977), positive and negative affectivity (Watson et al., 1999), self-esteem (Brockner, 1988), sense of coherence (Antonovsky, 1987) and hardiness (Kobasa, 1979).

Research considering biographic factors in vigour and burnout is not abundant,

especially in the case of the first mentioned (Heyns et al., 2003; Shirom, 2003a). However, it is expected that men would experience higher levels of vigour than women, since accepted norms associated with the masculine gender role emphasise strength, independence and invulnerability (Shirom, 2003a; Stanton, Parsa & Austenfeld, 2002). As vigour represents a positive affect experienced at work, certain organisational conditions can also be linked to conditions that stimulate job satisfaction (Shirom, 2003a). An American study revealed that demographic differences can play a moderating role in individual job satisfaction (Berry, 1998). Furthermore, most workers who are satisfied with their jobs are older, white, college-educated individuals who have more prestigious occupations and make more money.

In addition, Maslach (1982, 1998) found that burnout was mostly associated with younger employees. This correlation could be ascribed to the fact that those suffering from burnout choose to change careers. In a study conducted by Demerouti et al. (2000), age correlated positively with exhaustion and negatively with life satisfaction. In an earlier study conducted by Sears and Navin (1983) no significant correlation between years of service and the occurrence of burnout was detected. Research findings of Barber and Iwai (1996) support those of Maslach (1982) in the sense that, people in the middle group in terms of qualifications, are more susceptible to burnout than those with advanced or low qualifications. Maslach (1982) found the highest levels of emotional exhaustion among single persons and the lowest among married persons. Loo (2005) reports research results that indicate that married individuals are more prone to suicide due to a heavier stress load than single police members. Sears and Navin (1983) however, found no significant correlation between marital status and burnout.

Several research findings were published as far as the Five Factor (Personality) Model (FFM) is concerned (Mills & Heubner, 1998; Storm & Rothmann, 2003b). Mills and Heubner (1998) found that neuroticism is positively related to burnout, the antithesis of vigour. While applying the MBI as an instrument, Grundy (2000) found that neuroticism predicted approximately 21% of the variance in emotional exhaustion, 9% of the variance in depersonalisation, and almost 7% percent of the variance in personal accomplishment. According to these findings it appears as if a negative relationship

exists between extroversion and burnout. This finding is also confirmed by Storm and Rothmann (2003b). Shirom (2003a) suggests a positive relationship between extroversion and vigour. Higher levels of burnout are associated with low tendencies on agreeableness (Mills & Heubner, 1998). Schaufeli and Enzmann (1998) found that emotional exhaustion is positively related to neuroticism and openness, with depersonalisation which is positively related to neuroticism and negatively to agreeableness. The same study revealed that personal accomplishment is significantly related to neuroticism.

With reference to Rotter's (1966) locus of control theory, Carver (1997b) suggests that individuals with an internal locus of control perceive their environments to be more positive than externals. Internals eventually may be more involved in their environments and deal with it more vigorously (Shirom, 2003a). Externals are more vulnerable against the threats of stressors and may be prevalent to burnout (Carver, 1997b; Shirom, 2003b).

Self-efficacy, which is an individual's confidence about his or her abilities to mobilise motivation, energetic resources and courses of action, has been shown to influence an individual in which activities he or she engages (Shirom, 2003a). Self-efficacy is related to vigour and an individual who experiences high self-efficacy may execute a challenging task with high levels of energy, while low self-efficacy may suggest emotional exhaustion (Stajkovic & Luthans, 1998). The same argument counts for high and low self-esteem (Semmer, 2003). High self-esteem and high self-efficacy relate to a belief of resourcefulness and high or low levels predict vigour and burnout respectively (Semmer, 2003; Shirom, 2003a, 2003b).

Sense of coherence (SOC), which refers to the extent an individual deals with stressors or demands in life in terms of comprehensibility, manageability and meaningfulness, has a close link with the COR theory, and consequently also with vigour (Antonovsky, 1987; Heyns et al., 2003; Shirom, 2003a). Heyns et al. (2003) suggest a negative relationship between sense of coherence and burnout. A person with a high sense of coherence utilises resources in the coping process to overcome the threats raised by stressors. Semmer (2003) suggests that hardiness overlaps with sense of coherence and that

individuals high on hardiness should be able to deal more effectively with stressful aspects of life, and therefore form a buffer during the coping process. People with high responses on sense of coherence and hardiness, are able to mobilise effective coping resources in the face of tension and simultaneously predisposition one to move towards the health side of the health/disease (vigour/burnout) opposites (Levert et al., 2000).

Coping is a mediating process between stressors and the outcomes of the stress-coping process. During this process people select particular strategies in order to cope. As a result of coping strategies' importance during the coping process, the afore-mentioned warrant an integrative discussion in the next section.

3.4.4 Coping strategies

During earlier discussions (see section 2.8 in chapter 2) it was mentioned that individual differences, and in particular personality, as well as coping strategies are related, and that individual characteristics co-determine coping behaviours (Semmer, 2003). Such co-determinants are also drawn into this section with regards to their moderating effect on the coping process. People with particular characteristics are more resilient to stressful situations in the environment and may apply particular coping techniques, while others apply other techniques which may either be more, or less successful. Further, coping acts as a buffer between stressors and psychological well-being (Sarmany-Schuller, 2000). For the purpose of this research, psychological well-being is explained in terms of an oblique relationship between vigour and burnout.

During the coping process, the individual utilises personal resources (cognitive functioning) and social resources (friends, family or significant others), mediated by personal characteristics (personal factors such as individual differences) to interpret the environment (Moos, 1994). These mediating factors will also direct the way the individual copes. While personal and social resources, as well as individual differences can be a buffer and a predictor of vigour, the absence of these factors can predict the opposite, namely burnout (Semmer, 2003; Shirom, 2003a, 2003b; Shirom & Melamed, 2006). Whereas coping strategies have been customarily classified as specific methods

or precise objectives towards the way they are directed (Billings & Moos, 1981), studies (Plana et al., 2003) confirmed a relationship between coping strategies and burnout, as well as other consequences of occupational stress. For example, a statistically significant association has been found between coping with the avoidance type and burnout. A similar study by Chan and Hui (1995) reported that the greater the feelings of emotional exhaustion, the more likely these individuals were to use strategies coinciding with a passive form of coping, including strategies based on behavioural and mental disconnection from the situation. In the latter events, such individuals concentrate more on their emotions and venting feelings when faced with difficult or stressful events. Cheng (2001) concluded that both perception of control and objective controllability of stressors would play a key role in the achievement of effective coping. People who reflect control, predicts vigour, while those who feel they lose control express or experience burnout (Shirom, 2003a, 2003b). An earlier study by Pines, Aronson and Kafry (1981) found that active coping efforts, such as confronting the problem, were associated with lower levels of burnout (a reflection of vigour), while inactive efforts such as avoidance were associated with higher levels of burnout (Shirom, 2003a, 2003b). A review of 12 studies revealed that those who are burned-out cope with stressful events in a rather passive, defensive way, whereas active and confronting coping is associated with less burnout (Schaufeli & Enzmann, 1998).

On a more positive note, Rowe (2000) revealed that individuals using proactive strategies were more able to cope effectively with stressors, felt a greater sense of personal accomplishment and were less emotionally exhausted. Shaddock, Hill and Van Limbeek (1998) have found evidence for a link between the practice of religion (external resource), or having an ideology (internal resource), and lower burnout scores. In the same vein, Alsoofi, Al-Heeti and Alwashli (2000) also found a significant correlation between ways of coping and burnout. Koniarek and Dudek (1996) reported that social support is associated with less burnout. Like the research on personality, the relationship between burnout and social support varies, depending on the type of social support. Research in the workplace has shown that social support from supervisors is related to lower levels of burnout, whereas other sources of social support (e.g. from family, friends and co-workers) are less related to increased burnout (Heubner, 1994;

Ross, Altmaier & Russel, 1989).

The reciprocal relationship between personality traits and coping behaviour has been discussed in chapter 2 (see section 2.12) and does not need a replication in this section. However, the relationship between coping behaviour and the dimensions of the Five Factor Model (FFM) requires a brief discussion in terms of burnout literature. Literature reports with regard to the influence of coping on personality are rare. However, it is the opposite with regard to the FFM. Several studies suggest that those who are high in neuroticism are less likely to engage in problem-focussed coping strategies (Endler & Parker, 1990; Storm & Rothmann, 2003b). Instead, they tend to rely on emotion-focussed forms of coping, particularly ones that involve escape-avoidance and self-blame. Carver, Meyer and Antoni (2000) as well as Sheier, Carver and Bridge (1994) have shown that neuroticism is positively related to behavioural disengagement, mental disengagement, denial and the venting of emotions. These authors have also reported weaker negative correlations with active coping and positive re-interpretation.

Some researchers have found extroversion to be correlated only with emotional exhaustion and a reduced sense of personal accomplishment (Eastburg, Williamson, Gorsuch & Ridley, 1994; Mills & Heubner, 1998). Extroverts tend to engage in less avoidance and other maladaptive forms of emotion-focussed coping strategies (Bishop et al., 2001). Further, extroversion is related to social support-seeking. Extroversion is also related to problem-focussed coping and positive thinking (Amirkahn, Risinger & Swickert, 1995; Storm & Rothmann, 2003b).

With regard to openness to experience, researchers have concluded that openness has a relatively weak influence on coping responses and therefore does not increase or reduce the individual's vulnerability to burnout (McCrae & Costa, 2002; McCrae & Costa, 1986). Zellars et al. (2000) have found that among the Big Five personality factors, only neuroticism predicted the MBI's emotional exhaustion scale after controlling for the effects of socio-demographic and stress variables.

Researchers also reported findings on the agreeableness scale of the FFM (Hooker et

al.,1994; O'Brien & DeLongis,1996). Agreeableness showed relatively modest associations with support seeking, problem solving and positive reappraisal. Individuals scoring high on agreeableness were more likely to cope via seeking support and less likely to utilise other forms of emotion-focussed coping (e.g. avoidance). Those higher on agreeableness engaged in more support seeking and less confrontation than those lower on agreeableness.

O'Brien and DeLongis' (1996) research findings revealed that those higher on conscientiousness used significantly less escape-avoidance and less self-blaming strategies in coping with stressful situations than those lower on the said scale. Finally, Hooker et al. (1994) discovered that conscientiousness is associated with problem-focussed coping and less use is made of emotion-focussed coping.

In the police context, Bishop et al. (2001) found that avoidance coping was found to be positively associated with neuroticism and negatively related to conscientiousness. In the same research, problem solving was found to be positively associated with conscientiousness, while positive reappraisal was positively associated with extroversion, agreeableness, and openness. What should be mentioned is that these results were obtained from a sample of male police officers which may limit the generality of the findings. Vigour and burnout represent the outcomes of the stress and coping process. These two variables' reciprocal relationship with the other components of the research model are discussed in the next section.

3.4.5 Vigour and burnout

Vigour and burnout were discussed in sections 3.2 and 3.3 as a mirror image of each other. These dimensions can be displayed in a table for integration purposes. The opposite dimensions of these variables are depicted in table 3.1.

TABLE 3.1
OPPOSITE DIMENSIONS OF VIGOUR AND BURNOUT

Vigour	Burnout
emotional energy	emotional exhaustion
physical strength	physical fatigue
cognitive liveliness	cognitive weariness

Source: Shirom (2003a, 2003b)

Vigour and burnout may have either positive or negative effects on components of the stress-coping process (Shirom, 2003a, 2003b). A person who experiences vigour may engage into social relationships with others like family, friends or co-workers, while people who experience burnout may disengage in such relationships (Semmer, 2003). Although circumstances cannot change one's personality, due to exhaustion such an individual may withdraw from activities in the work- or social environment (Schaufeli & Buunk, 2003). Employees who experience either vigour or burnout may have an effect on his or her environment. One who experiences vigour may arrange his or her work environment for effective functioning and perceive it as challenging. Burned-out individuals may reflect avoidance which may be misinterpreted as anti-social behaviour. When individuals withdraw in the work situation group cohesion is negatively affected. This is illustrated by the "John Wayne" syndrome (numbness) that is observed among police officers suffering from burnout (Schaufeli & Buunk, 2003).

What should also be born in mind is that burned-out employees can cause job mistakes that may be dangerous to themselves or other employees. A further consequence of burned-out individuals is that they reflect feelings of dissatisfaction with their environment which is contagious to other employees. In case of individuals who experience vigour, the adverse can be expected (Schaufeli & Buunk, 2003). The theoretical underpinnings as explicated in chapters 1, 2 and this theoretical chapter raised some expectations for the empirical research in terms of the dynamic interactions as postulated by the Moos (1994) model. In the empirical research, the researcher is interested in the variation of participants' responses between the dimensions of vigour

and burnout respectively, as well as those variations reflected in the other constructs defined in chapter 1. Those responding low or high on the Organizational Police Stress Questionnaire (OPSQ) are compared with those responding high on the Shirom-Melamed Vigour Measure (SMVM), and those responding high on the Shirom-Melamed Burnout Measure (SMBM). Further, these variations are also compared with the various coping strategies as measured by the Brief COPE Inventory. Simultaneously, the moderating effects of social support (as measured by the Multidimensional Scale of Perceived Social Support - [MPSS]), including the moderating effects of individual factors, such as personality (measured in terms of the Five Factor model) and biographic characteristics are analysed in accordance with their variations.

During the above analysis it is expected that participants who respond low on the OPSQ are also responding high on the SMVM (vigour scale). In turn, those responding high on the OPSQ are also expected to score high on the Shirom-Melamed Burnout Measure (SMBM). Participants responding low on the OPSQ, and high on the SMVM (vigour scale) are also expected to score high on the problem-solving dimensions of the Brief COPE Inventory, while those scoring high on the OPSQ and the SMBM are also expected to score high on avoiding coping strategies. A further expectation is that high scores on social support and extroversion have a strong relationship with low scores on the OPSQ (and eventually with high scores on the SMVM). The converse is also expected in that low scores on social support and high scores on neuroticism have a strong relationship with avoiding coping strategies, high scores on OPSQ, and eventually on the SMBM. Due to the lack of literature support for convincing findings with regard to demographic characteristics, it is still expected that younger participants will reflect higher scores on the OPSQ, higher scores on the SMBM and also higher scores on avoiding strategies.

The above chapter concluded the dynamic interaction among the stress-coping components as suggested by the Moos (1994) model. The next chapter lays the foundation for the empirical research. This chapter is summarised in the next section.

Remark: In this chapter vigour and burnout are conceptualised as outcomes of the stress and coping process and simultaneously the second literature objective was achieved.

3.5 CHAPTER SUMMARY

Appropriate and valid literature studies with regard to vigour and burnout were explicated. Vigour and burnout were discussed as outcomes of the stress-coping adaptation process. Attention was given to vigour and burnout as constructs and the various theories that explain these phenomena, were also explicated. This chapter narrows psychological well-being from the general to the specific, from well-being to vigour and burnout. Vigour and burnout were depicted in terms of their oblique relationship. The following theoretical conclusions can be made with regard to literature studied in this chapter:

- Vigour and burnout seem to be consequences of the interaction among variables such as environmental factors, social support, personal factors and the ways of coping;
- Vigour and burnout appear to be phenomena that exist in work environments;
- Vigour and burnout affect individual well-being;
- The COR theory relates to vigour and burnout in terms of a theoretical underpinning;
- Vigour is related to positive mood states as well as constructs such as self-efficacy, potency and learned resourcefulness;
- Group cohesiveness, job re-design and energetic leadership styles are predictors of vigour in the work context;
- While depression is secondary related to burnout there is also a positive relationship between burnout and somatic complaints. Anxiety overlaps with burnout; and
- Five Factor personality traits such as extroversion and neuroticism are predictors

of vigour and burnout respectively.

This chapter summarises the stress and coping process with vigour and burnout as outcomes of such a process. Furthermore, the chapter provides an integration of the components proposed in Moos (1994) hypothesised theoretical model. The chapter is concluded with the empirical expectations raised by the literature reviews conducted in this and the previous chapters. The next chapter introduces the research methodology of the empirical study.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

The previous chapter conceptualises vigour and burnout as outcomes of the stress and coping process and simultaneously the second literature objective is achieved. The first empirical objective of this research, is to determine the dynamics of individual vigour and burnout and its reciprocal relationship during the coping process with critical variables as a suggested by the Moos (1994) model in terms of the South African Police Service as a research population. This chapter therefore deals with the said empirical objective. Furthermore, the chapter outlines the design, target population, measuring instruments, procedure and the hypothesis formulation.

Besides the above, the chapter deals with the first four steps of the empirical study as outlined in chapter 1. The chapter is concluded with a summary. The following section proposes the design for the empirical research.

4.2 DESIGN

As explained in chapter 1, the empirical research is of a quantitative nature. A cross-sectional survey design is used to achieve the empirical objectives. The survey technique of data collection is applied to gather information from the target population by means of questionnaires (Shaughnessy & Zechmeister, 1997).

4.3 TARGET POPULATION

A convenience sample is drawn from serving police officials. The sample accessible population is police officials attending in-service training at training centres in the South-

Western and Eastern regions of South Africa as part of their organisation's policy of continuous development. Level of organisational performance does not serve as a criterion to select trainees for these specific training programmes. Participants consist out of functional police officers and professional personnel to whom official ranks are allocated. Furthermore, they were expected have attended at least a basic police or induction training programme. Such members were selected and centralised for such training programmes on the basis of availability in terms of their respective police units' manpower plan. Secretaries, and those recruits who have not completed a basic police training yet, were excluded from the sample. The provinces of the Western- and Eastern Cape serve as the geographical boundaries of the sample. The remaining provinces of South Africa are excluded from the sample. The number of officials that took part in the data collection phase, is 505. Special permission was obtained to have access to the participants and to conduct the research in the police environment (see appendix "A"). Further, by means of a biographic questionnaire, the sample were divided to include all the cultural groups in the South African society. To conduct the empirical research, various instruments must be applied for this purpose. The appropriate instruments are discussed in the next section.

4.4 MEASURING INSTRUMENTS

This section discusses the measuring instruments that are applied in the survey. The instruments that are listed in chapter 1 are explained in this chapter in terms of its nature, interpretation, rationale and motivation for use, validity and reliability. A copy of the respective instruments is filed as an annexure in the thesis. The instruments are preceded with a research request note to invite participation in the research (see appendix "B").

All instruments utilised in this research, have been used before in other studies (Carver, 1997a; Goldberg, 1993; McCearly et al., 2004; Moos, 1994, 2002; Shirom, 2003a, 2003b; Zimet et al., 1988). Validity and reliability information are reported in this chapter for each instrument. However, in this research every instrument is subject to a confirmatory factor analysis in order to confirm the respective factor structures reported by original studies.

Internal consistency is also analysed via Cronbach alpha indexes in order to confirm the instruments' reliability. In order to analyse participants' characteristics in terms of a dynamic interaction with stress-coping factors, the biographical questionnaire is the first instrument to be introduced in the following section.

4.4.1 Biographical questionnaire

The questionnaire is in a structured format (see appendix "C"). Biographical information is recorded in English. The questionnaire collects data relevant to gender, ethnicity (e.g. black, white, coloured and Indian), rank, marital status, years of service and education. The following sections deal with the rationale, the motivation for using the instrument as well as the nature, administration and interpretation of the instrument.

4.4.1.1 Nature, administration and interpretation

The instrument reflects more than one scale type (Gregory, 2004). The items on the questionnaire are structured in terms of dichotomy, continuum, discrete single options, as well as discrete multiple options. The biographical questionnaire is a paper-and-pencil instrument (Gregory, 2004). It is a self-administered instrument. Verbal and written instructions are conveyed to participants. Biographic information is recorded prior to the use of other instruments in the empirical research. No time limits are imposed.

Participants' responses are summarised in terms of weighed items in the questionnaire (McCormick & Ilgen, 1989). Although individual responses can be compared with other individuals in the sample, individual responses are grouped in terms of mutual clusters.

4.4.1.2 Rationale of and motivation for application of instrument

The questionnaire supplies the researcher with a return of individual characteristics relevant to biographical variables of the sample. It is a cheap instrument and the data

collected by means of this instrument adds prediction value to the other instruments in use during the empirical research (Gregory, 2004). Furthermore, individual positions can be divided into contrasting groups for the purpose of cross-tabulations with critical data. Through cross-tabulations, assumptions can be made with regard to probability or chance. Such cross-tabulations supply the researcher with valuable information relevant to the various cultural and gender groups in South Africa, as well as the various age groups and tenure. Authors (Gregory, 2004; McCormick & Ilgen, 1989) agree that biographical data are reliable when individual respondents do not have a personal interest in the use of the questionnaire. Thus, reliability and validity aspects relevant to the biographic questionnaire are not discussed further in this chapter. The biographical questionnaire is followed by an instrument that measures stress levels. This instrument is discussed in the next section.

4.4.2 Organizational Police Stress Questionnaire (OPSQ) (McCearly et al., 2004)

The above instrument measures stressors in police environments (see appendix “D”). The following sections deal with the rationale, the motivation for using the instrument as well as the nature, administration and interpretation of the instrument. Discussions include validity and reliability aspects relevant to the questionnaire.

4.4.2.1 Nature, administration and interpretation

The Organizational Police Stress Questionnaire (OPSQ) is a Likert intensity scale ranging from 1 (“No stress at all”) to 7 (“A lot of stress”). An intensity of 4 represents “moderate stress” on the scale. The paper-and-pencil questionnaire is in a statement and self-administered format (McCearly et al., 2004).

It takes approximately four minutes to complete the questionnaire. The respondent is expected to circle how much stress the aspects listed in the questionnaire caused stress over the past six months. The questionnaire can be administered in groups or individually.

The instrument consists of 20 statements. The following items measure police organisational stressors:

Dealing with co-workers (OPSQ01); Feeling different rules apply to different people (OPSQ02); Feeling you always have to prove yourself in the organisation (OPSQ03); Excessive administration duties (OPSQ04); Constant changes in policy/legislation (OPSQ05); Staff shortages (OPSQ06); Bureaucratic red tape (OPSQ07); Too much computer work (OPSQ08); Lack of training on new equipment (OPSQ09); Perceived pressure to volunteer free time (OPSQ10); Dealing with supervisors (OPSQ11); Inconsistent leadership style (OPSQ12); Lack of resources (OPSQ13); Unequal sharing of work responsibilities (OPSQ14); If sick or injured co-workers look down on you (OPSQ15); Leaders overemphasise the negatives (OPSQ16); Internal investigations (OPSQ17); Dealing with the court system (OPSQ18); To be accountable for your job (OPSQ19); and, Inadequate equipment (OPSQ20).

Usually the questionnaires are checked and scores totalled manually. In this research, the questionnaire is analysed by a computer programme. Raw scores are converted in T-scores and a profile of each respondent's raw scores can be drawn. A total score is calculated for each respondent and raw scores are used during comparisons among other respondents.

4.4.2.2 Rationale of and motivation for application of instrument

There is a relationship between stressors generated in the police working situation and the police officers' health (Van Wyk, 2005). Stressors in police working areas are also regarded as different from other occupations (McCreary et al., 2004). The Organisational Police Stress Questionnaire (OPSQ) gives a quantified summary of the individual police officer's direct experience of stressors associated with organisational factors in the police work context. Summarised raw scores generated by this instrument can be correlated with other instruments used in this research. Due to the high validity and reliability ratings

demonstrated by the questionnaire (which are discussed in the next sections), the instrument assists the researcher to operationalise contextual police stressors in terms of the Moos (1994) model.

4.4.2.3 Validity

The OPSQ seems to demonstrate validity. McCearry et al. (2004) reports that the instrument clearly distinguishes between individuals who experience police activities as stressful and those who not have the same experiences. The instrument went through a four phase validity assessment process (McCearry et al., 2004). One study demonstrated construct validity by showing that the stress ratings of the OPSQ items were positively correlated with their frequency. Another study demonstrated discriminant validity by showing that the OPSQ is only partially correlated with self-perceptions of general stress, daily hassles and negative life events. These moderate correlations suggest that work-related and non-work-related stress co-occurs. In an additional study, concurrent validity was demonstrated when the OPSQ was correlated with lower levels of job satisfaction and more negative (and fewer positive) emotions about one's job (McCearry et al., 2004). The instrument was used in South Africa before in a correlation study with no investigation on the factor structure to evaluate the validity of the instrument (De Beer & Korf, 2004).

4.4.2.4 Reliability

It seems that the OPSQ also has a good reliability rating (McCearry et al., 2004). The 20 items on the OPSQ scale give a coherent whole of organisational stressors associated with policing. In a multiple validation study the instrument demonstrated highly reliable alphas of > 0.90 . Corrected item-total correlations between 0.40 and 0.60 were also reported. Thus, it can be assumed that the instrument demonstrated consistent results of various samples and populations. The Moos (1994) model suggests a mediating relationship between stressors and social support systems. Therefore, such an instrument is included in the next section.

4.4.3 Multidimensional Scale of Perceived Social Support (MSPSS)

Zimet et al. (1988) suggest that the MSPSS to measure social resources as a construct (see appendix “E”). Similarly to the instruments discussed thus far, the following sections deal with the rationale, motivation for using the instrument as well as the nature, administration and interpretation of the instrument. Discussions include validity and reliability aspects of the questionnaire (Zimet et al.,1988).

4.4.3.1 Nature, administration and interpretation

The MSPSS is a Likert-type intensity scale ranging from 1 (“very strongly disagree”) to 7 (“very strongly agree”). The paper-and-pencil questionnaire is in a statement and self-administered format. Each of the three sub-scales (i.e family, friends, significant other) is assessed with four items (Zimet et al.,1988).

It takes approximately two minutes to complete the questionnaire. The respondent is expected to identify and select the most appropriate value relevant to each statement that explains his/her perceived support from family (Fa), friends (Fr) and significant other (Sa). The questionnaire can be administered in groups or individually. The instrument has 12 statements. The codes MSPS01 to MSPS12 were allocated to the various items in the questionnaire for data transformation purposes. The following facets of the instrument determine the participant’s perceived family support (Zimet et al.,1988):

“My family really tries to help me” (MSPS03); “I get the emotional help and support I need” (MSPS04); “I can talk about problems with my family” (MSPS08); and, “My family is willing to help me make decisions” (MSPS11). The following sub-scale measures support from friends (Zimet et al.,1988):

“My friends really try to help me” (MSPS06); “I can count on my friends when things go wrong” (MSPS07); “I have friends with whom I can share my joys and sorrows” (MSPS09);

and, "I can talk about my problems with my friends" (MSPS12). The following sub-scale measures support from significant other (Zimet et al., 1988):

"There is a special person who is around when I am in need" (MSPS01); "There is a special person with whom I can share my joys and sorrows" (MSPS02); "I have a special person who is a real source of comfort to me" (MSPS05); and, "There is a special person in my life who cares about my feelings" (MSPS10) (Zimet et al., 1988).

Usually the questionnaires are checked and scores summed manually. In this research, the questionnaire is analysed by a computer programme. Raw scores are converted in T-scores and a profile of each respondent's raw scores can be drawn. A total score is calculated for each sub-scale and each respondent. Averages are used during comparisons among other respondents.

4.4.3.2 Rationale of and motivation for application of instrument

The Multidimensional Scale of Perceived Social Support (MSPSS) is a self-report instrument developed to explain how social support operates in the stress-coping relationship experienced by individuals. The instrument addresses the subjective assessment of social support which is in contrast with objective instruments. It was designed to assess perceptions of social support adequacy from three specific sources: family, friends and significant other (Zimet et al., 1988).

Although other scales contain items addressing these sources of support, most do not consider them as potentially separate, and distinguishes sub-groupings which is necessary for this research. Finally, the MSPSS is simple to use and not time consuming when subject time is limited and/or a number of measures are being administered at the same time (Canty-Mitchell & Zimet, 2000).

4.4.3.3 Validity

The MSPSS shown has been shown to be psychometrically sound with good factorial validity and adequate construct validity (Canty-Mitchell & Zimet, 2000; Zimet et al., 1988; Zimet et al., 1990). In the above studies factor analysis is used to determine the validity of considering different sources of support as distinct from one another. The above studies relied on exploratory factor analyses. Several Confirmatory Factor Analyses (CFA) were conducted to confirm the instrument's three factors (Family support, Friends support and Significant other) initially proposed by Zimet et al., (1988). The first study was executed by Cheng and Chan (2004), followed by the most recent one conducted by Duru (2007). All of these studies confirmed the three sub-scales initially developed. Although no local studies could be found, the above mentioned independent overseas' research reports confirmed the validity of the instrument. The local studies found where social support as a construct was dealt with, different instruments were used (Du Toit, 1999; Pretorius, 1994, 1996, 1997; Pretorius & Diedericks, 1993).

4.4.3.4 Reliability

Zimet et al. (1988) established both internal reliability and test-retest reliability of the MSPSS. Cronbach's coefficient alpha, a measure of internal reliability, was obtained for the scale as a whole as well as each sub-scale. For the Significant Other, Family, and Friends sub-scales, the values were 0.90, 0.87, and 0.85, respectively. The reliability of the total scale was 0.88. These values indicate good internal consistency of the scale as a whole and of the three sub-scales. In the same study the test-retest reliability of Significant Other, Family, and Friends sub-scales were 0.72, 0.85, and 0.75, respectively. For the full scale, the value obtained was 0.85. The consistency of the instrument was also confirmed by Cheng and Chan (2004) as well as Duru (2007). Whereas Duru (2007) found reliability indices of $\alpha > 0.85$ those of Cheng and Chan (2004) are 0.69, 0.78 and 0.76 for the respective sub-scales of Significant other, Family support and Friends support. However, the MSPSS demonstrated adequate stability over time and it can be regarded as reliable

for this research. As mentioned in 4.3.3.3, no local studies were found to compare indices with. The next section covers an instrument to measure personality in the empirical research.

4.4.4 Goldberg's (1992) Five Factor Inventory

To measure personality as a construct, the above instrument was used (see appendix "F"). The following sections deal with the rationale, the motivation for using the instrument as well as the nature, administration and interpretation of the instrument. Discussions include validity and reliability aspects of the questionnaire.

4.4.4.1 Nature, administration and interpretation

The Goldberg (1992) scale is a self-report paper-and-pencil instrument with five sub-scales as pointed out in chapter 2. Each scale consists of five bi-polar abbreviated descriptions of personality traits. The instrument is a nine-point Likert scale on which individuals indicate whether they "very" much agree, "moderately" or "neither" agree with an abbreviated statement that describes his or her personality traits on either side of the continuum represented on each facet of each sub-scale. In total, the questionnaire consists of 25 abbreviated statements. It takes approximately five minutes to complete the questionnaire.

The five broad dimensions (sub-scales) identified by Goldberg (1992) are: Introversion versus extraversion, antagonism versus agreeableness, lack of direction versus conscientiousness, emotional stability versus neuroticism, and closedness versus openness to new experience. The facets of each dimension (sub-scale) are listed and encoded as follows:

The five facets of the introversion versus extraversion sub-scale are:

- Silent versus talkative (IE01);

- Unassertive versus assertive (IE02);
- Unadventurous versus adventurous (IE03);
- Unenergetic versus energetic (IE04); and
- Timid versus bold (IE05).

The five facets of the antagonism (also known as pleasantness) versus agreeableness sub-scale are:

- Unkind versus kind (PA01);
- Uncooperative versus cooperative (PA02);
- Selfish versus unselfish (PA03);
- Distrustful versus trustful (PA04); and
- Stingy versus generous (PA05).

The five facets of the lack of direction (also known as dependability) versus conscientiousness sub-scale are:

- Disorganised versus organised (CD01);
- Irresponsible versus responsible (CD02);
- Impractical versus practical (CD03);
- Careless versus thorough (CD04); and
- Lazy versus hardworking (CD05).

The five facets of the emotional stability versus neuroticism sub-scale are:

- Relaxed versus tense (ES01);
- At ease versus nervous (ES02);
- Stable versus unstable (ES03);
- Discontented versus contented (ES04); and
- Unemotional versus emotional (ES05).

The five facets of the closedness versus openness to new experience sub-scale are:

- Unimaginative versus imaginative (CO01);
- Uncreative versus creative (CO02);
- Uninquisitive versus curious (CO03);
- Unreflective versus reflective (CO04); and
- Unsophisticated versus sophisticated (CO05).

The Five Factor personality questionnaire is completed together with the other instruments composed for the research. The raw scores are calculated for each sub-scale. The totals of each sub-scale place individuals on a particular position on the continuum represented by a personality dimension. Raw scores are used in this research and scores of each facet and dimension can be converted into t-values to compare profiles of each individual. A high or low score on each sub-scale is an indication of an individual's position on a particular dimension or facet.

4.4.4.2 Rationale of and motivation for application of instrument

The above instrument measures personality in terms of the Five Factor Model which can be considered as the most recent and comprehensive taxonomy of personality used in applied fields of psychology (Costa & McCrae, 2000; Goldberg, 1992). It is based on Goldberg's (1992) abbreviated structure of personality for research purposes, especially in case of long protocols.

Goldberg's (1992) Five Factor structure of personality is included in this research to investigate personality from a trait theoretical perspective, as well as to operationalise the Five Factor theory for research purposes. The factors included in the scale can identify individual strengths such as energetic, stable, unemotional and creativeness which place the emphasis on health conditions. Therefore, the scale creates opportunities for

investigations that cover both salutogenic and pathogenic paradigms.

4.4.4.3 Validity

Goldberg's (1992) Five Factor model seems to demonstrate good validity. The dimensions of the Five Factor model proposed by Goldberg (1992) were established through a process of three consecutive studies conducted by the developer. Factor correlations are reported for each dimension. Correlations of introversion versus extraversion are 0.97, of antagonism versus agreeableness are 0.93, of lack of direction versus conscientiousness are 0.95, of emotional stability versus neuroticism are 0.97, and of closedness versus openness to new experience are 0.91. Validity indices of this instrument in cases where it was used, are hard to find. The original instrument consists out of 100 items which are more in comparison with the 25 item instrument included in this research. The five sub-scales were validated in the 100-item format (see Goldberg, 1992) in which the five sub-scales were confirmed by a factor analysis. The item pool of the instrument is available on the Internet, and the instrument is used in various formats and mostly in a 50 or 100-item format (see Goldberg et al., 2006). Although the 25-item questionnaire was published by Pervin et al. (2005), no overseas' publications could be found to confirm validity of the 25-item format. However, the validity in terms of the five sub-scales of the comprehensive formats were confirmed several times after inception (see Goldberg, 1993, 1999; Saucier & Goldberg, 2002). The fact that local researchers usually employ the Big Five personality structure suggested by Costa and McCrae (1992) for research purposes (see Du Toit, 1999), local validity indices of the Goldberg (1992) are not available. However, the Costa and McCrae (1992) format is more comprehensive, but much more cumbersome to make it suitable for this research.

4.4.4.4 Reliability

Researchers report good reliability indexes for the Five Factor Model. The scales adapted from Norman (1963) demonstrate that 95% of the reliability coefficients were greater than

0.60, and 73% were at least 0.70 (Goldberg, 1990, 1992). The median scale obtained a coefficient of 0.76. Saucier and Goldberg (2002) mentioned indices varying between 0.85 and 0.93, which is high. Authors also report consistency for the Five Factor Model over period of time and through various cultures (McCrae & Costa, 1997; Soldz & Vaillant, 1999). It seems that the 50-item and 100-item variants' produce slightly different reliability indices as published by the International Personality Item Pool (IPIP). The 50-item format produces a scale reliability of $\alpha = 0.84$ while the 100-item format produces an alpha coefficient of 0.90 (see <http://ipip.ori.org/newBigFive5broadTable.htm>). As mentioned in 4.4.4.3, validity and reliability studies on the 25-format instrument are not readily available and it is assumed that this will also occur between the indices as mentioned above. The empirical research requires a measurement of coping strategies. An appropriate instrument is discussed in the next section.

4.4.5 Brief COPE Inventory (Carver, 1997a)

To measure coping strategies, the above instrument was used (see appendix "G"). Carver (1997a) suggested the above instrument when the measurement of coping strategies is considered. The following sections also deal with the rationale, the motivation for using the instrument as well as the nature, administration and interpretation of the instrument. Discussions include validity and reliability aspects of the questionnaire.

4.4.5.1 Nature, administration and interpretation

The Brief COPE is a 28 item self-report paper-and-pencil 4-point Likert intensity scale. The questionnaire distinguishes among 14 different coping strategies. An intensity of 1 represents "I usually don't do this at all". A statement with a value of 2 states "I usually do this a little bit." The third value represents a statement "I usually do this a medium amount", while the fourth value reflects a statement of "I usually do this a lot." A respondent chooses either one of the four statements (with varying values) which is the most appropriate (Carver, 1997a).

The respondent is requested to circle the value on each statement which is most appropriate at the point in time of the survey. The statements were described in section 2.8.3 and do not need duplication in this chapter. The 28 items in the questionnaire are chronologically coded from BC01 to BC28 for statistical analysis purposes. The Brief COPE scale consisting of the following sub-scales:

- Active coping (AC): The sub-scale measures attempts consciously applied by the respondent to reduce the effect of stressors;
- Planning (PL): Planning deals with a problem purposefully;
- Positive reframing (PR): The sub-scale measures the way an individual interprets a problem on a positive note;
- Acceptance (A): The sub-scale measures the way an individual accepts a problem as a reality;
- Humour (H): The sub-scale measures the way an individual applies humour to reduce the negative consequences of a stressor;
- Religion (R): The sub-scale measures the way an individual attempts to find meaning in religion in order to deal with a problem;
- Emotional support (ES): The sub-scale measures the extent to which an individual attempts to obtain social support from others in terms of moral support, sympathy and understanding;
- Instrumental support (IS): The sub-scale measures the degree to which an individual seeks information, assistance or advice in order to cope with a stressor;

- Self-distraction (SD): The sub-scale measures the degree to which an individual diverts his or her attention to other objects or activities in order to deal with the problem;
- Denial (Den): The sub-scale measures the degree to which an individual regards a problem as unreal;
- Venting (Vent): The sub-scale measures the way one expresses feelings and lives one's own life to counter the effect of a stressor;
- Substance use (Subs): The sub-scale determines the way an individual turns to alcohol or drugs in order to suppress the effects of a stressor;
- Behaviour disengagement (BD): The sub-scale measures the way an individual avoids any attempt to solve a problem; and
- Self-blame (SB): The sub-scale measures the way an individual blames him or herself for the existence of a particular stressor.

A raw score is calculated for every sub-scale by adding the values of responded items. High scores on a sub-scale can be interpreted in the sense that an individual is prone to use such coping strategy more frequently. Low scores indicate the converse in terms of a particular strategy.

4.4.5.2 Rationale of and motivation for application of instrument

The Brief COPE measures coping strategies since people may engage in one or another strategy when threatened by stressors (Carver, 1997a). The items in the questionnaire distinguish amongst various coping strategies. The Brief COPE is a reduced item format derived from the COPE scale (Carver et al., 1989) in cases where a research protocol is

too long.

In contrast with other coping instruments which are founded on an empirical basis, the majority of items on the Brief COPE are based on a theoretical basis. The latter relates to Lazarus and Folkman's (1984) model of coping which is also relevant to the Moos (1994) model. The Lazarus and Folkman (1984) model explains behaviour regulation during the stress-coping process. The scales that are empirically derived are: denial, acceptance and turning to religion. Although their origin is not primarily theoretical, it is possible to draw links from each of them to various kinds of theoretical principles (Carver et al., 1989; Lazarus & Folkman, 1984). Items derived empirically and theoretically are discussed in the next section. Those not indicated as empirically derived, are theoretical founded.

4.4.5.3 Validity

The Brief COPE scale demonstrated fair validity indices (Carver, 1997a; Carver et al., 1989). Since its first development stage, the original instrument (the COPE) went through several statistical analyses. The said authors developed an instrument that conceived coping in terms of 14 different sub-scales. The scales were subject to a factor analysis as well as a second order analysis. Two of them (mental disengagement and positive reinterpretation) were below factor loadings of 0.30. However, in a course of time, and due to high reliability indices, items representing these sub-scales were re-defined in order to align the factor structure. Because the original COPE scale consists of 60 items, the 28 reduced items in the Brief COPE heritages those sub-scales and items with the highest statistical values. Studies based on factor analyses produced taxonomies consisting of three (Bishop et al., 2001), four (Carver et al., 1989; Ferguson, 2001), and five (Sica, Novara, Dorz & Sanavio, 1997). Apart from finding a different number of factors, factor structures also do not replicate consistently across studies. Two local studies (Pienaar & Rothmann, 2003; Mostert & Joubert, 2005) report four factors that were retained by factor analyses respectively. The four factors retained in the first mentioned study were replicated in the latter study, namely approach coping, avoidance, seeking emotional support and

turning to religion. Despite the factors and items that were deleted in the validation process, it can be argued that the instrument is valid to be employed in this research.

The instrument also demonstrates discriminant validity (Carver et al., 1989). Correlations with personality variables were not overly strong. Further, COPE scales were not strongly correlated with the social desirability scale included in the above study. Finally, the COPE scales were also unrelated to another measure of coping styles that detects monitoring and blunting.

4.4.5.4 Reliability

Despite the fact that the scales are only two items each, their reliabilities all meet or exceed the value of 0.50 regarded as minimally acceptable. All items exceeded 0.60 except for venting, denial, and acceptance. The reliability indexes of the sub-scales thus vary between 0.50 and 0.90. A summary of each sub-scale's index is as follows:

Active coping (0.68), planning (0.73), positive reframing (0.64), acceptance (0.57), humour (0.73), religion (0.82), emotional support (0.71), instrumental support (0.64), self-distraction (0.71), denial (0.54), venting (0.50), substance use (0.90), behavioural disengagement (0.65), and self-Blame (0.69). Although some of the scales' reliability indexes are somewhat low, Smit (1986) is of the opinion that in the case of the evaluation of group performances, a reliability index of 0.50 is acceptable, whereas the reliability index of individual performance should be on 0.94. The alpha coefficients reported in the above local validation studies (Pienaar & Rothmann, 2003; Mostert & Joubert, 2005) ranged between $\alpha = 0.83$ and 0.92. Indices reported in the study mentioned were more or less the same.

Evidence of the test-retest reliability of the various scales came from two samples obtained in the initial development of the COPE scale (comprehensive version). Eighty nine students completed the original scale in an initial session and again eight weeks later. Another

sample of 116 students completed the nearly final version of the item set over an interval of six weeks. The test-retest correlations suggest that the self-reports of coping tendencies measured by the COPE are relatively stable (Carver, 1997a).

The next section entails the measurement of the stress and coping outcomes. The Shirom-Melamed Vigour Measure (SMVM) (Shirom, 2003a) is discussed in the next section.

4.4.6 Shirom-Melamed Vigour Measure (SMVM) (Shirom, 2003a)

Shirom (2003a) proposes the above instrument for measuring vigour (see appendix “H”). The following sections deal with the rationale, motivation for using the instrument as well as the nature, administration and interpretation of the instrument. Discussions include validity and reliability aspects of the questionnaire.

4.4.6.1 Nature, administration and interpretation

The SMVM is a 14 item paper-and-pencil self report 7-point Likert intensity scale. The questionnaire differentiates among three dimensions of vigour: physical strength (Phys), emotional energy (EE), and cognitive liveliness (CL). The items in the questionnaire is set in a statement format. A value of 1 on the scale represents a response of “never or almost never”, 2 represents “very infrequently”, 3 represents “quite infrequently”, 4 represents “sometimes”, 5 “quite frequently”, 6 “very frequently”, and 7 represents “always or almost always” (Shirom, 2003a).

The SMVM can be completed in a group or individually. The respondent is asked to report the frequency of experienced energetic feelings at work in the past 30 workdays. The 14 items on the SMVM are coded from SMV01 to SMV14 for statistical analysis purposes. With reference to the dimensions of the SMVM, the following statements measure physical strength (Shirom, 2003a):

“I feel full of pep” (SMV01), “I feel I have physical strength” (SMV02), “Feeling vigorous” (SMV03), “I feel energetic” (SMV04), “Feeling of vitality” (SMV05). The following statements measure cognitive liveliness:

“I feel I can think flexibly” (SMV06), “I feel I can think rapidly” (SMV07), “I feel I am able to contribute new ideas” (SMV08), “I feel able to be creative” (SMV09), and, “A feeling of flow” (SMV10). The following statements measures emotional energy:

“I feel able to show warmth to others” (SMV11), “I feel able to be sensitive to the needs of co-workers and customers” (SMV12), “I feel I am capable of investing emotionally in co-workers and customers” (SMV13), and, “I feel capable of being sympathetic to co-workers and customers” (SMV14).

Usually the questionnaires are checked and scores summed manually. In this research, the questionnaire is analysed by a computer programme. Raw scores are converted in t-scores. A total score is calculated for each sub-scale and each respondent. Averages are used during comparisons among other respondents.

4.4.6.2 Rationale of and motivation for application of instrument

Vigour is viewed as a core affect attributed to one’s work milieu (Russel, 2003; Shirom, 2003a). The SMVM measures the opposite affective state of burnout which is also a construct in this research (Shirom, 2003a). The instrument measures feelings that possess physical strengths, emotional energy and cognitive liveliness in the work situation. A study of vigour elaborates the conceptual domain of an affective response in the context of work organisations.

The SMVM is included in this research to investigate a positive mood state which is an indication that individuals are effectively coping with work-related demands. The instrument measures an oblique relationship with burnout, represented by the Shirom-Melamed

Burnout Measure (SMBM), of which the latter proposes a negative affective response to stress in the workplace. An inclusion of both these instruments allows for a conclusion of the balance between positive and negative affective states.

4.4.6.3 Validity

The SMVM seems to demonstrate good validity (Shirom, 2003a). The SMVM was subject to an exploratory factor analysis to set the sub-scales of the instrument. Norm findings were based on a sample of 2743 apparently healthy employees. The analysis confirmed the three dimensional model of vigour as a construct. The three sub-scales physical strength, cognitive liveliness and emotional energy were confirmed by three other studies (Downey, Wefald & Whitney, 2007; Shirom, 2007a; Smith, Downey & Whitney, 2006). The instrument was still not employed in South Africa. In order to demonstrate the bivariate relationship with burnout, the MBI-GS was included in the study. The SMBM and MBI-GS tend to negatively correlate with the emotional exhaustion scale of the MBI-GS (a mean $r = -0.17$ at the $p < 0.10$).

4.4.6.4 Reliability

The instrument also seems to demonstrate excellent internal consistency (Shirom, 2003a). While including both male and female participants in the validation study of the instrument, high standardised alpha indexes were demonstrated. Physical strength, Emotional energy and Cognitive liveliness generated alphas of 0.93, 0.93 and 0.91 respectively. A total alpha of 0.94 was obtained for the whole sample of 2743 employees. Armon, Shirom, Shapira and Melamed (2007) generated reliability coefficients between 0.92 and 0.98. Thus, the scale can be regarded as reliable. The instrument was not employed in South African studies before.

As mentioned, Shirom (2003a, 2003b) suggested an oblique relationship between vigour and burnout. In order to investigate this hypothesised bivariate relationship, the Shirom-

Melamed Burnout Measure (SMBM) is discussed in the next sections.

4.4.7 Shirom-Melamed Burnout Measure (SMBM) (Shirom, 2003b)

Shirom (2003b) proposes the above instrument for measuring burnout (see appendix “I”). The following sections deals with the rationale, the motivation for using the instrument as well as the nature, administration and interpretation of the instrument. Discussions include validity and reliability aspects of the questionnaire.

4.4.7.1 Nature, administration and interpretation

The SMBM is a 12 item paper-and-pencil self report 7-point Likert intensity scale. The questionnaire distinct among three dimensions of burnout: physical fatigue, emotional exhaustion, and cognitive weariness (Shirom, 2003b). The items in the questionnaire is set in a statement format. A value of 1 on the scale represents a response of “never or almost never”, 2 represents “very infrequently”, 3 represents “quite infrequently”, 4 represents “sometimes”, 5 “quite frequently”, 6 “very frequently”, and 7 represents “always or almost always”.

The SMBM can be completed in a group or individually. The respondent is asked to report the frequency of experienced energetic feelings at work in the past 30 workdays. The items on the SMBM scale are coded from SB01 to SB12 for statistical analysis purposes (Shirom, 2003b). With reference to the dimensions of the SMBM, the following statements measure physical fatigue:

“I feel tired” (SB01), “I feel physical drained” (SB02), “ I feel physically exhausted” (SB03), I have no energy for going to work in the morning” (SB04). The following statements measure emotional exhaustion:

“I feel fed up” (SB05), I feel like my emotional “batteries are “dead” (SB06),” I feel

emotionally burned out” (SB07),” I feel emotionally fatigued” (SB08). The following statements measure cognitive weariness:

“I am too tired to think clearly” (SB09), “I have difficulty concentrating” (SB10), “My thinking process is slow” (SB11), “I have difficulty thinking about complex things” (SB12).

Usually the questionnaires are checked and scores summed manually. In this research, the questionnaire is analysed by a computer programme. Raw scores are converted in T-scores. A total score is calculated for each sub-scale and each respondent. Averages are used during comparisons with other respondents. When using psychometric instruments, aspects of validity must be considered. This aspect is discussed in the next section.

4.4.7.2 Rationale of and motivation for application of instrument

The SMBM measures burnout as an outcome of the stress and coping process. It stands in an oblique relationship with vigour as a construct and measures the antithesis of vigour that was discussed in section 4.4.6. The instrument measures feelings that possesses physical fatigue, emotional exhaustion, and cognitive weariness in the work situation. A study of burnout elaborates the conceptual domain of an affective response in the context of people-orientated professionals such as police persons (Shirom, 2003b).

The SMBM is included in this research to investigate a negative mood state which is an indication that individuals are not effectively coping with work-related demands. The instrument measures a relationship with vigour, represented by the Shirom-Melamed Vigour Measure (SMVM), of which the latter proposes a positive affective response to stress in the workplace. An inclusion of the SMBM in this research allows for a conclusion of the balance between positive and negative affective states in the target organisation. Since a measure of social resources is included in this research, the SMBM which is related to Hobfoll’s (1989) theory of Conservation of Resources, is considered beyond other burnout measures.

4.4.7.3 Validity

The SMBM demonstrate good validity (Shirom, 2003b, 2003c; Shirom & Ezrachi, 2003; Shirom & Melamed, 2006). The SMBM was based on other widely used burnout measures like the Maslach Burnout Inventory (MBI) (Maslach, 1982) and the Burnout Measure of Pines (Pines, 1993). The SMBM was adapted to avoid contamination by symptoms like depression and anxiety (Shirom & Ezrachi, 2003). Through the statistical technique of factor analysis, the SMBM demonstrates a three factor structure represented by cognitive weariness, emotional exhaustion and physical fatigue (Shirom & Ezrachi, 2003). An additional Confirmatory Factor Analysis confirmed the theoretically expected SMBM three-factor structure and the three sub-scales suggested by Shirom (2003b) (Shirom, Niriel & Vinokur, 2006). The instrument has not been employed before in South African studies.

Validity is not the only requirement when considering psychometric instruments for research purposes. Reliability is another requirement which is discussed in the next section.

4.4.7.4 Reliability

The SMBM demonstrates good reliability (Shirom, 2003b, 2003c; Shirom & Ezrachi, 2003). Both male and female participants were included in the validation study of the instrument. High standardised alpha indices were demonstrated. Physical fatigue, emotional exhaustion and cognitive weariness generated alphas of 0.90, 0.84 and 0.90 respectively. A total alpha of 0.94 was obtained for the whole sample of 2743 employees. In a later study (Shirom et al., 2006) reported alphas of 0.93, 0.89 and 0.91 respectively during a Confirmatory Factor Analysis. Another study (Melamed, Shirom, Toker & Shapira, 2006) generated an alpha coefficient of 0.91 for the full scale of the SMBM. Because the instrument has not been used in South Africa before, no local indices are available for comparison.

4.5 PROCEDURE

Participants were surveyed in group format. Questionnaires were given to participants in the format of a booklet and in their class rooms. Instructions how to complete the questionnaires were given verbally by the researcher. For ethical reasons, it was explained to the participants, that the fact that participants complete the questionnaires is regarded as his or her voluntary participation in the research. Therefore, no consent forms were requested. The purpose of the research was explained to participants. The contribution each participant can make to improve the value of the study was also communicated to participants. Confidentiality was guaranteed before the completion of questionnaires commenced.

Questionnaires were collected immediately after they were completed. Afterwards, questionnaires were checked in order to determine completeness. Submissions with too much missing data were excluded from the research. Responses on questionnaires were coded and captured in a computer data base. Data was analysed via statistical computer programmes (Hair et al., 2005). Feedback was given to those individuals who required feedback. Results are reported in terms of descriptive and inferential statistics. The quantitative procedures and statistical techniques used in the research are discussed in the next sections.

4.6 STATISTICAL PROCESSING OF DATA

The statistical processing of data are presented in terms of quantitative procedures and statistical techniques. The initial descriptive and inferential data analysis took place at the Department Industrial and Organisational Psychology of the Nelson Mandela Metropolitan University at Port Elizabeth. The SPSS (1998) statistical programme was utilised for this purpose. The quantitative procedures included the following phases:

- The seven questionnaires are marked separately and the scores obtained by the

participants calculated;

- The means are used to describe the results. The mean is the sum of all squares in the distribution divided by the number of scores in the distribution. The calculated mean is used to compute the average scores that are obtained for the different components of the questionnaires (Kerlinger & Lee, 2000);
- The standard deviation (SD) as well as the minimum and maximum values are used to describe the results. The standard deviation is the positive squared root of the variance. The value of the standard deviation indicates how much the scores vary. The larger the value of the standard deviation, the more the scores vary. The more the scores vary, the more heterogenous the sample of police officers will be. If the standard deviation is small, the sample of police officers can be regarded as more homogenous (Bless & Higson-Smith, 2000; Kerlinger & Lee, 2000);
- Correlation entails the provision of a yardstick whereby the intensity or strength of a relationship can be gauged (Bryman & Cramer, 1999). Pearson's Product Moment Correlation is employed to determine the strength of a relationship between variables in specific hypotheses formulated.
- One-Way Analysis of variance (ANOVA) is considered to analyse the variances between and within groups of a particular sample. ANOVA relies on an assumption of equal variance (Kerr et al., 2002). Levene's test of homogeneity of variance is employed to determine whether the assumption of homogeneity of variance is met. If it is not met, the Kruskal-Wallis test, which is a nonparametric equivalent of the ANOVA, is employed to analyse the between subjects analysis of variance (Brace, Kemp & Snelgar, 2000).
- The reliability of the instruments are determined respectively by computation of Cronbach alpha coefficients and Confirmatory Factor analysis (CFA) (Hair et al.,

2005); and

- Analysis of covariance structures (also known as structural equation models) was executed through which variables were analysed to determine how much variance is detected in the structure proposed by Moos (1994). The PROC CALIS computer programme of SAS Institute (2006), with the assistance of the statistical department of the Pretoria University, was employed to estimate parameters and to determine a global fit between the Moos (1994) hypothesised theoretical model and the empirical data. Four indices were implemented to judge the model fit. The Goodness-of-Fit Index (GFI), the Root Square Error of Approximation (RMSEA,) (Hair et al., 2005), the Normed Fit Index (Bentler & Bonnet, 1980) and the Non-normed Fit Index (Bentler & Bonnet, 1980), also known as the Tucker-Lewis Index (TLI) (Tucker & Lewis, 1973) are included in the research. The requirements for goodness of fit for the respective indices are explained in chapter five (section 5.5.15).

Statistics reported in chapter 5 are rounded off to two decimal places. However, for the purpose of decision-making, statistical displays of one-way analysis of variance (ANOVA), p-values confidence levels and t-statistics are rounded off to three decimal places.

To determine the possibility of a relationship and difference between the collected data and the theoretical model proposed by Moos (1994), hypotheses are to be formulated in terms of the research questions. Previous research findings guide the formulation of the hypotheses (Kerr et al., 2000). Thus, the next section deals with the hypotheses formulation of the empirical research.

4.7 HYPOTHESES FORMULATION

Chapters two and three gave broad reviews with regard to theoretical aspects that are embedded in the framework of the Moos (1994) stress and coping model. However, the theoretical reviews are too broad for research on a doctoral level (Daniels, 2000; Goldberg,

1972; Kerlinger & Lee, 2000; Wissing & Van Eeden, 2002), and some issues are to be enquired about in a scientific manner. According to Kerlinger and Lee (2000) valid assumptions can be made regarding a statistical analysis, but the power of any research is increased by setting specific hypotheses when statements made in other empirical studies are tested under similar conditions, or similar conditions with different research samples. The same counts when a researcher intends to duplicate research issues. According to these authors, hypothesis testing is always powerful, even if nothing is confirmed. Therefore, the said chapters warrant investigation into some controversial or vague issues discovered during the literature reviews.

While considering guidelines for formulating hypotheses for this research, several sources were consulted. Although very specific in defining variables and their hypothetical relationships, none of them gave directions for building theoretical underpinnings for such hypotheses formulations. Therefore, the dualistic process applied by Theron and Roodt (1999) will be followed in this research. Initially the hypothesis is formulated, followed by the theoretical explanation for the hypothesis, commencing with hypothesis 1.

Hypothesis 1: Women experience significantly more stress than men.

Hypothesis 2: Officers from ethnical minority (i.e white, coloured and Indian) experience significantly more stress than majority groups (i.e. black).

Hypothesis 3: Officers in lower ranks experience significantly more stress than higher ranks.

Hypothesis 4: Officers with less years of service experience significantly more stress than those with more years of service.

Hypothesis 5: Married officers experience significantly more stress than single or divorced officers.

Hypothesis 6: Officers with high educational qualifications experience significantly more stress than those with lower qualifications.

The Moos (1994) model provides some understanding about the stress and coping process, and the eventual outcome of such process. In addition, researchers (Biggam, Power & Macdonald, 1997; Kirkcaldy & Shephard, 2001; McCreary et al., 2004; Spielberger et al., 1995) are of the opinion that policing is among the most stressful of occupations, but there is little evidence to validate these assertions (Berg et al., 2005; Biggam et al., 1997). The Moos (1994) model further asserts that demographic factors play a role in the way individuals perceive stressors. However, the Moos (1994) model limits demographic factors to cognitive ability and self esteem. A question is raised about the role of other demographics. According to Copes (2005) a limitation in police stress literature, is that although on a limited scale, research projects do not take the full role of demographic variables into account when investigating the prevalence thereof in similar samples (see also Burke, 1998; Haarr & Morash, 1999, 2005). One study revealed that women experience more stress than men, due to their multiple roles in society (Van Wyk, 2005). Another study (Berg et al., 2005) revealed the opposite. In the same study it was found that those with more years of service experience more stress. Furthermore, Lord (2005) found that lower ranks experience more stress than higher ranks. In the latter case, sergeants were more burdened because of their increased administrative duties due to supervision tasks. In two other studies, (Copes, 2005; Morash, Haarr & Kwak, 2006) ethnical minorities and gender (especially females) were found to be demographic predictors of police stress. In addition, Violanti (2005) reports higher rates of heart diseases among officers who have fewer years of service with higher suicide rates among officers over 65 years of age or 30 years of service. Loo (2005) found more suicides among married officers or those with romantic relationships than single officers. Finally, one other study (Kirkcaldy et al., 1998) revealed that the most highly educated officers report lower stress levels and higher levels of satisfaction. When analysing the above divergent findings, the role of demographic variables in the stress and coping process cannot be underestimated and opens a debate. It therefore warrants hypotheses to be formulated with regard to this research sample.

Hypothesis 7: In terms of reliance on social support, African and Indian groups are significantly more reliant than Whites and Coloureds.

Hypothesis 8: Women are significantly more reliant on social support than men.

It seems that the reliance on social support in terms of ethnical groups vary from continent to continent (Brislin, 2000; Sarafino, 2002). African Americans in the United States of America have smaller social networks than whites and Hispanics (Sarafino, 2002). In contrast, Brislin (2000) reports that Asians and Africans are more collectivistic in culture and therefore more reliant on social support than others. Further, women tend to engage more into social networks than men (Sarafino, 2002; Wellbrock, 2000). In addition, it is speculated that men experience more stress than women due to a lack of perceived social support (Pierce, Sarason & Sarason, 1996; Sarafino, 2002). Although it is only speculative, in South Africa it can be expected that blacks, Indians and women are more reliant on social support.

Hypothesis 9: There is a significant positive relationship between stress and social support.

Researchers are in no agreement about the role of social support in the work context. Moos (1986, 1994, 1997, 2002) suggests that social support induces stress during difficult times. Paton (2005) has a similar argument and mentions that in particular, in police context, those who are the providers of social support (e.g. colleagues, friends and family) are simultaneously inducers of stress. In contrast with the above, other researchers (Cheng & Chan, 2004; Kerley, 2005; Lord, 2005; Zimet et al., 1988; Zimet et al., 2001) are of the opinion that social support plays a mediating role during stressful times. The research sample eventually requires an investigation into the possible role of perceived social support.

Hypothesis 10: There is a positive relationship between coping resources and coping strategies when controlling for gender.

Hypothesis 11: There is a positive relationship between coping resources and coping strategies when controlling for minorities (ie. white, coloureds and Indian groups).

Most researchers do not consider whether any distinctive coping strategies are related to gender or ethnicity. Women and minorities must “prove themselves” and minorities may further experience harassment and discrimination (Copes, 2005). Copes (2004) as well as Greenglass (1995) emphasise the role of social support through communication with others. As a result, women and minorities’ greater reliance on social support is likely to result in effective coping strategies to manage stress. The latter argument is also supported by Haarr and Morash (1999) as well as Holahan and Moos (1990). South Africa is excluded from the above research findings and therefore hypothesis 10 and 11 emanate from these findings.

Hypothesis 12: Vigour is statistically negative related to burnout.

Hypothesis 13: Vigour and burnout are predicted to be positive and negative outcomes on experienced stress.

The Moos (1994) model proposes “well-being” as an outcome of the stress and coping process, which is a vague explanation for research purposes (see Goldberg, 1972; Wissing & Van Eeden, 2002). Toch (2002) as well as Wissing and Van Eeden (2002) suggest that well-being is a multi-facet phenomenon and should be investigated in terms of the context in which it is manifested. Out of a pathogenic point of view, Van Horn, Taris, Schaufeli and Scheurs (2004) confirmed that burnout is a psychological manifestation of occupational un-being. Simultaneously, other authors (Cacioppo et al., 1999; Shirom, 2004; Watson et al., 1999) suggest burnout as a negative affective response to the stress and coping process, alternatively with vigour as a positive affective coping response that is obliquely or negatively related to burnout. The demarcation of burnout and vigour as bivariate affective outcomes of such a process will then be a valid argument in terms of Wissing and van Eeden (2002) as well as Van Horn et al. (2004) postulates. Since the Moos (1994) model

does not suggest positive and negative stress and coping outcomes simultaneously out of a fortigenic and pathogenic point of view (see Strümpfer, 1995), it urges the researcher to formulate hypotheses 12 and 13 in this regard.

Hypothesis 14: Respondents with a personality characterised by a high degree of neuroticism experience high levels of burnout.

Stress as a prolonged phenomenon in police work environments is the cause of burnout (Hawkins, 2001; Kop & Euwema, 2001; Mostert & Joubert, 2005). Furthermore, researchers (Barrick & Mount, 1991; Larsen & Buss, 2005) is of the opinion that some personality dispositions either increase or decrease individual vulnerability to stress, and eventually burnout. Neuroticism is a disposition predicting a higher vulnerability towards burnout (Berg, Hem, Lau, Haseth & Ekeberg, 2005; Lau, Hem, Berg, Ekeberg & Torgerson, 2006). In addition, it was found that police officers with high scores on neuroticism have higher ratings for severity of stress and burnout prevalence while extroverts showed the opposite (Barrick & Mount, 1991; Larsen & Buss, 2005). Thus, it seems that neuroticism is a predictor of pathogenic stress experiences. No empirical results were published by the above researchers. If the above statements can regarded as given, personality characteristics may have implications for recruitment and selection processes in police context. Therefore, the above statements urge the researcher formulated a hypothesis in this research.

Hypothesis 15: There is a good fit between the theoretical structure of the Moos (1994) model and the empirical data.

Moos (1994) proposes a theoretical model by explaining the stress and coping process as a reciprocal activity between an individual's environmental system and various interactional components within such a process. The model includes an environmental system combined with social resources as stress inducing factors (Moos, 1986, 1994, 1997, 2002). These environmental and social components are in interaction with an individual's personal system, cognitive- and coping responses. Individual well-being is eventually an outcome

of such a process. Well-being seems to be a relative definition of health and needs to be narrowed (Van Horn et al., 2004; Wissing & Van Eeden, 2002). Further, Moos (1994) does not explain which one of these components is the most significant in the stress and coping process. When considering to demarcate well-being as a balance between adjustment and maladjustment, Van Horn et al. (2004) confirmed that a positive and negative affect is but one significant factor that represents occupational well-being. Daniels (2000) as well as other researchers (Cacioppo et al., 1997; Shirom, 2004; Watson et al., 1999) suggest tiredness (burnout) and vigour as outcomes of the stress and coping process within the work context. Moos (1994) does not refer to the work context, but to a rather broad social domain. It opens a debate on whether the broad social domain is replicated in the work context. Furthermore, Van Horn et al. (2004) are of the opinion that different instruments may produce different results, therefore hypothesis 15 is to be formulated to investigate the Moos (1994) model in this regard.

This section concludes the essentials of hypotheses formulation as well as critical aspects of the research methodology planned for the empirical research. The next section concludes the chapter with a chapter summary.

Remark: This chapter addresses the first four steps of the empirical objective by explaining the research methodology.

4.8 CHAPTER SUMMARY

This chapter described the empirical research by commencing with the research design. Other sections focused on the target population, measuring instruments, data processing and hypotheses formulation.

With regard to measuring instruments, special attention was given to the rationale of and the motivation for selecting a particular instrument, as well as the reliability and validity aspects of such an instrument. Discussions included the nature, administration, interpretation of each instrument selected for the empirical research. Sub-scales and

dimensions of each instrument were also discussed. The researcher elaborated on the data collection procedure as well as the statistical processing and interpretation of raw and converted data.

Specific hypotheses were formulated to test the dependent relationships of the empirical data. In the next chapter the empirical results are discussed. The following chapter therefore deals with the fifth step of the first empirical objective.

CHAPTER 5

RESULTS

5.1 INTRODUCTION

The previous chapter gave an outline of the methodology and techniques applied to conduct the empirical research. This chapter replies to the fifth step of the empirical phase by reporting the results through comparison and interpretation of such results in terms of the hypothesised Moos (1994) model. Descriptive as well as inferential statistics are applied to do the interpretation. The chapter is concluded with a summary. The chapter commences with descriptive statistics followed by inferential techniques. The following section displays and discusses the descriptive statistics.

5.2 RESULTS OF BIOGRAPHICAL QUESTIONNAIRE

Before the descriptive information is discussed, the section introduces the biographical profile of the sample.

Table 5.1 depicts the numerical dispersion of the sample. The sample consists out of 505 participants with 350 males (69.30%) representing the majority of the total group followed by females 155 (30.70%) comprising the minority of the sample.

All four ethnical groups representing the South African social composition, are included in the sample, although not in even numbers. The black group consists of 257 participants representing 50.89% of the total sample followed by 174 whites (34.46%) representing the second largest group. The 11 Indians are the smallest proportion (2.17%) of the total sample, followed by 63 coloureds representing 12.48% of the total group. In terms of rank it is clear that the 171 respondents which represent the Captain/Superintendent category is the largest proportion (33.86%) of the total sample.

TABLE 5.1
DEMOGRAPHIC PROFILE OF SAMPLE

Gender	Frequency	Percentage
Male	350	69.30
Female	155	30.70
TOTAL	505	100
Ethnicity		
Black	257	50.89
White	174	34.46
Coloured	63	12.48
Indian	11	2.17
TOTAL	505	100
Rank		
Recruit	7	1.39
Constable	138	27.33
Sergeant	38	7.52
Inspector	118	23.37
Captain/Supt	171	33.86
Sr Supt. & higher	0	0
Other	33	6.53
TOTAL	505	100
Marital status		
Single	163	32.28
Married	312	61.78
Divorced	30	5.94
TOTAL	505	100
Years of service		
Less than 3 years	60	11.88
3 - 5 years	90	17.82
6 - 10 years	26	5.15
11 - 15 years	140	27.72
16 - 20 years	118	23.37
21+ years	71	14.06
TOTAL	505	100

Education		
Lower than matric	21	4.16
Matric	289	57.22
Diploma	150	29.70
Graduate	35	6.93
Post Graduate	10	1.99
Total	505	100

The Captain/Superintendent category reflects also the middle management proportion of the total sample. Furthermore, this group belongs to the category of commissioned officers, although not specified as such in table 5.1. In terms of proportional representation, 138 Constables is from the second largest group (27.33%) followed by 118 Inspectors representing 23.37% of the total sample.

The category labelled "Other" consists 33 respondents representing 6.53% of the total group. This civilian group of participants form part of the support function included in the organisational structure, and although not categorised in terms of the semi-military rank structure of the Police Service, are equally exposed to organisational activities that affect functional police officers on a daily basis. The seven recruits included in the sample represent the smallest proportion (1.39 %) of the sample. It may be argued that they may not be homogenous to the total sample, but it should be mentioned that recruits are also exposed to organisational structures and that they have already served a considerable number of years in the organisation. Therefore, recruits would be able to express a valid opinion in terms of the scope of this research. Loo (2005) supports this argument through research that proves that police officers in the lower ranks are more suicide prone than higher ranks. Furthermore, Berry (1998) is of the opinion that young employees also experience stress and may suffer from burnout. However, such employees tend to quit jobs easier than older employees. Thus, it was important to include recruits in the research sample.

Table 5.1 further indicates that 312 of the total sample are married. This category is the largest and representing 61.78% of the sample. Single members are the second largest

proportion with 163 respondents and representing 32.28% of the total sample. Divorced members form the smallest group with 30 members and representing 5.94% of the total group.

Years of service is the second last category to be discussed. In this category, 140 respondents indicated that they have between 11 and 15 years service. This category represents the largest proportion (27.72%) of the total sample, followed by the 118 respondents (23.37%) indicating that they have between 16 and 20 years of service. The smallest proportion are those who have between 6 and 10 years of service, which represent 5.15% of the total sample. The latter group is followed by those members that have less than 3 years of service and representing 11.88% of the total group. If proportions of this category are combined, it seems that the majority of respondents have between 11 and 21+ years of service. This represents 329 respondents that form 65.15% of the total sample. The minority (176 respondents) of the sample has less than 11 years of service reflecting a proportion 34.85% of the total sample.

The last category in the demographic profile to be dealt with, is the education levels of the sample. The largest group are those 289 respondents that indicated that they have matric. This group represents 57.22% of the total sample followed by 150 respondents (29.70%) who indicated that they have a diploma as their highest qualification. The smallest proportion are those 10 (1.99%) who indicated that they have a post-graduate qualification. This category is followed by the 21 respondents (4.16%) that have less than matric (Grade 12) as a qualification. Graduates represent 6.93% (35 respondents) of the total proportion. In this section attention was given to the biographical questionnaire's results. In the next section the reliability and validity of the measuring instruments are evaluated.

5.3 RELIABILITY AND VALIDITY OF INSTRUMENTS

In this section the reliability and validity of the instruments are discussed by using Cronbach alpha to assess internal consistency while factor analysis gives indices to investigate factor structures of the instruments. The following section commences with

the Organisational Police Stress Questionnaire.

5.3.1 Reliability and validity of the Organisational Police Stress Questionnaire

The reliability of the above instrument will be discussed first and followed by the validity of the instrument.

5.3.1.1 Reliability of the Organisational Police Stress Questionnaire

McCreary and Thompson (2006) describe the Organisational Police stress Questionnaire as an uni-dimensional instrument measuring only one factor, namely police organisational stress. A factor analysis has not been conducted on this instrument before. Therefore, no comparisons could be made with other research findings. As a result of a factor analysis conducted in this research (see next section 5.3.1.2) sub-scales were labelled in terms of the factor structure.

TABLE 5.2
DIMENSIONS OF THE ORGANISATIONAL POLICE STRESS QUESTIONNAIRE

Dimensions	Alpha
Job demands	0.83
Uncertainty	0.76
Work overload	0.76
Frustration	0.79
Scale total	0.92

Table 5.2 reflects these sub-scales and their respective reliability indices. *Job demands* reflect the greatest Cronbach alpha coefficient (0.83) followed by *frustration*. The coefficients of the remaining dimensions are 0.76 (*uncertainty* and *work overload*) and 0.76 respectively which is still above the threshold of 0.70. Table 5.2 also reveals a

scale total of 0.92. In a pilot study, McCreary and Thompson (2006) found a high scale reliability ($\alpha > 0.90$). This particular instrument can therefore be regarded as extremely reliable. The validity of the instrument is to be discussed in the next section.

5.3.1.2 Validity of Organisational Police Stress Questionnaire

Although McCreary and Thompson (2006) suggest the Organisational Police Stress Questionnaire to be uni-dimensional, a Principal Component Factor analysis was conducted in this research. A scree plot distribution of the variables has been obtained and displayed in figure 5.1 as a priori test.

The scree plot suggests that the majority of items of the Organisational Police Stress Questionnaire load on the first factor, but this factor explains only 40.45% of the total variance which is too low. Therefore, it was decided to retain four factors. The variance explained by the four factors is displayed in table 5.3.

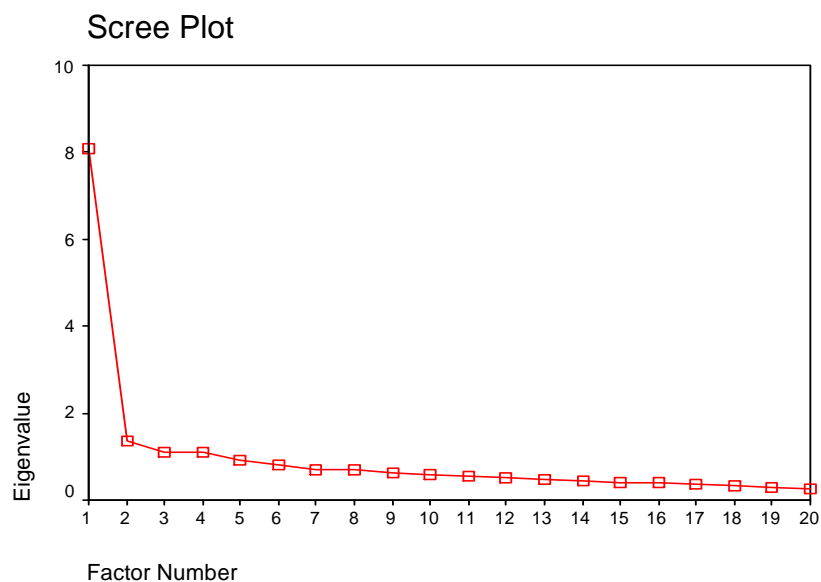


Figure 5.1: Scree plot of Organisational Police Stress Questionnaire

Table 5.3 displays four components with eigenvalues greater than 1. The four retained

factors explain 58% of the total variance and are labelled as mentioned in section 5.3.1.1. To obtain the best results, an oblique varimax rotation was conducted which revealed the factor structure of the instrument that is to be discussed under the following retained factors:

TABLE 5.3
TOTAL VARIANCE OF COMPONENTS EXPLAINED

Component	Eigenvalue	% variance	Cumulative %
1	8.08	40.45	40.45
2	1.36	6.68	47.30
3	1.11	5.60	52.90
4	1.08	5.43	58.33

Extraction method: Principal Component Analysis

- Factor 1: Items **10** (0.37), **15** (0.52), **17** (0.54), **18** (0.56), **19** (0.57), **20** (0.58). This factor indicates that police officers are burdened extremely high demands in the police organisational system that oblige them to invest abnormal efforts in their day-to-day activities which prevent them from doing their normal duties, which is expected.
- Factor 2: Items **1** (0.70), **2** (0.60), **3** (0.50), **11** (0.56), **12** (0.50). This factor indicates that police officers feel uncertain in their work, and it is as if they are so much hampered by this uncertainty that they cannot make progress in their work activities.
- Factor 3: Items **4** (0.59), **5** (0.58), **7** (0.52), **8** (0.54), **9*** (0.31). (Item 9 was deleted during a Confirmatory Factor Analysis [CFA]). This factor indicates that respondents experience excessive work overload that causes unnecessary stress in police officers' lives.

- Factor 4: Items **6** (0.53), **13** (0.67), **14** (0.62), **16** (0.41). This factor indicates that police officers are frustrated and feeling helpless because they have a shortage of staff and equipment, and that the organisation is not doing anything to ease the burden.

A confirmatory factor analysis confirmed the above structure. However, in order to obtain a better fit, item 9 “Lack of training on new equipment” was deleted. Since the said item was deleted, a reasonable fit was detected for a Comparative Fit Index (CFI) (Bentler, 1980, 1990) of 0.89, and a Non-Normed Index (NNI) (Bentler & Bonnet, 1980) of 0.87 was generated by the four factor structure of the above instrument. Thus, after applying several factor analytic techniques, the various dimensions of the Organisational Police Stress Questionnaire could be determined and are displayed in table 5.3.

The alpha coefficients obtained for the instrument as well as the results of the factor analyses confirm the reliability and validity of the instrument. As mentioned in the previous section, a four factor structure is suggested in this research, since the factor structure was never investigated in previous research. The next instrument to be evaluated, is the Multidimensional Scale of Perceived Social Support that will be discussed in the next section.

5.3.2 Reliability and validity of Multidimensional Scale of Perceived Social Support

The reliability and validity of the above instrument are discussed in this section commencing with reliability.

5.3.2.1 Reliability of the Multidimensional Scale of Perceived Social Support

As mentioned in chapter 4, the instrument suggests three dimensions of perceived social support as displayed in table 5.4. When the relevant instrument is evaluated, one learns that it proposes high internal consistency. The sub-scale for *Friend support* reflects the highest internal consistency with an alpha coefficient of 0.86 followed by the

sub-scale for *Family support* with an alpha coefficient of 0.83. The remaining sub-scale (*Significant other*) has the lowest coefficient of 0.81, which is still high. If 0.70 is regar-

TABLE 5.4
RELIABILITY OF MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT

Dimensions	Alpha
Friend support	0.86
Family support	0.83
Significant other	0.81
Scale total	0.87

ded as an acceptable level of reliability (see Kerlinger & Lee, 2000), the Multidimensional Scale of Perceived Social Support can be regarded as a reliable instrument employed in this research. Similar high indices were reported by Zimet et al. (1988) (see chapter four section 4.3.3.4) as well as Cheng and Chan (2004). The next requirement for measuring instruments, validity, is discussed in the next section.

5.3.2.2 Validity of the Multidimensional Scale of Perceived Social Support

A factor analysis with an oblique varimax rotation confirms the three factor scale as suggested by Zimet et al. (1988), and as later confirmed by Cheng and Chan (2004). Three factors with eigenvalues greater than 1 were retained. Figure 5.2 is a scree plot displaying the above factors retained in this research. The proportion retained by the three factors explains a cumulated proportion of 68.51%, confirming the validity of the instrument. These three factors therefore, underline the three sources of perceived social support as suggested by Zimet et al. (1988), and as later confirmed by Cheng and Chan (2004) via a Confirmatory Factor Analysis. The retained factors are discussed as follows:

- **Factor1:** Items **6** (0.81); **7** (0.83); **9** (0.84); **12** (0.85). This factor indicates that friends lend support to police officers during critical times or when advice or emotional support is needed;

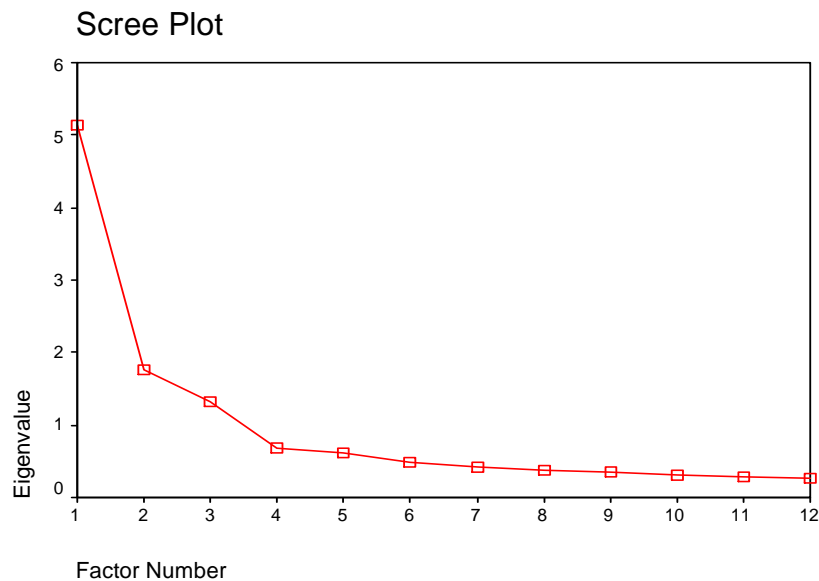


Figure 5.2: Scree plot of Multidimensional Scale of Perceived Social Support

- **Factor 2:** Items **3** (0.78); **4** (0.85); **8** (0.77); **11** (0.79). This factor indicates that police officers rely a lot on family members' (e.g. spouses, parents, brothers and sisters, and probably siblings as well; and
- **Factor 3:** Items **1**(0.84); **2** (0.86); **5** (0.76); **10** (0.66). This factor suggests that significant other, such as colleagues supervisors or peers, lend support during critical or uncertain times.

A Confirmatory Factor Analysis (CFA) confirmed the three factor structure. No items were deleted and reasonable fit indices were generated by the three factor structure, for the CFI (Bentler, 1990) was 0.89 and the NNI (Bentler & Bonnet, 1980) 0.87. The above analysis and interpretations confirmed that the Multidimensional Scale of

Perceived Social Support is a reliable and valid instrument to measure perceived social support in this research. The next section deals with personality assessment measures.

5.3.3 Reliability and validity of Five Factor Inventory

The reliability and validity of the above instrument are discussed in the next sections commencing with the reliability of the instrument.

5.3.3.1 Reliability of the Five Factor Inventory

Goldberg (1992) suggested that the construct personality consists out of five dimensions. Table 5.5 depicts the five dimensions of the Five Factor Inventory as grouped by the factor analyses mentioned in section 5.3.3.2. Each dimension's Cronbach alpha reliability index is reflected.

TABLE 5.5
RELIABILITY OF THE FIVE FACTOR INVENTORY

Scale Dimensions	Alpha
Emotional Stability - Neuroticism ES	0.87
Conscientiousness - Dependability CD	0.91
Intro - Extraversion IE	0.85
Closed - Openness CO	0.89
Pleasantness -Agreeableness PA	0.87
Scale total	0.89

All sub-scales reflect a Cronbach alpha coefficient above 0.80. The *conscientiousness versus dependability* sub-scale owns the highest alpha index of 0.91 followed by the *closed versus openness* sub-scale that generated an alpha coefficient of 0.89. The lowest alpha coefficient was generated by the *introversion versus extraversion* scale followed equally by the two remaining sub-scales *pleasantness versus agreeableness* (0.87) and *emotional stability versus neuroticism* (0.87). The above indices are greater

than reported by Goldberg (1999). In the latter, alphas between 0.77 and 0.86 were reported. In 1992 the same author reported greater alpha values than the former as mentioned in chapter four (section 4.4.4.4) varying between 0.91 and 0.97, which means that different populations may generate different coefficients.

With regard to reliability, the researcher's submission is that Goldberg's (1992) Five Factor Inventory is a relatively reliable instrument for measuring personality in this research. While reliability is one aspect of this research's accuracy to be considered, validity of the same instrument is discussed in the next section.

5.3.3.2 Validity of the Five Factor Inventory

A factor analysis with an oblique varimax rotation confirms the five factor scale as suggested by Goldberg (1992). Figure 5.3 is a scree plot explaining the five factors with eigenvalues greater than 1 that were retained. The index for this solution shows that 55.69% of the total variance is represented by the information contained in the factor matrix generated for this particular solution, which confirms the validity of the questionnaire. The following factor structures are identified:

- Factor 1: Items **IE01*** (0.76); **IE02** (0.75); **IE03** (0.71); **IE04** (0.63); **IE05** (0.72). (Item IE01 was deleted during a Confirmatory Factor Analysis [CFA]). This factor confirms the *introversion versus extraversion* dimension of personality on a continuum. It also explains quantity and intensity of interpersonal interaction, including activity level, need for stimulation and capacity for joy.
- Factor 2: Items **PA01** (0.56); **PA02** (0.55); **PA03** (0.66); **PA04** (0.52); **PA05** (0.67). This factor confirms the *pleasantness versus agreeableness* dimension of personality on a continuum. Additionally, the factor explains the quality of an individual's interpersonal orientation along a continuum from compassion to antagonism.

- Factor 3: Items **CD01** (0.66); **CD02** (0.65); **CD03** (0.56); **CD04** (0.62); **CD05** (0.54). This factor confirms the *conscientiousness versus dependability* dimension of personality on a continuum. It further explains an individual's degree of organisation, persistence, motivation and goal-orientated behaviour.

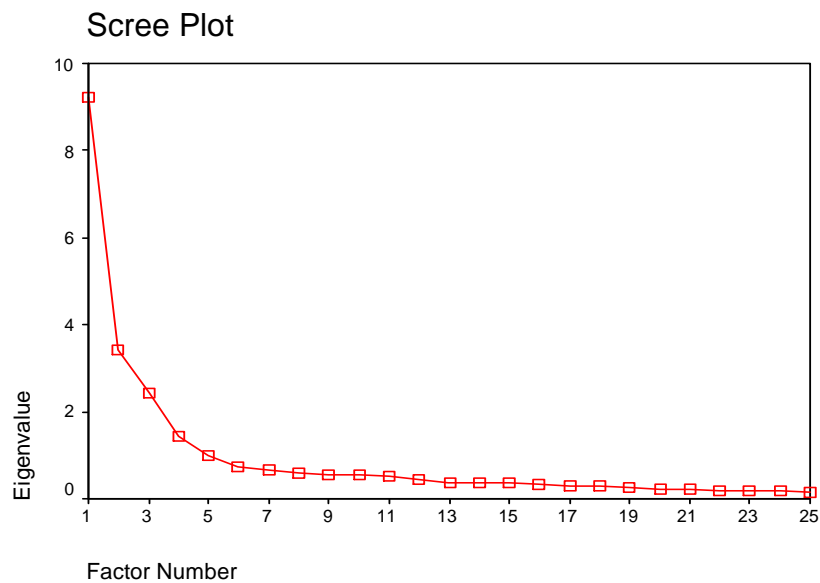


Figure 5.3: Scree plot of Five Factor Inventory

- Factor 4: Items **ES01** (0.84); **ES02** (0.88); **ES03** (0.81); **ES04** (0.85); **ES05*** (0.69). (Item ES05 was deleted during a CFA). This factor confirms the *emotional stability* (also *neuroticism* scale) dimension of personality on a continuum. The factor further assesses adjustment versus emotional instability.
- Factor 5: Items **CO01** (0.62); **CO02** (0.58); **CO03** (0.66); **CO04** (0.67); **CO05** (0.55). This factor confirms the *closed versus openness* to new experience dimension of personality on a continuum. Additionally, it evaluates an individual's pro-active seeking and appreciation of

experience for its own sake, including a toleration for, and exploration of the unfamiliar.

A Confirmatory Factor Analysis (CFA) confirmed the above factor structure and loadings. Since items IE01 and ES05 were deleted, a reasonable fit was recorded in terms of the above five factor structure. A CFI (Bentler, 1990) of 0.92 and a NNFI (Bentler & Bonnet, 1980) of 0.90 was generated by the above factor structure. Therefore, the aforementioned discussion explained the reliability and validity of the Five Factor personality structure as proposed by Goldberg (1992). The next section seeks to explain reliability and validity of the Brief COPE scale.

5.3.4 Reliability and validity of Brief COPE Inventory

The reliability and validity of the above instrument are discussed in the next sections commencing with the reliability of the instrument.

5.3.4.1 Reliability of the Brief COPE Inventory

It seems that reliability and validity indices generated by the Brief COPE Inventory vary from study to study (Ayers et al., 1996; Skinner, Edge, Altman & Sherwood, 2003; Welbourne, Eggerth, Hartley, Andrew & Sanchez, 2006) and that low Cronbach alpha indices as low as 0.40 were accepted in minor studies. Simultaneously, it also seems that there is no consensus on how many dimensions usually explain the structure of the Brief COPE. Furthermore, researchers find it difficult to compare results with those of the developer of the instrument, because item loadings were not reported (see Pienaar & Rothmann, 2003). However, to be systematic the reliability indexes of the original 14 dimensions as suggested by Carver et al. (1989) and Carver (1997a) will be reported in this section, followed by the factor structure determined in 5.3.4.2.

Table 5.6 depicts the 14 dimensions or sub-scales of the Brief COPE Scale as suggested by Carver (1997a) and the reliability coefficients (alpha) of each dimension obtained in this research sample. *Substance use* reflects the highest coefficient (0.89)

followed by the 0.84 generated by *humour*.

The lowest is displayed by *self-distraction* (0.581) followed by *venting* which generates an alpha coefficient of 0.63. Carver (1997a) reported reliability indices between 0.50

TABLE 5.6
RELIABILITY OF THE BRIEF COPE INVENTORY

Scale dimensions	Alpha
Active coping	0.73
Planning	0.77
Positive reframing	0.72
Acceptance	0.64
Humour	0.84
Religion	0.73
Seek emotional support	0.77
Seek instrumental support	0.83
Self-distraction	0.58
Denial	0.82
Venting	0.63
Substance use	0.89
Behaviour disengagement	0.82
Self-blame	0.83
Scale total	0.86

and 0.90 for the various dimensions of this instrument. The instrument's total alpha coefficient recorded, is 0.86. As far as reliability is concerned, initially none of these dimensions were considered to be deleted before the factor structure was analysed. As mentioned in chapter four a Chronbach alpha of 0.50 is still regarded as psychometrically sound, if such a coefficient is generated in group context (Smit, 1986).

The Brief COPE Inventory can therefore be accepted as a relative reliable instrument

for measuring coping strategies, depending on which dimensions are regarded as important in terms of this research (Welbourne et al., 2006).

A critical aspect to deal with, is the validity of the instrument which is discussed in the next section.

5.3.4.2 Validity of Brief Coping Inventory

As mentioned in section 5.3.4.1, research reports reveal different results when investigating the reliability and validity of the Brief COPE Inventory. Although 14 subscales were suggested (Carver, 1997a) research reports vary in the number of factors to be retained.

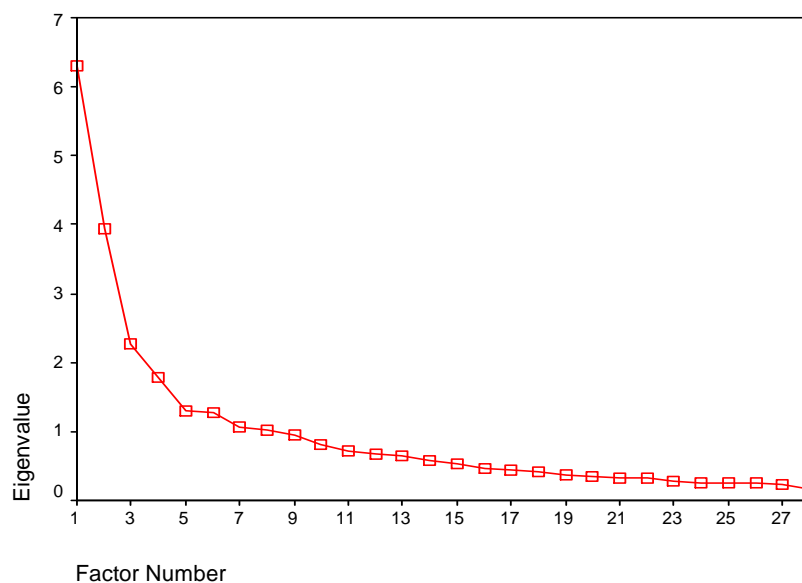


Figure 5.4: Scree plot of Brief COPE Inventory

Bishop et al. (2001) and well as Welbourne et al. (2006) suggest three factors. Others (Carver et al., 1989; Phelps & Jarvis, 1994; Pienaar & Rothmann, 2003) suggest four factors, while a third group (Sica, Novara, Dorz & Sanavio, 1997) suggest five factors. Due to the fact that the labels allocated to factors vary from research to research, as

well as the outcome of an priori scree test, it was decided to opt for a four factor solution in this research. Figure 5.4 is a scree plot explanation of the Brief COPE Inventory and the factors retained.

An oblique varimax factor rotation was implemented in terms of a four factor solution. The four factors explain a cumulated proportion of 51.04%, which confirms the validity of the questionnaire. The following factors were retained and labelled.

- Factor 1: Items **19*** (0.40); **20*** (0.46); **21*** (0.48); **22*** (0.46); **23** (0.72); **24*** (0.70); **25** (0.65); **26** (0.68); **27** (0.69); **28** (0.68). (Items 19, 20, 21, 22 and 24 were finally deleted during a CFA). This factor confirms a strategy through which individuals revert to *avoidance* coping.
- Factor 2: Items **1** (0.71); **2** (0.76); **3** (0.79); **4** (0.77); **5** (0.67); ***6** (0.51). (Item 6 was finally deleted during a CFA). This factor confirms a strategy through which individuals engage in *active or approaching* coping. It means that the individual goes into direct confrontation with the problem or challenge.
- Factor 3: Items ***11** (0.44); ***12** (0.55); **13** (0.69); **14** (0.69); **15** (0.66); **16** (0.70); ***17** (0.37). (Item 18 was deleted during the initial factor rotation while items 11, 12 and 17 were deleted during a CFA). This factor confirms a strategy through which individuals engage in *social/emotional* coping.
- Factor 4: Items ***7** (0.46); **8** (0.65); **9** (0.79); **10** (0.77). (Item 7 was finally deleted by a CFA). This factor confirms a strategy through which individuals engage in *active cognitive* coping or a re-appraisal of the threatening or challenging situation.

Like Pienaar and Rothmann (2003), four factors were retained in this research, but the items in terms of the factor structure and each relevant factor was unable to be replicated. The said authors used the 53 item scale while the 28 item version was employed in this research. A Confirmatory Factor Analysis (CFA) confirmed the above factor structure and loadings. In order to obtain a reasonable fit, 11 of the items were deleted. A CFI coefficient (Bentler, 1990) of 0.89 and a NNI (Bentler & Bonnet, 1980) of 0.87 were generated by the above four factor structure. Besides the deletion of some items in the questionnaire (which is not unusual), the Brief COPE Inventory can be regarded as a reliable and valid instrument as far as the existing factors and items are concerned.

The second last instrument to be evaluated in terms of reliability and validity, is the Shirom-Melamed Vigour Measure that will be discussed in the next section.

5.3.5 Reliability and validity of the Shirom-Melamed Vigour Measure (SMVM)

The reliability and validity of the above instrument are discussed in the next sections commencing with the reliability of the instrument.

5.3.5.1 Reliability of the Shirom-Melamed Vigour Measure (SMVM)

Table 5.7 depicts the three dimensions of the Shirom-Melamed Vigour Measure (SMVM) as suggested by Shirom (2003a) and reliability indices generated by this research sample. *Cognitive liveliness* has the greatest reliability index of alpha 0.91 followed by *emotional energy* with an alpha coefficient of 0.90. Although the lowest of these three dimensions, the *physical strength* dimension reflects an alpha coefficient of 0.881. All the mentioned indices are regarded as high and the internal consistency of the instrument is confirmed. As mentioned in chapter four, Shirom (2003a) reported similar high alpha coefficients for this particular instrument.

TABLE 5.7
RELIABILITY OF THE SHIROM-MELAMED VIGOUR MEASURE (SMVM)

Scale dimensions	Alpha
Physical strength	0.88
Cognitive liveliness	0.91
Emotional energy	0.90
Scale total	0.93

Such satisfactory information about the instrument urges the researcher to evaluate the instrument's validity which will be discussed in the next section.

5.3.5.2 Validity of the Shirom-Melamed Vigour Measure (SMVM)

Figure 5.5 is a scree plot of the SMVM that supports the extraction of three factors as suggested by Shirom (2003a). A factor analysis with an oblique varimax rotation retained three factors. These factors explain a cumulated proportion of 73.94%, which confirms the validity of the questionnaire. The following factors were retained:

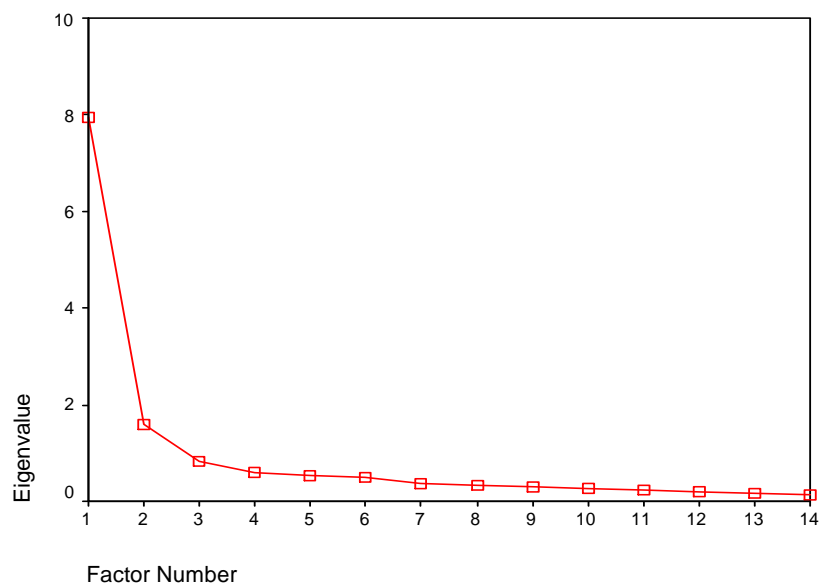


Figure 5.5: Scree plot of Shirom-Melamed Vigour Measure

- Factor 1: Items **11** (0.75); **12** (0.89); **13** (0.85); **14** (0.84). This factor indicates that individuals apply *emotional energy* positively in order to deal with threats or challenges.
- Factor 2: Items **1*** (0.71); **2** (0.70); **3*** (0.79); **4** (0.67); **5** (0.65). (Items 1 and 3 were deleted during a Confirmatory Factor Analysis). This factor confirms that *physical and mental strength* is a dimension of vigour as a construct and that individuals direct such strength positively in order to absorb the effect of challenges or threats.
- Factor 3: Items **6** (0.53); **7** (0.45); **8** (0.89); **9** (0.92); **10** (0.41). This factor confirms *cognitive liveliness* as a dimension of the Shirom-Melamed Vigour Measure and emphasises a reflection of this dimension when individuals deal with stressors or challenges effectively.

A Confirmatory Factor Analysis (CFA) was conducted to confirm the initial analysis as mentioned above. In order to obtain a reasonable fit the two items as mentioned above, were deleted. After deletion, of the said items, a CFI coefficient (Bentler, 1990) of 0.92 and NNI (Bentler & Bonnet, 1980) of 0.90 were recorded. The above three factor structure is confirmed in a recent study (Smith et al., 2006) in which no items were deleted. In a recent study, Shirom (2007a) reported high fit indices. A CFI of 0.98 and a NNI of 0.97 was generated by the original three factors. The reason why items were deleted in this research and not in the afore-mentioned studies, relates to language fluency in the various countries the instrument was employed. In this research, the majority of respondents used English as a second language while it is not in the case with the former reported studies. The above confirmatory results suggest the high validity of this instrument. The last instrument to be evaluated in terms of reliability and validity is the Shirom-Melamed Burnout Measure (SMBM) that is to be discussed in the next section.

5.3.6 Reliability and validity of the Shirom-Melamed Burnout Measure (SMBM)

The reliability and validity of the above instrument are discussed in the next sections commencing with the reliability of the instrument.

5.3.6.1 Reliability of the Shirom-Melamed Burnout Measure (SMBM)

Table 5.8 displays Chronbach alpha coefficients generated by the SMBM's three dimensions as proposed by Shirom (2003b). Cognitive weariness shows the highest reliability index of 0.92 followed by emotional exhaustion with an alpha of 0.91.

TABLE 5.8
RELIABILITY OF THE SHIROM-MELAMED BURNOUT MEASURE (SMBM)

Scale dimensions	Alpha
Physical fatigue	0.90
Cognitive weariness	0.92
Emotional exhaustion	0.91
Scale total	0.94

Physical fatigue generated the lowest coefficient of 0.90. As mentioned in chapter four (section 4.4.7.4) Shirom (2003b) reported high alpha coefficients than in this research. A recent study (Armon, Shirom, Shapira & Melamed, 2007) generated total scale reliability coefficients between 0.92 and 0.98. The studies mentioned above, are in support of this research's coefficients generated by confirming the reliability of the particular instrument.

This research confirms the reliability coefficients reported in chapter four (section 4.4.7.4) and avoiding any dispute about the instrument's reliability. While the above indices confirm the internal consistency of the said scale in terms of this research

sample, the validity of the same instrument is investigated in the next section.

5.3.6.2 Validity of the Shirom-Melamed Burnout Measure (SMBM)

A factor analysis with an oblique varimax rotation confirms the extraction of three factors. Figure 5.6 is a scree plot of the SMBM supporting the extraction of three factors as suggested by Shirom (2003b). The three factors explain a cumulated proportion of 80.45% which confirms the validity of the questionnaire for this research. The following factors were retained:

Factor 1: Items **4** (0.48); **5** (0.60); **6** (0.58); **7** (0.59); **8** (0.58). This factor explains that *emotional exhaustion* is a mental response to burnout and that the individual further realises that he or she does not have sufficient physical energy to do any work, or to encounter any threats or challenges.

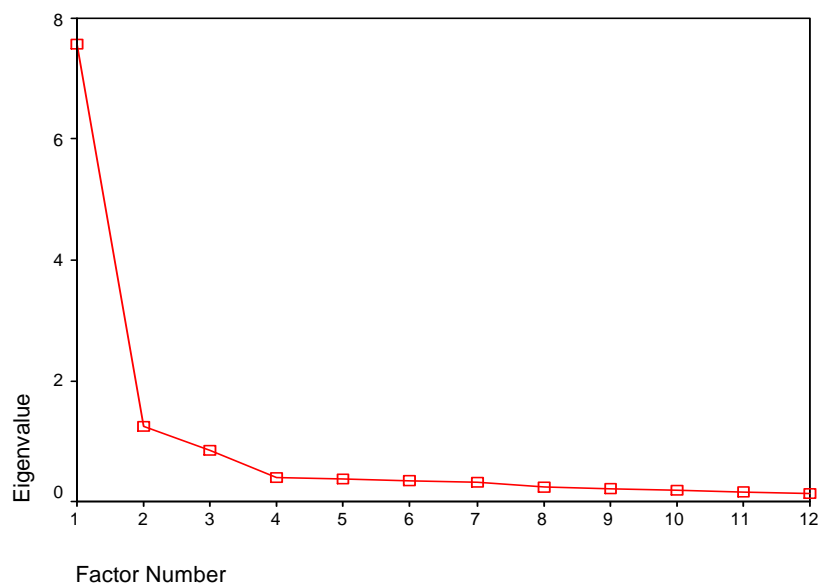


Figure 5.6: Scree plot of Shirom-Melamed Burnout Measure

Factor 2: Items **9** (0.51); **10** (0.62); **11** (0.76); **12** (0.74). This factor indicates that burned-out individuals are *cognitively worn* and that they are perceived not to have the energy to face threats or challenges on this level.

Factor 3: Items **1** (0.76); **2** (0.71); **3** (0.67). This factor indicates that burned-out individuals also experience a high level of *physical fatigue* when facing threatening and challenging situations. The factor further confirms that the low levels of energy are reflected in reduced mental activities.

A Confirmatory Factor Analysis (CFA) confirmed the above three factor structure as suggested by Shirom (2003b). The indices reflect a good fit in terms of the above structure. A CFI (Bentler, 1990) of 0.95 and NNI (Bentler & Bonnet, 1980) of 0.95 were generated suggesting a reasonable fit for the instrument. No items were deleted. The CFA executed in this research confirms the validity of the instrument as suggested by other researchers and as recorded in chapter four (section 4.4.7.3).

The following discussion is a summary of the reliability and validity of all the instruments dealt with in this chapter.

SUMMARY:

Six instruments were included in this research. They are the *Organisational Police Stress Questionnaire*, the *Multidimensional Scale of Perceived Social Support*, the *Five Factor Inventory*, the *Brief COPE*, the *Shirom-Melamed Vigour Measure (SMVM)* and the *Shirom-Melamed Burnout Measure (SMBM)*. These instruments can be summarised as follows:

- The *Organisational Police Questionnaire* has an average scale reliability of alpha 0.92. The validity was confirmed via an oblique varimax factor rotation as well as a CFA. The four retained factors explain 58% of the instrument's total variance. Item 9 ("lack of training on new equipment") was deleted by a CFA;

- The *Multidimensional Scale of Perceived Social Support* has an average scale reliability of alpha 0.87. The validity of the instrument was confirmed by an oblique varimax factor rotation. Three factors were retained and confirming the dimensions *Family support*, *Friends support* and *Significant other support* as suggested by the developers of the instrument. The three retained factors explain 68.51% of the instrument's total variance. None of the items were deleted by the initial factor extraction or CFA;
- The *Five Factor Inventory* has an average scale reliability of alpha 0.89. The validity was confirmed by an oblique varimax factor rotation. The analysis retained five factors confirming the dimensions suggested by the developer. These dimensions are: *introversion versus extroversion*, *antagonism versus agreeableness*, *conscientiousness versus dependability*, *emotional stability versus neuroticism*, and *closedness versus openness*. The retained factors explain 55.69% of the instrument's total variance. Items IE01 ("silent versus talkative") and item ES05 ("unemotional versus emotional") were deleted by a CFA;
- The *Brief COPE Inventory* has an average scale reliability of alpha 0.86. The developers of the original *Brief COPE Inventory* initially suggested 14 strategies for this instrument. Four factors were retained during an oblique varimax factor rotation. The four factors explain 51.04% of the instrument's total variance. The following items were deleted by a CFA: item 6 ("I've been looking for something good in what is happening"); Item 7 ("I've been accepting the reality of the fact that is has happened"); item 11("I've been trying to find comfort in my religion or spiritual beliefs"); item 17 ("I've been turning to work or other activities to take my mind off things"); item 18 ("I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping"); item 19 ("I've been saying to myself "this isn't real"); item 20 ("I've been refusing to believe that it has happened"); Item 21 ("I've been saying things to let my unpleasant feelings escape"); item 2 ("I've been expressing my negative feelings"); item 24 ("I've been using alcohol or other drugs to help me get through

it”);

- The *Shirom-Melamed Vigour Measure (SMVM)* has an average scale reliability of alpha 0.93. The validity was confirmed by an oblique varimax factor rotation and a CFA. It also confirms the original dimensions suggested by the developer, namely physical strength, cognitive liveliness and emotional energy. The retained factors explain 73.94% of the instrument’s total variance. Items 1 (“I feel full of pep”) and 3 (“Feeling vigorous”) were most probably not properly understood by the respondents and therefore deleted by a CFA.; and
- The *Shirom-Melamed Burnout Measure (SMBM)* has an average scale reliability of alpha 0.94. An oblique varimax factor rotation retained the original three dimensions of burnout as suggested by the developers, namely *physical fatigue*, *cognitive weariness* and *emotional exhaustion*. The retained factors explain 80.45% of the instrument’s total variance. None of the items were deleted.

It can be concluded that the instruments used in this research to be regarded as reliable and valid and that they measure the constructs that they are supposed to measure. This verdict gives a platform for other analyses to be considered in this chapter.

Chapter 2 highlighted the role some biographical characteristics may play in the stress and coping process. In the next section some comparisons are to be made in order to determine any variations in terms of biographical factors.

5.4 DESCRIPTIVE STATISTICS

This section seeks to explain descriptive statistics generated by the various instruments used in this research. Results are discussed in terms of values generated by each dimension or sub-scale of each instrument. Discussions commence with the Organisational Police Stress Questionnaire.

5.4.1 Descriptive statistics of the Organisational Police Stress Questionnaire

Results generated by the Organisational Police Stress Questionnaire are reflected in table 10. *Job demands* reflect the highest mean (21.37) and standard deviation (9.07) followed by *work overload*. *Frustration* generates the lowest mean of 18.69 followed by *uncertainty* with a mean of 19.82. According to the descriptive statistics it can be assumed that police officers are of the opinion that job demands and work overload are the main stressors.

TABLE 5.9
DESCRIPTIVE STATISTICS OF THE ORGANISATIONAL POLICE STRESS QUESTIONNAIRE

Dimensions	N	Mean	Std. Dev	Scale	
				Min	Max
Job demands	505	21.37	9.07	1	7
Uncertainty	505	19.82	7.07	1	7
Work overload	505	20.05	6.73	1	7
Frustration	505	18.69	5.87	1	7
Scale total	505	79.95	24.46	1	7

According to table 5.9, those activities that require extraordinary efforts on a daily basis are causing the most stress among respondents. For example, police officers are under perceived pressure to volunteer to work longer hours in their free time. As a consequence, they cannot plan after hours activities with their families or friends. In addition, police managers become intolerant if someone does not complete certain activities before or on due dates, like being ready for routine inspections. Such due dates are interfered with an unsympathetic court system which places additional pressure to adapt to work or investigation schedules in order to suit the justice system. While officers are expected to continue investigations or other urgent obligations, they

must sit in courtrooms to wait for their turn to give evidence. In the meantime, workload is piling up. Sympathetic prosecutors can ease the situation by arranging a specific time when officers are expected to give evidence in court. In addition, police officers are hammered by defence lawyers about the quality of exhibits they bring to court. To make things worse, as a result of inadequate equipment, criminals are far ahead of the justice system. Such a scenario creates more stress and frustration, it can be speculated that where some experienced police officers might accept that equipment is inadequate, they might challenge criminals with orthodox and unsophisticated means to bring them to book.

When the workload is piling up, officers experience a management outcry to take more responsibility and to be accountable for complaints from the unsupportive public. Besides the fact that the frustration sub-scale generated the lowest mean, it is clear that this scale interacts with the daily hassle scale and therefore both become stressors. Those who are not frustrated by the day-to-day routine and its demands, might perceive it as a challenge or go with the flow.

Lack of support by managers and insufficient public support, give reason for uncertainty among police officers as indicated in the empirical results. For example, during unsympathetic situations, when police management fail to assist officers with more comfortable court arrangements, such officers begin to doubt their superiors' overall loyalty in difficult situations.

The above results support those reported by other researchers implying that daily hassles and high demands are the main cause of police stressors (Bakker et al., 2004; McCreary & Thomson, 2006; Stinchcomb, 2004). With regard to work overload, this research also correlates with results detected by Lord (2005) in an American police sample where work overload was rated the highest, and eventually the main cause of organisational stress. The overall assumption that can be made, is that this research's results correlate with several possible stressors elicited from focus groups in a study conducted by McCreary and Thomson (2006). Examples are excessive workload, dealing with supervisors, dealing with co-workers and dealing with courts and the

organisation. With these findings in mind, it seems that the above aspects are responsible for police organisational stressors among different research samples. A last remark that can be made, is that it seems that the dimensions measured by the various sub-scales, are in interaction with each other despite a differentiation between means.

The next instrument's descriptive statistics to be considered for discussion in the following section, is the Multidimensional Scale of Perceived Social Support.

5.4.2 Descriptive statistics of the Multidimensional Scale of Perceived Social Support

The above instrument contains three dimensions of perceived social support that are displayed in table 5.10 together with descriptive statistics generated by this research sample. *Family support* reflects the highest mean of 22.32 which is an indication that respondents rely mostly on family members for support. The latter is followed by *Significant other* which displays the second highest mean (21.36). The dimension *Friend support* generates the lowest mean. Table 5.1 showed that 61.78% of the respondents are married and therefore it is understandable that respondents are more reliant on "family support" as a perceived source of support.

TABLE 5.10
DESCRIPTIVE STATISTICS OF THE MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT

Dimensions	N	Mean	Std. Dev	Scale	
				Min	Max
Family support	505	22.32	4.95	1	7
Friend support	505	18.65	5.86	1	7
Significant other	505	21.36	5.58	1	7
Scale total	505	62.34	13.02	1	7

The descriptive statistics substantiate researchers' (Lord, 2005; Moos, 1986; Stephens, 2005) postulate that the individual's social life and work are in interaction with each other. Respondents indicated that they employ family support as a source and is lesser reliant on a significant other (e.g. supervisors and co-workers) while being least reliant on support from friends. The majority of respondents are married (61.78%) and is it expected that police officers rely more on family resources than friends due to confinement to confidentiality and non-disclosure clauses that form the nature of police contracts. However, family members are not excluded from these clauses. In the previous section it was indicated that it is possible that police managers might be reluctant to support subordinates in difficult situations. This reluctance is not reflected in these results (significant other), but what is reflected is that co-workers very close to respondents probably play an important role as a source of social support.

Stephens (2005) is of the opinion that, despite a variety of resources available to them, police officers should expect more support from supervisors and co-workers to relieve the effects of work related stressors, instead of support from people external to the organisation. In terms of this research's results, the significant other sub-scale should have reflected a higher mean than family support. The results generated in this research are more of a contradiction than expected, and it therefore can be assumed that police officers are not encouraged to approach supervisors and co-workers. Lack of trust in a multi-cultural composition of the police work scene might be a reason for this tendency. However, such a possibility should be explored in other research projects.

The next instrument's descriptive statistics to be discussed, is the Five Factor Inventory. Such discussion takes place in the following section.

5.4.3 Descriptive statistics of the Five Factor Inventory

The Five Factor Inventory has five dimensions and the descriptive statistics of each instrument are displayed in table 5.11.

The sub-scale *pleasantness versus agreeableness* generated the highest mean (36.36) followed by *conscientiousness versus dependability* with a mean of 36.50. The lowest

mean was generated by the *emotional stability* scale with a mean of 22.67 followed by the *introversion versus extraversion* scale with a mean of 28.70. The lower mean of the *introversion versus extraversion* scale is indicative of some police officers reported as being outgoing or extroverts.

According to researchers (Arthur, Woehr & Graziano, 2001; Reynolds, Turner, Haslam & Ryan, 2001), research results about personality have almost no meaning when collected in group context, unless it is used to determine relationships between variables or constructs, or in the case of structural modelling analyses. Although people are categorised for example as introverts or extroverts, personality tools are actually developed to individualise respondents. Furthermore, practitioners usually attempt to categorise individuals into a broad category of a specific trait. Therefore, the descriptive statistics reflected in table 5.11 have limited meaning in a group context. However, a few broad assumptions could be made despite the limitation.

TABLE 5.11
DESCRIPTIVE STATISTICS OF THE FIVE FACTOR INVENTORY

Scale dimensions		N	Mean	Std. Dev	Scale	
					Min	Max
Intro - Extraversion	IE	505	28.70	7.92	1	9
Pleasantness - Agreeableness	PA	505	36.36	7.05	1	9
Conscientiousness - Dependability	CD	505	36.50	7.26	1	9
Emotional Stability	ES	505	22.67	8.88	1	9
Closed - Openness	CO	505	33.60	7.18	1	9
Scale total		505	157.84	24.77	1	9

The results support the existence of two possible extremes on a continuum, for example the *introversion - extraversion* scale reflecting such a polarity. Respondents further reflected a balance between the *introversion* and *extraversion* pole. In addition, the low

mean of emotional stability indicates that a large proportion of the participants tend to be relaxed, at ease and unemotional, while some participants do reflect that they are tense, nervous and emotionally loaded. Even this sub-scale reflects a balance between two poles. The high scores on the *pleasantness - agreeable* scale as well as the *conscientiousness - dependability* sub-scales indicate that the majority of respondents experiencing themselves to be cooperative, organised responsible and hardworking. According to Kerley (2005) as well as Paton (2005), police officers who are burned-out usually become emotional, unstable, indecisive, and cynical. Given that burnout is contagious (Shirom, 2003b) such serious pathology cannot be detected in the sample in a group context. While the above instrument reflects the research results of personality, the next explains outcomes of the Brief COPE Inventory.

5.4.4 Descriptive statistics of the Brief COPE Inventory

Table 5.12 displays the descriptive statistics of the 14 dimensions Brief COPE Inventory.

Every dimension represents two strategies each. *Positive reframing* reflects the highest mean of 6.39 followed by *planning* with a mean of 6.40. *Active coping* (6.21) and *religion* (6.03) also have means greater than six. The lowest mean is generated by *substance use* with a mean of 3.39 followed by *self-blame* with a mean of 3.93. The high means of *active coping* (6.21) and *planning* (6.40) is indicative of a large portion of the group that use direct coping strategies in order to overcome stressful situations.

Considering the above statistics, especially *active coping*, *planning* and *positive reframing*, it seems that the majority of respondents engage in adaptive responses in order to deal with a threatening situation. Violanti (2005) describe “adaptive” responses as responses that are directed to problem-solving or repositioning towards a problem.

TABLE 5.12
DESCRIPTIVE STATISTICS OF THE BRIEF COPE INVENTORY

Scale dimensions	N	Mean	Std. Dev	Scale	
				Min	Max
Active coping	505	6.21	1.53	1	4
Planning	505	6.40	1.50	1	4
Positive reframing	505	6.39	2.15	1	4
Acceptance	505	5.89	1.65	1	4
Humour	505	4.70	2.08	1	4
Religion	505	6.03	1.79	1	4
Seek emotional support	505	5.46	1.76	1	4
Seek instrumental support	505	5.38	1.79	1	4
Self-distraction	505	5.60	1.67	1	4
Denial	505	4.44	1.96	1	4
Venting	505	4.69	1.79	1	4
Substance use	505	3.39	1.95	1	4
Behaviour disengagement	505	3.94	1.92	1	4
Self-blame	505	3.93	1.96	1	4
Scale total	505	72.50	12.98	1	4

On the other hand “maladaptive” responses take place when someone cannot remove him or herself from job stress. Further, the said adaptive responses depicted in table 5.13 may also be indicative of stressors that are regarded as challenges to be and immediately dealt with. The high mean reflected for *religion* correlates with a similar finding among police officers in South Africa conducted by Pienaar and Rothmann (2003) where religion was seen as a prominent strategy in South Africa to deal with stress.

A second assumption that can be made about the statistics in table 5.13, is that except

for *acceptance* and *self-distraction*, a second coping strategy that emerges among the respondents' is actively looking for *emotional or instrumental support*. This assumption correlates with the statistics displayed for social support (table 5.10) indicating that respondents rather revert to family members for social support than other sources. The statistics displayed for coping strategies (table 5.12) further correlate with Haarr and Morash's (2005) findings that police officers employ a wide variety of strategies when stress levels are high, and vice versa. The means of more than half of the strategies displayed in table 5.12 are above 5.00. This finding shows that a significant proportion of respondents in this sample experience high stress levels and employ a variety of strategies.

The above explained the descriptive results of the Brief COPE Inventory. The Shirom-Melamed Vigour Measure (SMVM) is the following instrument's descriptive statistics for discussion.

5.4.5 Descriptive statistics of the Shirom-Melamed Vigour Measure (SMVM)

Table 5.13 is a reflection of the descriptive statistics of the SMVM generated by the three dimensions physical strength, cognitive liveliness and emotional energy.

The *cognitive liveliness* dimension generated the highest mean (24.60) followed by physical strength with a mean of 22.47. *Emotional energy* has the lowest mean of 20.90. The greater means of *cognitive liveliness* and *physical strength* indicate a large portion of respondents reflecting a vigorous outlook towards their day-to-day situation. In fact, the lower mean displayed by emotional energy is indicative of one dimension that confirms some stress experienced by the group sampled (Shirom, 2003a, 2003b).

The instrument is quite new and has not been used in many studies before. Comparisons with other studies is limited. However, Shirom (2003a, 2007a) indicated that the three dimensions of vigour are independent and in interaction with each other.

TABLE 5.13
DESCRIPTIVE STATISTICS OF THE SHIROM-MELAMED VIGOUR MEASURE
(SMVM)

Scale dimensions	N	Mean	Std. Dev	Scale	
				Min	Max
Physical strength	505	22.47	6.35	1	7
Cognitive liveliness	505	24.60	6.26	1	7
Emotional energy	505	20.90	5.03	1	7
Scale total	505	67.98	15.54	1	7

This postulate can be confirmed by the dimensions displayed in table 5.13. *Cognitive liveliness* and *physical strength* have the greater means indicating the vitality of the respondents. However, the lower *emotional energy* is indicative of a large portion of the group that spend a lot of emotional energy on stressors (Shirom, 2003a, 2003b). This lower reflection of *emotional energy* indicates a coupling effect between vigour on the one hand and burnout on the other hand. In order to avoid confusion in this section, such coupling effect is discussed in section 5.4.7.

When considering the results displayed in table 5.13, it can be assumed that the respondents have indicated their vigorous outlook on their work life, with a high price in dealing simultaneously with organisational stressors. The latter is discussed in section 5.4.7.

Whereas vigour represents the fortigenic part of the research sample, burnout rather represents the pathogenic part. The descriptive statistics generated by the Shirom-Melamed Burnout Measure (SMBM) will therefore be discussed in the next section.

5.4.6 Descriptive statistics of the Shirom-Melamed Burnout Measure (SMBM)

Table 5.14 reflects the descriptive statistics generated by the SMBM and its three subscales *physical fatigue*, *cognitive weariness* and *emotional exhaustion*. The physical

fatigue scale generated the highest mean (14.40) followed by emotional exhaustion with a mean of 13.51. *Cognitive weariness* is left with the lowest mean of 12.42. The high means of physical fatigue and emotional exhaustion support the results of the SMVM which measures the opposite of the SMBM. As mentioned in section 5.4.5, a large portion of the group spends a lot of energy on stressors, therefore *physical fatigue* and *emotional exhaustion* indeed reflect a stage where respondents are physically and emotionally drained.

The higher means of *physical fatigue* and *emotional exhaustion* indicate that a proportion of the respondents experience some form of negative affect. The results reflected in table 5.14 are typical of people suffering from burnout. According to Shirom (2005) and others (Shirom, 2003b; Toker, Shirom, Shapira, Berliner & Melamed, 2005) low *physical* and *emotional energy* are core components of burnout. Furthermore, like vigour, the above dimensions are also in interaction with each other as suggested in Shirom et al. (2006).

TABLE 5.14
DESCRIPTIVE STATISTICS OF THE SHIROM-MELAMED BURNOUT MEASURE
(SMBM)

Scale Dimensions	N	Mean	Std. Dev	Scale	
				Min	Max
Physical fatigue	505	14.50	5.64	1	7
Cognitive weariness	505	12.42	6.01	1	7
Emotional exhaustion	505	13.51	6.66	1	7
Scale total	505	40.59	16.42	1	7

The above findings are further supported by additional research outcomes. *Emotional exhaustion*, a dimension of the Maslach Burnout Inventory (MBI) (Maslach, 1982) overlaps with the instrument used in this research. An interpretation of the said instrument also rates low *emotional energy* is indicative of burnout. Furthermore, Kerley (2005) is of the opinion that burned-out individuals experience problems with both physical and *emotional energy*. Research in police context confirm depleted emotional

energy in the case of individuals experiencing burnout (Kerley, 2005). Depleted emotional energy may most probably be detected in the individual dopamine metabolism, associated with positive affect, and serotonin associated with negative affect (Flory, Manuck, Matthews & Muldoon, 2004; Ostir, Kyriakos, Markides, Peek & Goodwin, 2001; Ostir, Simonsick, Kasper & Guralnik, 2002). The latter explains why decreased serotonin levels are more conducive to vigour. The dopamine-serotonin theory further gives reasons why burned-out individuals also experience depression (Davison et al, 2003; Shirom, 2007b). However, due to the magnitude of this research, depression is not measured and it could only be speculated that some of the respondents may have suffered from depression during the data collection phase.

Whereas the former two sections dealt with vigour and burnout separately, the next section deals with results indicative of a coupling effect between vigour and burnout.

5.4.7 Coupling effect between vigour and burnout

As mentioned in section 4.7 (see chapter 4) authors (Cacioppo et al., 1999; Shirom, 2004; Watson et al., 1999) suggest burnout as a negative affective response. Furthermore, the same authors explain vigour as a positive affective coping response that is obliquely or negatively related to burnout. As observed in the aforementioned sections (5.4.5 and 5.4.6), it seems that the data generated by the relevant instruments reflect a possible coupling effect between vigour and burnout in terms of the respective sub-scales of *emotional energy* and emotional exhaustion.

This coupling effect is most probably due to high stress levels manifested by the research sample. Such coupling effect is the only exception in the positive-negative-affect-independence postulate as suggested by Shirom (2003a, 2003b). Reich, Zautra and Davis (2003) support the possibility of such an effect.

Some other positive-negative-affect relationship were also observed in data displayed by tables 5.13 and 5.14. *Physical strength* reflects a lower mean in comparison with *physical fatigue*. Adversely, *cognitive liveliness* reflects a substantial higher mean in comparison with the other vigour dimensions, while its counterpart, *cognitive weariness*, reflects a lower mean in comparison with the other burnout dimensions. However, it

seems that the latter dimensions are not part of a coupling effect, but rather demonstrate high levels on the one dimension while lower levels are reflected on the opposite dimension.

The above sections dealt with descriptive statistics generated by the measuring instruments used in this research. The next section deals with the hypotheses set in chapter 4 and consequently implies that inferential statistics are to be used to achieve the further research objectives.

5.5 HYPOTHESIS TESTING

In chapter 4, 14 hypotheses were formulated. The purpose of this section is to test these hypotheses by means of inferential statistics. The analyses of this section commence with hypothesis 1.

5.5.1 Hypothesis 1: Women experience significantly more stress than men

Table 5.15 displays descriptive statistics of the male and female gender groups as measured by the biographical and Organisational Police Stress Questionnaire (OPSQ).

TABLE 5.15
COMPARATIVE STATISTICS BETWEEN GENDER GROUPS' EXPERIENCE OF STRESS

Gender	N	Mean	Std. Deviation	Std. Mean Error
Male	350	81.28	24.35	1.30
Female	155	76.94	24.53	1.97

Males are in the majority while their mean is also greater than the female group. In order to test the hypothesis and the presence of any significance, an independent t-

test has to be executed. Table 5.16 presents the statistics of Levene's test of variance equality as well as the independent t-test of mean variance.

TABLE 5.16
TESTS FOR EQUALITY OF VARIANCES AND EQUALITY OF MEANS (T-TEST):
GENDER GROUPS' EXPERIENCE OF STRESS

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Err. Dif.	95% Confidence	
								lower	upper
Equal variances assumed	0.05	0.821	1.846	503	0.066	4.347	2.355	-0.280	8.973
Equal variances not assumed			1.840	293	0.067	4.347	2.362	-0.302	8.995

Levene's test for equality of variances revealed that the homogeneity of variance assumption is met for $p = 0.821 > 0.05$, two-tailed. There was no significant variance differences between the males and females. An independent sample t-test revealed that $t = 1.843$, $df = 503$, $p = 0.066 > 0.05$. Both groups' statistics are reflected at a confidence level of 95%.

Hypothesis 1 can therefore be rejected as there is no significant difference between the stress levels of males and females with regard to this sample. A further assumption is that the experience of stressors by both male and females are relatively even. The above results support findings documented by Haarr and Morash (1999) that male and female officers experience stress evenly. However, it is in contrast with the findings by Van Wyk (2005) that women experience more stress than men. The results do not agree with findings by Berg et al. (2005) suggesting women experiencing greater stress levels than men. The fact that no difference exists between these gender groups may be interpreted that the additional roles females must play in work and society is not

experienced as a burden, as reflected in the survey.

5.5.2 Hypothesis 2: Ethnical minority groups (i.e white, coloured and Indian) experience more stress than the ethnical majority

Table 15.17 depicts comparative descriptive statistics between ethnical groups' (black, white, coloured and Indian) and their respective experiences of police stress as measured by the biographical and Organisational Police Stress Questionnaire (OPSQ). The black group is in the majority with a mean of 75.59 and a standard deviation of 23.20. The respective minority groups are far less than the black group.

**TABLE 5.17
COMPARATIVE STATISTICS BETWEEN ETHNICAL GROUPS**

Ethnic	N	Mean	Standard deviation	Standard error
Black	257	75.59	23.20	1.44
White	174	84.66	24.41	1.85
Coloured	63	85.55	27.08	3.41
Indian	11	75.36	20.68	6.23
Total	505	79.95	24.46	1.08

The Indian group has 11 respondents and is the smallest minority with a mean of 75.36 which is almost equal to the black minority group. The means of the white and colour groups however differ from these former groups.

Before the significance of the mean differences can be estimated through a one-way analysis of variance (ANOVA), Levene's test for equality of variance was conducted. The homogeneity of variance assumption was met for $t = 1.762$, $df = 501$, $p = 0.153$, two-tailed. Furthermore, as recommended by Kerr, Hall and Kozub (2002) the skewness and kurtosis levels divided by its respective standard error is less than ± 1.96 and the sub-group samples can be regarded as normally distributed. Therefore, the independent

group samples can be regarded as normally distributed. During the consideration of the above, a confidence level of 95% was implemented.

Table 5.18 displays statistics generated by a one-way analysis of variance between the ethnical groups represented in the sample.

There was a significant effect presentation for $F_{(3,501)} = 6.292$, $p 0.000 < 0.05$. Thus, it can be assumed that at least one of the means is significantly different from the other three. To determine which mean(s) means differ, the Tukey post-hoc test was executed. Employing the post-hoc test, significant differences were found between black and white respondents ($p 0.001 < 0.05$). There was no significant difference between the black and coloured group ($p 0.14 > 0.05$), black and Indian groups ($p 1.0 > 0.05$), between the Indian group and whites ($p 0.060 > 0.05$), as well as between the Indian and coloured group ($p 0.056 > 0.05$).

TABLE 5.18
ANOVA OF ETHNICAL GROUPS

	Sum of squares	df	Mean square	F	Sig.
Between groups	10954.756	3	3651.585	6.292	0.000
Within groups	290747.196	501	580.334		
Total	301701.952	504			

The research hypothesis can therefore be accepted as for at least one of the minority groups is experiencing more stress than the majority group. It can further be assumed that some ethnical groups experience stress differently and that some are perceiving stressors as more severe than others. The above results support findings by Copes (2005) as well as Morash et al. (2006) that ethnical minorities experience higher stress levels than those in majority. In this case whites are in the minority and experience high stress levels. Although speculation, the higher stress levels among whites is probably

because they feel they must work harder than majority groups and may experience a difficulty to deal with a co-worker in that group as they feel that they are politically dominated.

5.5.3 Hypothesis 3: Officers in lower ranks experience significantly more stress than higher ranks

Table 5.19 depicts comparative statistics of the various ranks represented in the research sample as measured by the biographical Organisational Police Stress Questionnaire (OPSQ). The group Captain to Superintendent represents the largest proportion of the sample followed by Constables. Captain to Superintendent also represent the middle management level in the Police Service while Constables can be regarded as the group of officers that are the closest to organisational and operational

TABLE 5.19
COMPARATIVE STATISTICS POLICE RANKS' EXPERIENCE OF STRESS

Rank	N	Mean	Std. Deviation	Std. Error
Recruit	7	70.57	32.85	12.41
Constable	138	79.41	25.03	2.13
Sergeant	38	82.47	25.08	4.06
Inspector	118	85.82	24.80	2.28
Capt-Supt	171	77.95	22.63	1.73
Other	33	70.69	24.07	4.19
Total	505	79.95	24.46	1.08

functions. However, when comparing the means of the various groups one senses that the Inspector group reflects the highest mean followed by Sergeants. As explained in chapter 2, some authors (Copes, 2005; Morash et al., 2006; Violanti, 2005) are of the opinion that lower ranks such as Sergeants, who actually are functionally employed, do experience more stress than higher ranks as a result of dualistic responsibilities that arise out of functional duties, including the burden of supervising lower ranks that

demands more administrative responsibilities. Before one assume that the above variations between sample means can be regarded as without error, a one-way analysis of variance (ANOVA) is to be executed. To address the question of homogeneity, Levene's test for equality of variances revealed that the homogeneity of variance assumption is met. There was no significant variance differences between the males and females for $t = 1.650$, $df = 5$, $p = 0.145$, two-tailed. Further, as recommended by Kerr et al. (2002) the skewness and kurtosis levels divided by its respective standard error is less than ± 1.96 and the sub-group samples can be regarded as normally distributed.

To determine whether any significance between the mean variances exists, an ANOVA was executed. Table 5.20 reflects the statistics generated by this ANOVA. A confidence level of 95% was implemented.

TABLE 5.20
ANOVA OF POLICE RANKS' EXPERIENCE OF STRESS

	Sum of squares	df	Mean square	F	Sig.
Between Groups	8473.450	5	1694.690	2.884	0.014
Within Groups	293228.503	499	587.632		
Total	301701.952	504			

The ANOVA results reveal a significant effect presentation for $F_{(5,499)} = 2.884$, $p 0.014 = < 0.05$. It can further be assumed that at least one of the means is significantly different from the other five. To determine which mean differs from the other, a post hoc test was run (Bryman & Cramer, 1999). Tukey's test revealed a significant difference between Inspectors and "other" ranks for $0.019 < 0.05$.

It can be accepted that the statistical results confirm that at least Inspectors experience higher stress levels but the analysis fails to confirm that Inspector's stress levels are higher than their superiors (e.g. Captain-Superintendent). Therefore the hypothesis

cannot be accepted. The above findings support those of Kirkcaldy et al. (1998) as well as an earlier study by Brown and Campbell (1994) that lower ranks usually experience higher stress levels than higher ranks. These two studies are supported by similar findings in a Norwegian police sample (Berg et al., 2005).

5.5.4 Hypothesis 4: Officers with lesser years of service experience significantly more stress than those with more experience

Table 5.21 depicts comparative statistics of mean differences among the various members in terms of years of service in the police service environment as measured by the biographical and Organisational Police Stress Questionnaire (OPSQ). The group having between 11 - 15 years of service is the largest proportion followed by the group having between 16 - 20 years of service.

**TABLE 5.21
COMPARATIVE STATISTICS YEARS OF SERVICE AND STRESS EXPERIENCE**

Years of service	N	Mean	Std. Deviation	Std. Error
< 3 yrs	60	77.45	27.87	3.59
3-5 yrs	90	77.91	25.01	2.63
6-10 yrs	26	88.92	27.90	5.47
11-15 yrs	140	81.04	22.18	1.87
16-20 yrs	118	81.44	23.35	2.14
21 + yrs	71	76.76	25.20	2.99
Total	505	79.95	24.46	1.08

According to the means displayed in table 5.21, the group with 6 - 10 years of service experiences the most stress followed by the groups 11-15 and 16 - 20 years of service respectively. Before one assumes that the above variations between sample means can be regarded as significant, a one-way analysis of variance (ANOVA) is to be executed.

Firstly, the question of homogeneity of variances is to be answered.

Levene's test for equality of variances revealed that the homogeneity of variance assumption is met. There was no significant variance differences between the various groups in terms of their years of service and levels of stress experienced for $t = 1.543$, $df = 5$, $p = 0.175$, two-tailed. A confidence level of 95% was implemented. To determine whether there is any significance between the mean variances, an ANOVA was executed. Table 5.22 reflects the statistics generated by this ANOVA.

The ANOVA results reveal that the research hypothesis cannot be accepted for $F_{(5,499)} = 1.339$, $p 0.246 > 0.05$ because there is no significant difference between the means of the various levels of years of service.

TABLE 5.22
ANOVA OF YEARS OF SERVICE AND STRESS EXPERIENCE

	Sum of squares	df	Mean square	F	Sig.
Between Groups	3994.210	5	798.842	1.339	0.246
Within Groups	297707.742	499	596.609		
Total	301701.952	504			

The above results revealed that tenure is not a predictor of stress levels. Kerley (2005) found that officers with years of service between 8 and 13 years respectively, usually experience more stress than officers with lesser or more years of service. Table 5.21 indicates that the group between 6 and 10 years experiences the highest stress levels and is more or less what Kerley (2005) also observed. However, most probably as a result of the small sample size of this specific category, the variation with other categories is not significant. While considering the sample as a whole, it can be assumed that no significant difference exists between officers with different years of service.

5.5.5 Hypothesis 5: Married officers experience significantly more stress than single or divorced officers

Table 5.23 depicts comparative statistics of mean differences among the various members in terms of their marital status as measured by the biographical and the Organisational Police Stress Questionnaire (OPSQ). The married group's mean is the highest with a mean of 81.31 followed by the single group with a mean of 78.06. The lowest mean is presented by the divorced group.

**TABLE 5.23
COMPARATIVE STATISTICS MARITAL STATUS AND EXPERIENCE OF STRESS**

Rank	N	Mean	Std. Deviation	Std. Error
Single	163	78.06	22.98	1.80
Married	312	81.31	25.29	1.43
Divorced	30	76.13	23.13	4.22
Total	505	79.95	24.46	1.08

It should be mentioned that during the survey, respondents were requested to consider "single" as someone who has never been married before, "married" as someone who is married in terms of the country's or custom laws, or who stays with a partner permanently, and divorced people who were married before, but who are single at the time of the survey. Levene's test for equality of variances revealed that the homogeneity of variance assumption is met. There was no significant variance differences between the various groups in terms of their marital status and levels of stress experiencing for $t = 0.731$, $df = 2$, $p = 0.482$, two-tailed. A confidence level of 95% was implemented. In order to determine whether the differences between means can be regarded as significant, an ANOVA was executed.

Table 5.24 reflects the statistics generated by this ANOVA. A confidence level of 95% was implemented. The ANOVA results reveal that the research hypothesis is not to be accepted for $F_{(2,502)} = 1.335$, $p = 0.264 > 0.05$ because there is no significant difference between the means of single, married or divorced police officers.

TABLE 5.24
ANOVA OF MARITAL STATUS AND MEMBERS' EXPERIENCE OF STRESS

	Sum of squares	df	Mean square	F	Sig.
Between Groups	1596.256	2	798.128	1.335	0.264
Within Groups	300105.696	502	597.802		
Total	301701.952	504			

The above results do not support findings by Berg et al. (2005) that those who are single or separate experience higher stress levels than those who are married. Loo (2005) rather found a higher incidence of suicide among married officers than single or divorced officers assuming that stress is the cause of such action.

5.5.6 Hypothesis 6: Officers with high educational qualifications experience significantly more stress than those with lower qualifications

Table 5.25 displays comparative statistics of mean differences among the various members in terms of their educational levels. Data were collected with the biographical and Organisational Police Stress Questionnaire (OPSQ). The graduate group is the greatest with a mean of 84.17 followed by the group with diplomas that reflects a mean of 82.22. The group with a qualification lower than matric as well as the post graduate group reflect the lowest means (77.66 and 78.50 respectively).

Once again, the possibility of chance must be ruled out and a one-way analysis of variance (ANOVA) is required to address this question. Firstly the question of equality of variance must be answered. In accordance with Levene's test for equality of variances the homogeneity of variance assumption is met.

TABLE 5.25
COMPARATIVE STATISTICS OF EDUCATION LEVEL AND EXPERIENCE OF STRESS

Rank	N	Mean	Std. Deviation	Std. Error
< Matric	21	77.66	29.06	6.34
Matric	289	78.48	25.02	1.47
Diploma	150	82.22	23.73	1.93
Graduate	35	84.17	18.79	3.17
Post grad.	10	78.50	26.58	8.40
Total	505	79.95	24.46	1.08

There was no significant variance differences between the various groups in terms of their educational levels and stress levels experienced for $t = 2.206$, $df = 4$, $p = 0.067$, two-tailed. A confidence level of 95% was implemented. Furthermore, as recommended by Kerr et al. (2002) the skewness and kurtosis levels divided by its respective standard error is less than ± 1.96 and the sub-group samples can be regarded as normally distributed. The researcher is free to execute an ANOVA to determine whether any significance exists between the mean variances (Kerr et al., 2002). Table 5.27 reflects statistics generated by this ANOVA. A confidence level of 95% was implemented.

TABLE 5.26
ANOVA OF EDUCATIONAL LEVEL AND MEMBERS' EXPERIENCE OF STRESS

	Sum of squares	df	Mean square	F	Sig.
Between Groups	2147.894	4	536.974	0.896	0.466
Within Groups	299554.05	500	599.108		
Total	301701.952	504			

The ANOVA results reveal that the research hypothesis cannot be accepted for $F_{(4,500)} = 0.896$, $p = 0.466 > 0.05$. It can be assumed that all employees experience more or less the same stress level irrespective of their qualification. Whereas Kirckaldy et al. (1998) revealed that highly educated officers report higher stress levels this research could not confirm such findings. No other comparative studies assessing the role of educational level's role in stress perception could be found. If the above findings of Kirkcaldy et al. (1998) can be generalised, an assumption could be made that in the case of this study, officers with higher qualifications might experience stress similarly, but due to their education have a better understanding in how to deal with such a phenomenon.

5.5.7 Hypothesis 7: In terms of reliance on social support, black and Indian groups are significantly more reliant than whites and coloureds

Table 5.27 displays comparative statistics regarding the various ethnical groups' reliance on social support as measured by the biographical questionnaire and Multidimensional Scale of Perceived Social Support (MSPSS). The means of the white, coloured and Indian groups are more or less equal while the black group's mean is the lesser of the other three groups.

**TABLE 5.27
COMPARATIVE STATISTICS OF ETHNICAL GROUPS AND THEIR RELIANCE ON
SOCIAL SUPPORT**

Group	N	Mean	Std. Deviation	Std. Error
Black	257	61.42	12.84	0.80
White	174	63.38	13.57	1.02
Coloured	63	63.12	12.67	2.90
Indian	11	63.09	9.62	0.57
Total	505	62.34	13.02	0.57

Whilst ANOVA served as a technique to analyse the means of the former hypotheses, such analysis is not justifiable in this case, because the homogeneity of variance assumption could not be met for $t = 0.541$, $df = 3$, $p = 0.655$, two-tailed. Further, the skewness of the data divided by its respective standard error is greater than ± 1.96 for the skewness divided by the standard error is 8.75. It means that the data can be assumed not to be normally distributed. In this case the Kruskal-Wallis test, which is a nonparametric equivalent of the one-way between subjects analysis of variance, is

TABLE 5.28
ETHNICAL GROUPS RELIANCE ON SOCIAL SUPPORT

Ethnical group	N	Mean rank
Black	257	24213
White	174	26782
Coloured	63	25621
Indian	11	25400
Total	505	

considered (Brace, Kemp & Snelgar, 2000). Table 5.28 is the Kruskal-Wallis test comparing the various ethnical groups' reliance on social support. The calculated value for the Kruskal-Wallis test is 3.254 which is assessed for significance using X^2 (Brace et al., 2000). For the confidence rating there was no significant effect of reliance on social support for the four ethnical groups ($X^2 = 3.254$, $df = 3$, $p 0.354 > 0.05$). The implications of the above results is that none of the ethnical groups' mean rank order differ significantly from the other groups and that the hypothesis is to be rejected.

The above results could not support findings of Brislin (2000) saying that Africans (in this case blacks) and Indians are more reliant on social support than other groups. Although table 5.27 reveals that whites, coloureds and Indians are more reliant than blacks, such findings are not statistically significant in terms of this research sample. It can be assumed that police officers over the broad ethnical spectrum are evenly reliant on social support during threatening or challenging situations.

5.5.8 Hypothesis 8: Women are significantly more reliant on social support than men

Table 5.29 depicts comparative studies between gender groups' reliance on social support as measured by the biographical and Multidimensional Scale of Perceived Social Support (MSPSS). The females' mean of 63.56 is slightly higher than those of men (61.80). In order to determine any significance of these differences, an independent sample t-test was to be executed.

TABLE 5.29
COMPARATIVE STATISTICS BETWEEN GENDER GROUPS' RELIANCE ON SOCIAL SUPPORT

Gender	N	Mean	Std. Deviation	Std. Error
Male	350	61.8	13.14	0.70
Female	155	63.56	12.69	1.01

Table 5.30 presents the statistics of Levene's test of variance equality as well as the independent t-test of mean variance. Levene's test for equality of variances revealed that the homogeneity of variance assumption is met for $p = 0.600 > 0.05$, two-tailed. There was no significant variance differences between the males and females. An independent sample t-test revealed that $t = -1.404$, $df = 503$, $p = 0.161 > 0.05$. Both groups' statistics are reflected at a confidence level of 95%. The research hypothesis can therefore be rejected as no gender group is more reliant on social than support the other.

The above results have no direct evidence to support Sarafino (2000) and Wellbrock's (2000) opinion that women tend more to engage in social networks than men. Furthermore, a speculation by Pierce et al. (1996) and Sarafino (2002) that men might be more in need of social support than women, due to higher levels of perceived stress, was not confirmed by the above statistics. In a study conducted by Roberts and Levenson (2001) among male police officers in the USA, it was revealed that due to the

spillover effect of stress, communication and relationships between them and their wives were reported to be more defensive, in particular at times when such officers experience high levels of stress. This was the case even when couples reported overall marital happiness and satisfaction. Once again, a statement that men are more reliant

TABLE 5.30
TESTS FOR EQUALITY OF VARIANCES AND EQUALITY OF MEANS (T-TEST):
GENDER'S RELIANCE ON SOCIAL SUPPORT

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Err. Dif.	95% Confidence Interval	
								lower	upper
Equal variances assumed	0.276	0.600	-1.404	503	0.161	-1.76	1.255	-4.227	0.703
Equal variances not assumed			-1.404	304.709	0.156	-1.76	1.238	-4.198	0.674

on social support due to higher stress levels than women cannot be supported in terms of this research sample. It is already explained in section 5.5.1 that men and women experience stress evenly in terms of this sample.

5.5.9 Hypothesis 9: There is a significant positive relationship between stress and social support

In order to test the hypothesis, Pearson's r has to be executed. Figure 5.7 is a scatter plot of the relationship between two variables (stress and social support) as measured by the Organisational Police Stress Questionnaire (OPSQ) and the Multidimensional Scale of Perceived Social Support (MSPSS). When Pearson's r was executed there was a significant negative correlation between stress and social support ($r = -0.128$, $n = 505$, $p 0.004 < 0.01$, two tailed).

The above analysis suggests that the research hypothesis be rejected. In terms of the analysis it can also be assumed that police officers do not rely more on social

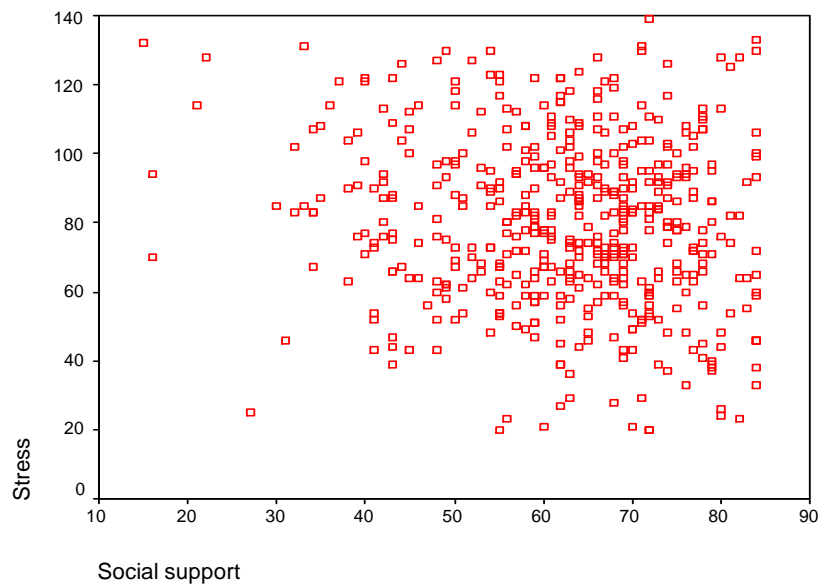


Figure 5.7: Relationship between stress and social support

support when stressors intensify. The result of this correlation can be interpreted that the higher the stress levels the lesser is the impact of perceived social support. This interpretation supports those of Moos (1986, 1994, 1997, 2002) and Paton (2005) suggesting that social support might be stress inducing instead of reducing it. The finding is however in contradiction with other researchers (Cheng & Chan, 2004; Kerley, 2005; Lord, 2005; Zimet et al., 2001) who are of the opinion that social support plays a mediating role during stressful situations.

Lord (2005) holds two propositions about social support. The one is that social support has a beneficial effect irrespective if someone experiences stress. The other is that social support is only important to well-being if the person is experiencing stress. These propositions might be partly explained by findings in this section as well as in section 5.5.14. If the outcome of the Structural Equation Modelling (in section 5.5.14) is considered together with the above correlation result, it can be assumed that social support fades when stress levels increase. Furthermore, this reduction in perceived

social support is more intensified when people become burned-out as burnout is an outcome of the stress and coping process. Due to depersonalisation, burned individuals tend to withdraw from social activities. They might also be less interactive with family members, friends or supporting colleagues. While this sample reveals that the adverse is also true (as mentioned in section 5.5.14). When police officers live a challenging, vigorous and proactive life, social support has a greater meaning in individual's lives than when under severe stress. In contrast with burned individuals, they are more engage in social interaction.

5.5.10 Hypothesis 10: There is a positive relationship between coping resources and coping strategies when controlling for gender

In order to test the hypothesis, any possible relationship between coping resources and coping strategies is to be determined in terms of a bivariate or zero-order correlation (i.e. with no variables controlled) (Bryman & Cramer, 1999), as measured by the Multidimensional Scale of Perceived Social Support (MSPSS) and the Brief COPE Inventory with gender characteristics measured by the biographical questionnaire. A Pearson product moment correlation reveals a weak positive correlation between coping resources and coping strategies for $r = 0.092$, $n = 505$, $p = 0.039 < 0.05$, two-tailed.

Table 5.31

**PARTIAL CORRELATION: COPING RESOURCES AND COPING STRATEGIES:
CONTROLLING GENDER**

	Social Support	Coping strategies
	1.000	0.086
Social support	(0)	(502)
	P = .	P = 0.026
	0.086	1.000
Coping strategies	(502)	(0)
	P = 0.026	P = .

With regard to the hypothesis, it can be assumed that gender does not have any influence on the relationship between social support and coping strategies. The research hypothesis is therefore rejected. The results in table 5.31 (which depicts the results of a partial correlation when controlling for gender) do not support Haarr and Morash's (1999) argument that social support influences women's decision-making when considering coping strategies. The results further disprove an argument by Greenglass (1995) stating that women are more reliant on social support than men. However from this study it can be gathered that if stressors are more gender related (e.g. discrimination in the work situation) such gender group would tend to use social support as a coping strategy. Although speculative, it could however be argued that decision-making during the coping process in the South African context might be different from other countries. Even police samples can be different from other occupations. The finding in this section therefore leads to the hypothesis formulated in the next section.

5.5.11 Hypothesis 11: There is a positive relationship between social resources and coping strategies when controlling for minorities (ie. white, coloureds and Indian groups)

Table 5.32 displays the correlations between social support and coping strategies as measured by the Multidimensional Scale of Perceived Social Support (MSPSS) and the Brief COPE Inventory with ethnical characteristics measured by the biographical questionnaire.

Pearson's product moment correlation reveals a weak positive correlation between social support and coping for $r = 0.092$, $n = 505$, $p = 0.039 < 0.05$, two-tailed. Unlike the testing of the former hypothesis, the number of variables that represent ethnical groups, a partial correlation could not be considered to test this hypothesis. It was decided to employ linear correlation by implementing SPSS's split file function.

The hypothesis cannot be accepted for no significant correlations between social resources and coping strategies could be found when controlling for either one of the four ethnical groups ($p > 0.05$, two-tailed). As in the case of the hypothesis formulated.

The above results did not come as a surprise, because a statistical procedure was used to test the hypothesis in the previous section (see section 5.5.10) where the same sample was used. Instead of gender, ethnicity was controlled in the current hypothesis testing. Because it was the same sample the result would not necessarily be different from the one in the previous section. It can further be interpreted that none of the ethnical groups in this sample tend to rely more on social support as a coping strategy, or as something to support them during stressful or challenging situations. The findings is in contrast with those of Haarr and Morash (2005) who found African Americans to be more reliant on a similar ethnical group for social support. Once again, if stressors are directed to a specific ethnical group (e.g. racial discrimination) it can then be expected that such a group reverts to strategies that rely more on social support. Most probably the experiences of the various ethnical groups are even, because the organisational stress experienced affect all groups evenly.

TABLE 5.32
PEARSON PRODUCT MOMENT CORRELATION BETWEEN SOCIAL SUPPORT
AND COPING STRATEGIES: CONTROLLING FOR ETHNICAL GROUPS

Ethnical	N	Variable	Variable		Sign. 2-tail
			soc. sup	cop.str	
Black	257	soc sup	1	0.091	0.148
		cop. str	0.091	1	
White	174	soc sup	1	0.113	0.139
		cop. str	0.113	1	
Colour	63	soc sup	1	0.220	0.083
		cop. str	0.220	1	
Indian	11	soc sup	1	-0.522	0.100
		cop. str	-0.522	1	

soc.sup = social support; cop.str = coping strategies

In this section the results in table 5.32 do not support an assumption by researchers (Haarr & Morash, 1999; Holahan & Moos, 1990) that social support plays a mediating

role when considering coping strategies. Therefore, in accordance with this research's findings, social support does not have a significance influence when any cultural group considers coping solutions.

5.5.12 Hypothesis 12: Vigour is statistically negatively related to burnout

Figure 15.8 is a scatter plot of the correlation between vigour and burnout as measured by the Shirom-Melamed Vigor Measure (SMVM) and the Shirom-Melamed Burnout Measure (SMBM).

The distribution is moderately negatively related. Pearson's product moment correlation

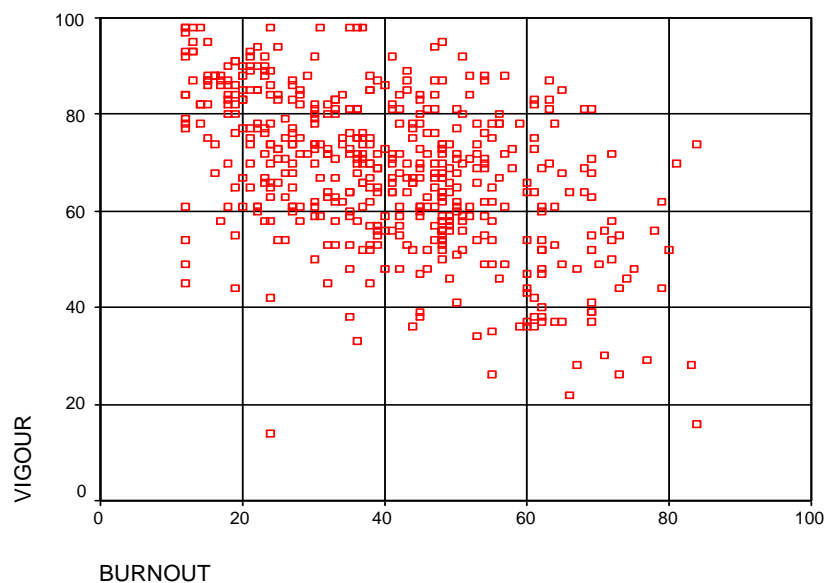


Figure 5.8: Scatter plot of Pearson's product moment correlation: vigour and burnout

confirms this negative relationship for $r = -0.496$, $n = 505$, $p 0.00 < 0.01$, two-tailed. The above analysis confirms the postulate by authors (Cacioppo et al., 1999; Shirom, 2003a, 2003b, 2004; Watson et al., 1999) who suggest vigour as a positive affective coping

response that is obliquely or negatively related to burnout. The research hypothesis can therefore be accepted.

The above result indicates that when an individual lives a challenging, vigorous and proactive life, his or her affective state is positively experienced. In case when individuals experience burnout, who eventually also experience high levels of prolonged or chronic stress, the adverse is true.

A last interpretation of the above is that vigour and burnout are affective states representing distinct components of the human bio-behavioural and motivational systems as suggested by Cacioppo et al. (1999) and Davidson (2000). The negative correlation between the burnout and vigour constructs further implies that an individual cannot reflect both affective states simultaneously. In this case vigour appears as a positive affective state while burnout is a negative affective state. What can be gathered from the sample is that one portion experiences a challenging, vigorous and proactive life while the other portion experiences experience high levels of prolonged or chronic stress.

5.5.13 Hypothesis 13: Vigour and burnout predict to be positive and negative outcomes of experienced stress

Figure 5.9 is a scatter plot distribution of a correlation between stress and vigour as measured by the Shirom-Melamed Vigor Measure (SMVM). The Shirom-Melamed Burnout Measure (SMBM) was used to measure burnout (see figure 5.9).

The distribution appears to be negative. Pearson's product moment correlation confirms a weak to moderate negative relationship between stress and vigour for $r = -0.261$, $n = 505$, $p 0.00 < 0.01$, two-tailed. It means that higher perceived stress reflects low vigour and vice versa.

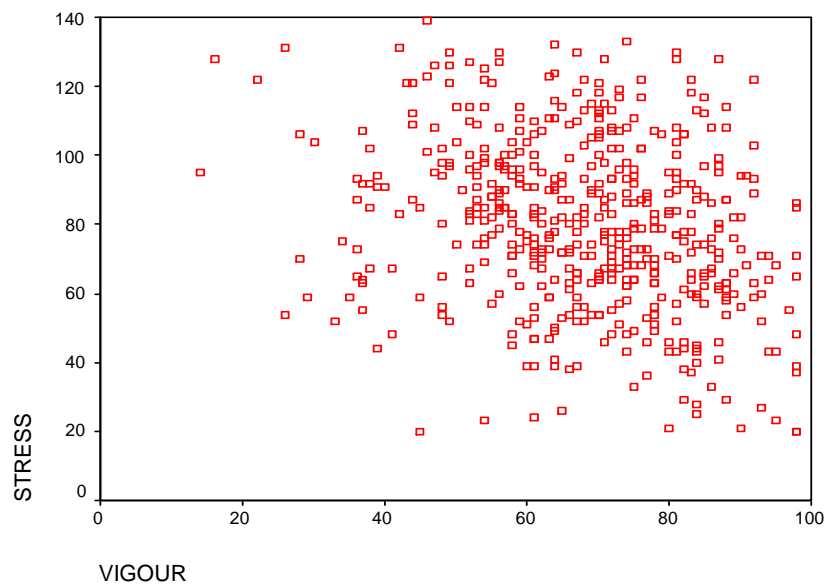


Figure 5.9: Scatter plot of Pearson's product moment correlation: stress and vigour

Figure 5.10 displays a scatter plot of a correlation between stress and burnout. The relationship appears to be positive. Pearson's product moment correlation confirms a moderate positive relationship for $r = 0.446$, $n = 505$, $p 0.00 < 0.01$, two-tailed.

The above analysis further confirms a relationship between high stress levels and burnout. Whereas the relationship between stress and vigour is weaker than in case of stress and burnout, it can be assumed that a significant amount of energy is employed to cope with the consequences of stress. When considering the above analysis, the research hypothesis can be accepted.

Given that an oblique relationship exists between vigour and burnout, a moderate to high negative correlation is expected. Simultaneously, the weak negative relationship between stress and vigour suggests that individuals who live a challenging and proactive life indeed are living a vigorous life, even when exposed to stress. In addition,

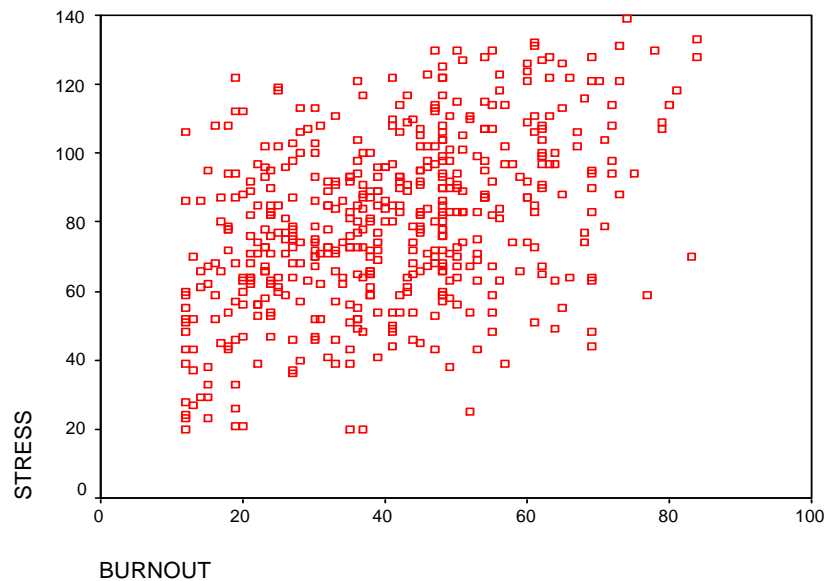


Figure 5.10: Scatter plot: Pearson's product moment correlation: stress and burnout

the weak relationship between stress and vigour explains a coupling effect between these variables when high stress levels are experienced. The dynamics of such a coupling effect was already discussed in section 5.4.7. Finally, the moderate correlation between burnout and stress is expected and it confirms the postulate by researchers (Cacioppo et al., 1999; Shirom, 2004; Watson et al., 1999) that burnout is a negative outcome of prolonged and chronic stress. In addition, vigour and burnout reflect two sides of psychological well-being. One is a salutogenic reflection while the other is a pathogenic one. It can be concluded that psychological well-being can be narrowed to vigour and burnout as antitheses. Well-being in this case is therefore not reflected as a general or vague state, but is conceptualised and explained in terms of two poles (a positive and a negative one).

5.5.14 Hypothesis 14: With reference to the empirical sample, respondents with a personality characterised by a high degree of neuroticism experience high levels of burnout

Figure 5.11 displays a scatter plot of a correlation between neuroticism and burnout as measured by the Emotional stability versus Neuroticism sub-scale of the Five Factor Model and the Shirom-Melamed Burnout Measure (SMBM). The distribution can be regarded as positive. Pearson's product moment correlation confirms a weak to moderate positive relationship for $r = 0.311$, $n = 505$, $p 0.00 < 0.01$, two-tailed.

The above analysis explains a correlation between burnout (which is an outcome of stress) and neuroticism which is a personality trait in the Five Factor model. The above results support those of Berg et al. (2005) and Lau et al. (2006) in the sense that, like in other police samples, those officers with high scores on neuroticism have higher ratings for severity of stress and are simultaneously vulnerable to burnout. These findings are also congruent with authors as discussed in chapter 3 (see section 3.4.5).

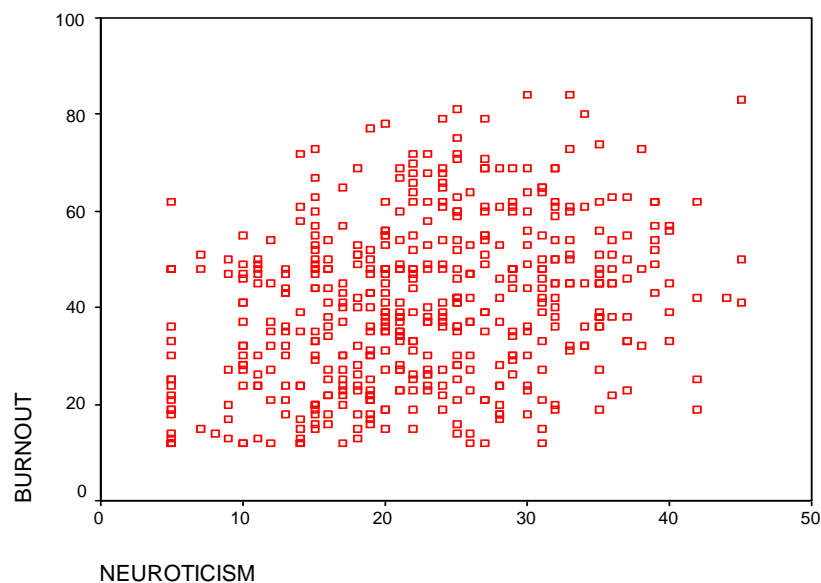


Figure 5.11: A scatter plot of correlation between neuroticism and burnout

Such findings override the statement by Shirom (2005) that a relationship between personality predispositions and burnout does not exist, or cannot be found. Further, the situation in which burned-out people score high on the neuroticism scale, give rise to the question whether personality on the one hand is dynamic, stable and enduring (Morris & Maisto, 2005; Pervin et al., 2005). The latter gives reason to accept Maslach's (1998) postulate of depersonalisation manifested in burned-out people. In addition, Nash et al. (1994) suggests that the neurotic person has a predisposition to respond physiologically to stress, and such responses tend to be rapid, intense and persistent. Due to the positive relationship found in this research it can be argued that burned people are not productive, neurotic and might periodically complain about somatic disturbances. Feelings like tenseness, nervousness, discontentedness and emotional instability may also be experienced which lead to further low productivity in the workplace (Sarafino, 2002). It should be concluded that people who are burned, tend to reflect less emotional stability when measured by the Five Factor scale (interpreted as neuroticism). However, it cannot simultaneously be assumed that all individuals who score high on the Neuroticism scale are burned for neuroticism is one end on the continuum of a personality trait while burnout is a psychological affective state.

In the next section the last hypothesis to be tested.

5.5.15 Hypothesis 15: There is a good fit between the theoretical structure of the Moos (1994) model and the empirical data

A fit between the theoretical structure of the Moos (1994) model and the empirical data implies a test of the dynamic interaction between environmental factors (police stress and social resources), personal factors (personality), coping (coping strategies) and psychological well-being (in this research narrowed to vigour and burnout). The instruments employed, are the Organisational Police Stress Questionnaire (OPSQ), Multidimensional Scale of Perceived Social Support (MSPSS), Five Factor Inventory,

Brief COPE Inventory, Shirom-Melamed Vigor Measure (SMVM) and the Shirom-Melamed Burnout Measure (SMBM).

Mediating hypotheses are best analysed by structural equation modelling (SEM) (Hoyle & Smith, 1994). The PROC CALIS computer programme of the SAS Institute (2006) was used to estimate parameters, and to determine a global fit between the hypothesised theoretical model of Moos (1994) and the empirical data. A Confirmatory Factor Analyses (CFA) was conducted on each measuring instrument as mentioned in section 5.3. The confirmed sub-scales were employed to conduct a SEM in this section. The Moos's (1994) theoretical structure can be simplified to a basic structure as depicted in figure 5.12. According to this simplified model, environmental factors (represented by stressors) have an influence on psychological well-being. Coping has a mediating effect on psychological well-being, while personal factors may be a disposition in the coping process. In every model exists exogenous independent latent constructs as well as endogenous dependent latent constructs. Figure 5.13 depicts endogenous independent latent constructs as well as exogenous latent constructs of this research. In the same figure, endogenous independent latent constructs are represented by stress, personal factors (personality) and social resources. The exogenous latent construct is represented by well-being. Every latent construct is defined/measured by various manifested variables and represented by ellipses. Manifested variables are, according to convention, represented by a rectangle. In this research sub-psychometric scales are used for analysis purposes. Arrows in the model (figure 5.13) indicate the hypothesised direction of effect. For the purpose of a SEM, sub-scales identified by a CFA are identified as follows:

Police stress identified by:

- Job demands (A1), Uncertainty (A2), Role overload(A3) and Frustration (A4)* during SEM fit), and

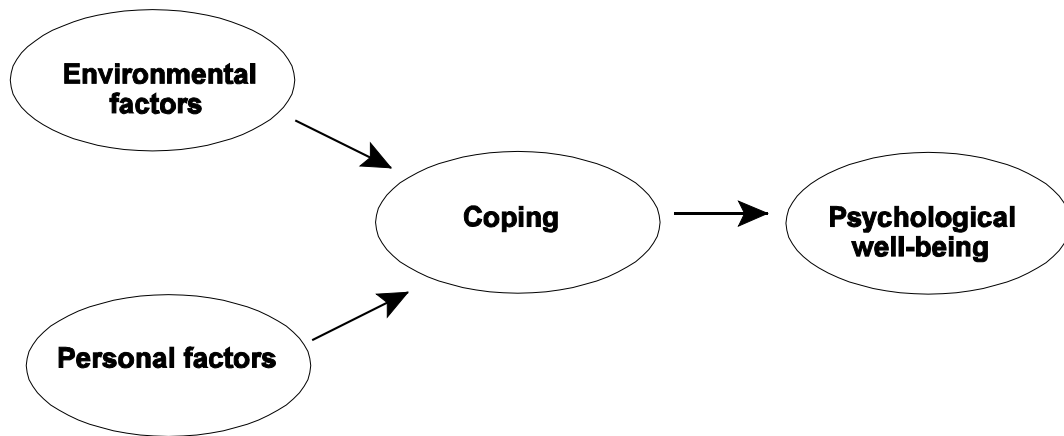


Figure 5.12: Moos's (1994) basic model

Social resources identified by:

- Friends (B1), Family (B2) and Significant other (B3).

Personal factors are identified by personality. The sub-scales are:

- Introversion versus extraversion (C1);
- Antagonism versus agreeableness (C2);
- Lack of direction versus conscientiousness (C3)* (excluded during SEM fit);
- Emotional stability versus neuroticism (C4)* (excluded during SEM fit); and
- Closedness versus openness to new experience (C5)* (excluded during SEM fit).

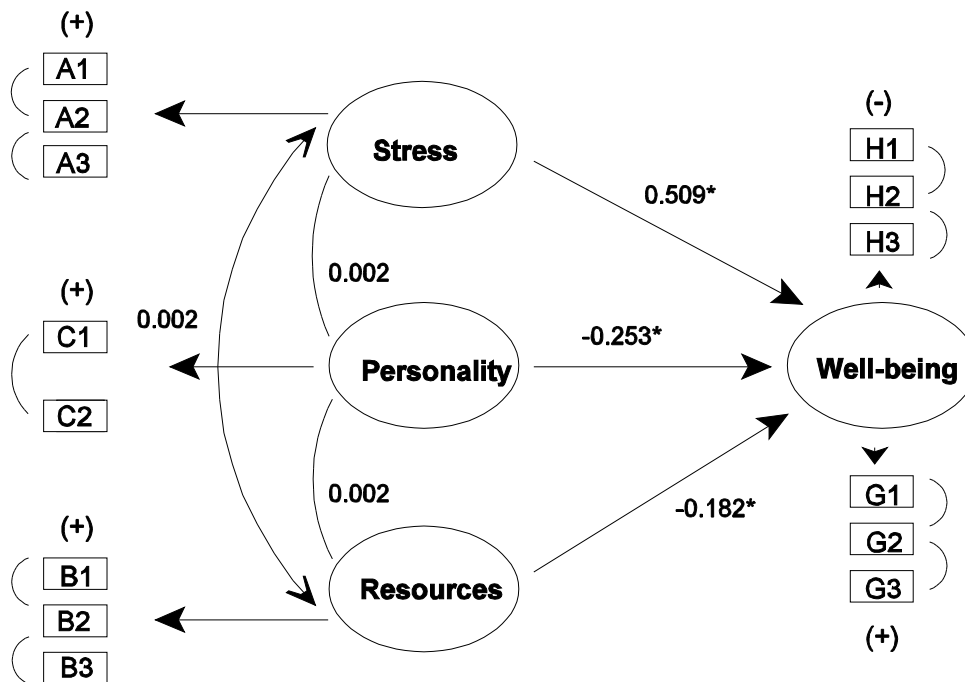


Figure 5.13 Most likelihood estimates for the stress and coping process

Coping is represented by coping strategies and identified by the following subscales:

- Avoidance coping (J1)* (excluded during SEM fit);
- Approaching coping (J2)* (excluded during SEM fit);
- Seeking social/emotional support (J3)* (excluded during SEM fit); and
- Cognitive coping or reappraisal (J4)* (excluded during SEM fit).

Psychological well-being is represented by vigour and burnout and identified by

the following sub-scales:

- Vigour is identified by: Emotional energy (H1), physical strength (H2) and
- cognitive liveliness (H3); and
- Burnout is identified by: Emotional exhaustion (G1), cognitive weariness (G2 and physical fatigue (G3)

Attempts to fit moderating effects of personal factors and coping as suggested in the Moos (1994) hypothesised theoretical model collapsed in all instances when coping

strategies were submitted to the analysis. It means that the SEM fit eventually excluded coping strategies from the model. The model in figure 5.13 reflects the most likelihood estimates for the stress and coping model. It is the best fitted model after the said model fit exercises. In figure 5.13 three dimensions of stress (“Job demands” (A1), “Uncertainty” (A2) and “Overload” (A3) have a direct and unmoderated effect on well-being, and eventually manifested in terms of burnout. The model further proposes that while stress increases, burnout (G1, G2 and G3) also increases. The model in figure 5.13 in addition, portrays a declining effect by personality (C1 and C2) and social resources (B1, B2 and B3) on well-being. The oblique relationship between vigour (H1, H2 and H3) and burnout (G1, G2 and G3) as originally suggested by Shirom (2003a; 2003b) is also confirmed in this analysis. The results of the SEM procedure (figure 5.13) can also be interpreted in terms of personality and social support which will have no moderating effect on psychological health when prolonged stressors are turned into high levels of individual burnout. A further assumption that can be made, is that when stress levels are very low, burnout also decreases. The said SEM procedure further suggests a positive side in that social resources and personality have a weak but mediating effect on vigour when stress and burnout levels are extremely low, or when non-existent.

There may be three reasons why coping strategies are deleted from the SEM procedure.

Firstly, several researchers (Antoni et al., 1991; Carver et al., 1989; Folkman & Moskowitz, 2000; McCormick, Dowd, Quirck & Zegarra, 1998) are convinced that coping strategies are actually an extension of personality traits and may have an influence on well-being. Furthermore, in some instances it is suggested that personality and coping strategies are not to be included simultaneously in the same study (see Carver et al., 1989). It can therefore be assumed, that coping strategies were contaminated by personality and eventually excluded by the SEM statistical procedure. A second possible reason why coping strategies are excluded, is that in the case of burnout, individuals usually engage in depersonalisation and emotional exhaustion when burned-out. Depersonalisation would constitute an indirect coping mode, since psychological well-being would already have been damaged in some way as a form of coping, and that the coping strategies included in this research were not of any relevance to the respondents.

A third argument for excluding the said coping strategies from the SEM procedure, may be in conjunction with the latter reason mentioned. It refers to Lazarus's (1966) postulate that coping is a response after a threat or challenge has been appraised. If this is a given, then high levels of burnout, and eventually cognitive weariness (a burnout dimension in this research), causes impairment of individual thinking and he or therefore does not engage in any appraisal process, or not "picking" any appropriate strategy to cope. Furthermore, three studies (Jaracz, Górna & Konieczna, 2005; Mostert & Joubert, 2005; Plana et al., 2003) of which the one is a local study, confirm that coping, especially active or approaching coping, has a weak and even negative relationship with burnout. In addition, Dorz, Novara, Sica and Sanavio (2005) found that passive coping relates to burnout. In other words, even doing nothing (see earlier study of Fleishman, 1984) may be a form of coping. It seems that since coping was conceptualised, it was always accepted that an individual will either respond actively to a threat or challenge, or actively avoid it. Minimal attention was given to passiveness as a form of coping. Consequently, the choice of passiveness might never be part of an instrument's questions. It seems therefore, that this research has exposed a limitation in stress and coping theory as far as police samples is concern. This research reveals that police people have their own dynamics. It eventually challenges the stress and coping theories in terms of coping as a mediator when burnout is the outcome.

In conclusion, it may be argued that future research in terms of the Moos (1994) model might require a re-specification of such a model where burnout is set as an outcome in the stress-coping process. In order to consider goodness-of-fit of the above model (figure 5.13), Hu and Bentler (1998) suggest that at least two indices be considered. In this research, it was decided to include four indices. Firstly, the Goodness-of-Fit Index (GFI) (Hair et al., 2005) is a non-statistical measure ranging in value from 0 (poor fit) to 1.0 (perfect fit). Secondly, the Root Square Error of Approximation (RMSEA) is representative of the goodness-of-fit that could be expected if the model were estimated in the population, not just the sample drawn for the estimation. Values ranging from 0.05 to 0.08 are deemed “good fit”. The next two indices are probably most appropriate for it compares a proposed model to some baseline model as in this research (Hair et al., 2005). The third index is the Normed Fit Index (Bentler & Bonnet, 1980) that has a range from 0.0 to 1.0 of which the latter suggests a perfect fit. The fourth index refers to the Non-normed Fit Index (Bentler & Bonnet, 1980), also known as the Tucker-Lewis Index (TLI) (Tucker & Lewis, 1973). The latter also ranges from 0.0 to 1.0, and like the former, index values greater than 0.90 are recommended for “good fit” assumptions.

The GFI of the model in figure 5.13 is 0.82 and the RMSEA is 0.11. The NFI is 0.77 while the NNFI reflects a coefficient of 0.81. All these indices can be considered as reasonable fit (MacCallum, Browne & Sugawara, 1996). All correlations were significant for $p < 0.05$. Although the above indices suggest a reasonable fit, the hypothesis cannot be accepted due to the fact that coping as a latent variable is rejected by the SEM. However, the model fit exercise at least confirms the underlying theoretical hypothesis that stress has an effect on psychological health with burnout as a possible outcome of such an effect. Furthermore, the model also supported a theory of a bivariate relationship between vigour and burnout. In addition, the model suggests that further research is necessary to detect effective coping strategies in police work environments.

The SEM result in this section is quite different from a study conducted by Du Toit (1999) among university students. A reasonable fit was established in the latter study in terms of the Moos (1994) hypothesised theoretical model. In the said study, coping was directly

influenced by social resources and personality influenced coping via cognitive styles. Whereas coping strategies (the Carver et al., 1989 instrument) were deleted in this research during the execution of the SEM, the same almost happened in the Du Toit (1999) study. In the Du Toit (1999) study, coping was rather identified by a different instrument, namely the Coping Strategy Indicator (Amirkhan, 1990) which explains coping strategies in terms of problem solving, avoiding and searching for social support as sub-scales. The similar one used in this research was rated as not suitable in terms of the SEM exercise. The reason why a similar fit could not be established in this research is twofold.

The one is probably because students do not have the life experience and problem-solving training that police officers usually undergo. Thus, police officers might employ coping strategies that cannot be interpreted in terms of the instrument used in this research. Furthermore, students who are dependent on family support might necessarily indicate that coping strategies like problem solving, avoiding and searching for social support are appropriate, while it differs in the case of police officers who are burned-out. The next reason may probably be that the instruments to measure well-being in the respective studies differed from each other. In the Du Toit (1999) study, the outcomes of the stress and coping process were identified by constructs that mostly focus on a positive psychological approach, namely sense of coherence, satisfaction of life and positive and negative balance. Consequently, the model fit rather suggests a fit in terms of a salutogenic viewpoint, although pathogenic factors were also considered in the research. This assumption is supported by the fact that the model fit exercise in this research suggests that positive constructs like social support and personality play a stronger role when perceived stress or challenges are under control. The consequence of this research therefore, is that the fitting of suitable stress and coping models with police samples becomes a challenge for future research. While this section deals with the above final hypothesis in the empirical research, the following section constitutes a chapter summary of the results chapter.

5.6 PROPOSAL OF A NEW MODEL

As mentioned in chapter 1, (see section 1.3) it was expected that the Moos (1994) model would provide the researcher with a comprehensive model to explain the stress and coping process while emphasising a transactional and coherent relationship between variables that play a role in such a process. A further expectation was that social support, coping strategies and personality would play a significant role in stress moderation. The expectations were not met.

When considering the results as discussed in the former section, the researcher learned that a new model emerges out of the empirical study. The SEM procedure revealed that all the measured constructs and dimensions in the Moos (1994) model (see figure 1.3 in chapter 1) (e.g. stress, personality, social resources, well-being), are retained while one was deleted (coping strategies). The model further explains job-specific well-being constituted by multiple latent variables. However, the effect directions of these variables or constructs differ from the Moos (1994) model. This new model enforces new effect directions that imply a salutogenic as well as a pathogenic psychological outcome. Furthermore, the effects of stress, personality and perceived social support point directly to well-being with no one playing a moderating role. Such a new model retains the theoretical underpinnings initially proposed by Lazarus and Folkman (1984) (and later adopted by Moos, 1994) as far as the transactional relationship between variables is concern. However, the only interaction that exists, is a direct transaction from stress, personality and social resources with well-being. The latent and observed variables reflected in figure 5.13 (see section 5.5) serve as a framework for the new "Police Vigour and Burnout Model" (PVBM). The oblique relationship between vigour and burnout, as suggested in previous research (Cacioppo et al. 1999; Davidson, 2000; Shirom, 2004) (see section 3.2.6 in chapter 3), is also embraced in the new model.

The PVBM suggests that organisational stress (emanating from the police work environment and represented by demands, uncertainty and overload) has a direct effect on the individual police official's well-being. It further suggests that increased or

prolonged stress leads to physical and psychological burnout. Such burnout effect is manifested in the burnout dimensions (as suggested by Shirom, 2003b, 2003c) such as emotional exhaustion, cognitive weariness and physical fatigue. It means that individuals who are burned may experience physical weakness, declined cognitive functioning and emotional overload. A further consequence of the individual's burned state, is that his or her personal strength in terms of personality may also decrease with special reference to emotional stability. Furthermore, personality dynamics become static. Another effect of the burned state is that social support does not play a moderating role, even if it is available or present. This happens because the individual lost his or her feelings of control and self direction (see Cherniss, 1993; Friedman, 2000). The emotional exhaustion experienced may further include feelings of helplessness and hopelessness and a sense of being trapped. Such maladjustment most probably will have further biological consequences that can only be speculated about, as it is not within the scope of this research. As stated by Cherniss (1993), burnout is the final stage in a series of unsuccessful attempts to cope with stresses of the workplace and is expressed as a transition from effective coping mechanisms for solving problems to passive coping methods like apathetic relationships or a powerless feeling in day-to-day activities.

As it seems that burnout is a final stage (with its own processes), it possibly explains the reason why coping as a latent variable was excluded from the SEM data fit procedure in this research. Whereas the above explains the model out of a pathogenic perspective, the following discussion unveils the salutogenic thesis of the PVBM.

The salutogenic effect reflected in the model explains actually a vigorous effect on well-being when individual stress levels are low or non-existent. Such individuals express an energetic life. In contrast with burned individuals, such individuals would experience emotional stability, cognitive sharpness and physical strength. In this case personality plays a positive role in the optimum psychological functioning. Although personality and social support do not play a moderating role, they rather have a direct effect on individual well-being.

Latent variables (e.g. police stress, personality, social resources and well-being) seem to be independent constructs with no overlap. Furthermore, vigour and burnout show to be obliquely related that is congruent with the aforementioned researchers' (Cacioppo et al. 1999; Davidson, 2000; Shirom, 2004) postulate. It should be mentioned that this research's findings can only be applicable to police samples. Other occupations are not evaluated yet. Although the proposed model is not an ideology, it helps shed light on the determinants of individual vigour and burnout to support knowledge in a search for remedial programmes, or otherwise. What should also be noted is that this research is evidence that the measures used, tap some aspects of well-being.

A last remark to be made is that the roles the various variables play in the stress and coping process are interwoven in such a way that it is hard to say what role each one plays at a specific point in time. It further seems that the effects of all of them are a repertoire of variables conducive to well-being. Therefore, it is almost impossible to place each one in a compartment for role illustration at a specific point in the said process. This was proved by the SEM procedure when deleting coping strategies as a variable in the Moos (1994) model. Whereas emotional processes are connected to the human autonomous nervous system (see Davison et al., 2003) the coping process is most probably a function of the human autonomous regulatory system. Therefore, theorists should be careful before psychological processes are broken into parts.

This section proposes a new model. The next section summarises the chapter to conclude the empirical study in this research.

Remark: This chapter deals with the empirical objective by reporting and interpreting the empirical results. In addition, the new Police Vigour and Burnout Model is proposed in this chapter.

5.7 CHAPTER SUMMARY

The results of the empirical investigation were displayed, discussed and interpreted in this chapter. Initially reliability and validity indices of the six instruments used, were discussed. Instrument validity was portrayed in terms of factor analysis results followed by a confirmatory analysis of each one. Good reliability and validity indices were obtained in most instances. The most dimensions and factors reported by other researchers are also confirmed by this research. Although almost all dimensions suggested by other researchers were supported by this research, a confirmatory analysis excluded some items from the six instruments used. For example, one item was deleted in the Organisational Police Stress Questionnaire while all factors suggested by Zimet et al. (1988) fitted the data of this research perfectly. In addition, one item each was rejected from the introversion - extraversion sub-scale as well as the emotional stability - neuroticism sub-scale. The most items (11) were excluded from the Brief COPE and such rejection confirms Carver's (1997a, 1997b) postulate that not all items have a relevance to all samples. Due to semantic problems two items were deleted from the Shirom-Melamed Vigour Measure (SMVM) while all items were retained in the Shirom-Melamed Burnout Measure (SMBM). After consideration of the instruments in terms of reliability and validity, descriptive statistics were displayed with regard to the biographical data collected. Thereafter, the descriptive statistics generated by the various instruments were also evaluated.

Several hypotheses were formulated for this research with previous research as guidelines. The hypotheses tested, suggested that no difference exists between gender groups' stress levels but that at least inspectors experience more stress levels than other ranks. Although an analysis revealed that women officers do not rely more on social support than men, White officers are ranked to be the most reliant on social support with Black officers the least reliant. Correlation studies revealed that vigour and burnout respectively correlate negatively and positively with perceived stress. Furthermore, a similar analysis supported a negative correlation between vigour and burnout.

The final analyses focused on overall model fit and results were reported with regard to the best fitted model. The findings provide some empirical support for the Moos (1994) model as far as stress has a direct influence on individual well-being. However, no mediating effects were suggested by other latent factors in terms of high stress levels, while coping strategies were totally excluded from the analysis. In addition, social support and personality have an effect on vigour when stress and burnout levels are very low. Except for the exclusion of coping strategies and coping as a latent variable, some interaction between variables is confirmed in terms of the Moos (1994) model. However, a good fit could not be established and the "Police Vigour and Burnout Model" was suggested as a new model.

While this chapter deals with the empirical results and the proposal of a new model, the next chapter addresses the conclusions, recommendations and limitations of the research.

CHAPTER 6

CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

6.1 INTRODUCTION

The previous chapter deals with the fifth step of the empirical objective formulated in chapter 1. In this final chapter, the sixth and final step of the empirical objective is achieved. Conclusions of the literature review are given with regard to the research framework used. Thereafter, conclusions of the empirical research are formulated. Recommendations for future research form the second part of the chapter. Limitations in the theoretical and empirical research will follow the recommendation section. The chapter is concluded with a concluding perspective. The conclusion section of the chapter commences in the next section.

6.2 CONCLUSIONS

As mentioned in the introduction, this section consists of conclusions pertaining to the literature as well as the empirical research. Conclusions with regard to the literature review commence in the next section.

6.2.1 Conclusions of literature review

An analysis of the dynamics of individual vigour and burnout forms the theme of this research. Such analysis scrutinises the dynamic interaction between environmental factors (stressors and resources), personal factors (personality and individual differences), coping (coping strategies) and psychological well-being (narrowed to vigour and burnout). In order to address the above, two research objectives were formulated for the literature review. The one was to conceptualise and to integrate the dynamics of individual vigour and burnout with special reference to stressors and the coping process in police context. The second sought to conceptualise vigour and burnout as outcomes of the dynamic stress and coping process. Consequently, the focus of this analysis was on the relationships between variables and an evaluation of the Moos (1994) model.

The Moos (1994) model postulates that environmental factors and personal factors advance coping responses and that coping processes mediate between the former two variables and well-being. On the one hand people are active agents in forming their own life context while on the other hand they are influenced by life events. The Moos (1994) model is formulated in accordance with the pathogenic paradigm and hypothesised that the said factors play a role in the prevention of physical and psychological diseases. With the inclusion of vigour as an outcome of the stress and coping process, this research was constituted out of a pathogenic as well as a salutogenic/fortigenic perspective. The said model was employed in previous research in social as well as in a work context.

In contrast with the pathogenic paradigm, the salutogenic/fortigenic paradigm does not focus on all negative consequences of stress, but rather on the possibility that they maintain staying healthy, despite people's experience of various stressors. This paradigm rather concentrates on aspects that institute resilience and eventual healthy functioning. After the evaluation of various literature reports, it can be concluded that positive inducing factors of psychological health may simultaneously be included with pathogenic factors in the same research.

Out of the said literature review, it further can be concluded that psychological well-being was identified and further typified by means of people's positive affective state (vigour). This positive affective state can be narrowed to three dimensions such as physical strength, cognitive liveliness and emotional energy. On the other hand, psychological un-being can be typified by means of people's negative affective states (burnout) representing the opposite dimensions to those of vigour. The latter can be narrowed to dimensions such as physical fatigue, cognitive weariness, and emotional exhaustion. These positive and negative affective states maintain an oblique relationship (Shirom, 2003a, 2003b). The literature review conceptualised each of these variables independently, as well as the dynamic interaction in terms of the Moos (1994) model. Social support that accounts for the spillover effect between home and work, and vice versa, was included to detect possible interaction between work and non-work life.

Coping is a central construct in the literature review. Coping as a construct is

conceptualised and operationalised in terms of divergent ways. Coping appears to be perceptual, cognitive or behavioural responses through which individuals attempt to overcome threatening or challenging situations in the work environment. Such responses can also imply responses to appraise, to avoid, to survive or to control challenging or threatening situations. Furthermore, such responses may influence the interpretation of such events or outcomes. Most research projects relevant to the nature of coping and its role in the stress and coping process were conducted between the early eighties and the mid-nineties. It can be assumed that the most important facets of the stress and coping process were detected during this era. During this era researchers attempted to unravel the dynamics of the stress and coping process. In the end coping was seen as a transactional process (see Lazarus, 1999; Lazarus & Folkman, 1984). This postulate rather emphasises the specific situation instead of individual dispositions (a diathesis concept), such as personality as a determinant of coping. A third generation of coping theories considered both situational and individual determinants of the coping process. A specific coping strategy is not seen as either positive or negative, while the emphasis is on the dynamic interaction between stressors, coping and personality. The Moos (1994) model is an example of such a coping strategy.

The literature review revealed various theories of stress. Such theories see stress as a stimulus while others explain it as a response or as an occurrence perception theory. Furthermore, the interactional stress theory as well as the conservation of resources theory were included in the above literature review. Stress in the work environment was narrowed to stressors experienced in the police organisational context. Salutogenic as well as pathogenic viewpoints were evaluated and it can be concluded that some police officers have the ability to cope with such stressors, while others decline into psycho-pathology. The environmental or contextual factors as well as personal factors that play a role in such trends, are still to be determined. Although police stress is not regarded as more stressful than other occupations, it can be concluded that police environments generate its own stressors and police officers are not living in social isolation.

Although active coping strategies are regarded as the most effective, some emotional- or avoiding strategies could also be seen as effective, provided that it takes place within particular situations that cannot change, or occurring over a short period of time. However,

in the police context it was found that those strategies with direct action, or changed job assignments may be regarded as effective (Haarr & Morash, 2005). It can be concluded that coping is a process to control stressors to protect the human body from harm.

It can be concluded that social support plays a role in stress handling. However, the strength of the relationship is difficult to assess when people are already burned-out. Social support plays a positive role during physical illness, during high level stress experiences, during the transformation between adolescence to adulthood, during university adjustment, and with adolescents formerly deprived of socio-economic conditions. A conclusion that can be drawn is that social support is not only instrumental, but support is also of an emotional nature. It is assumed that resources encourage active coping strategies (adjustment) while adjustment has a positive relationship with psychological well-being. In addition, direct adaptive coping strategies would be more effective than escaping strategies. In fact, the latter is not regarded as an option in the police context due to constant scrutiny by fellow officers, supervisors, citizens or newspaper reporters.

It can be concluded that every individual has an unique way to respond to stressors or challenges. This unique way of response is dependent on variables that differ from individual to individual, called personal factors. Two personal factors are identified, namely personality and individual differences (e.g. gender, rank etc.). Personality was explained in terms of the trait theoretical Five Factor model identified and conceptualised by Goldberg (1992, 1993). Despite personality's relationship with stress handling and health outcomes, authors are not convincing about the strength of this relationship. A conclusion can be drawn that personality plays a limited role in the stress and coping process.

There are indications that personality and social well-being have a relationship during stressful or challenging situations (Lepore, 1995). Neurotic and pessimistic people may have difficulty forming close relationships with other individuals in society. Larsen and Buss (2005) are of the opinion that police officers who score high on openness have more social support than those with other traits. Due to a lack of research, conclusions cannot be made with regard to specific traits that are more resilient in the police work context. Those mentioned are still speculative.

It can be concluded that certain personality traits relate to the selection of coping strategies. People who reflect high levels of optimism, hope, hardiness, extraversion and internal locus of control use more adaptive and problem solving strategies. Such research in the police context (Bishop et al., 2001) mentioned that avoidance coping was found to be positively associated with neuroticism and negatively related to conscientiousness. In the same research, problem solving was found to be positively associated with conscientiousness, while positive reappraisal was positively associated with extraversion, agreeableness, and openness.

It can be assumed that personal factors such as demographic characteristics play some role in the coping process. The role may differ from sample to sample (Sanderson, 2004). Morris and Maisto (2005) are of the opinion that with increased age, adults become less self-centered and therefore, apply coping skills more successfully. Some research proved that men and women respond similarly to the same circumstances (Morris & Maisto, 2005). Other research revealed that males and females respond to stress differently and use different coping strategies (Pitman, 2003; Taylor et al., 2000). With reference to the role of individual differences, a conclusion can be made that these variables are mostly neglected in stress and coping research and should receive more attention.

A final analysis of the literature review focuses on the narrowing of psychological well-being to vigour and burnout as outcomes of the stress and coping process as mentioned in the beginning of this section. The narrowing of psychological well-being was considered because literature revealed that well-being as a construct is too broad for research purposes (Van Horn et al., 2004; Wissing & Van Eeden, 2002). The possible role of vigour and burnout in the dynamic stress and coping process was investigated. It can be concluded that vigour and burnout may also have either positive or negative influences on components of the stress-coping process (Shirom, 2003a, 2003b). A person who experiences vigour may engage in social relationships with others like family, friends or co-workers, while people who experience burnout may disengage in such relationships (Semmer, 2003). Employees who experience either one of vigour or burnout may have an effect on his or her environment. One who experiences vigour may arrange his or her work environment for effective functioning and perceive it as challenging. Burned-out individuals may reflect avoidance which may be misinterpreted as anti-social behaviour. Considering

the above, it can be concluded that vigour and burnout have an oblique relationship, and it explains psychological health in terms of a balance between a positive and a negative affective state.

In terms of theory, the Moos (1994) model added a psycho-social dimension to police stress and coping research. For example, social support is proposed as a significant variable in the police stress and coping theory. The dynamic interaction between components proposed in the Moos (1994) model is now empirically investigated with different effect directions that suggest a new Police Vigour and Burnout Model.

While this section deals with findings relevant to the literature review, the next section concludes on the findings of the empirical research.

6.2.2 Conclusions of empirical research

The third objective of this research, is to determine the dynamics of individual vigour and burnout and its reciprocal relationship during the coping process between variables as suggested in the Moos (1994) model, and in terms of the South African Police Service as a research population. This was followed by a fourth objective to propose a new model. Various research instruments were used in the empirical research and conclusions in terms of these instruments follow in the following sections.

6.2.2.1 Conclusions in terms of the confirmatory study of the measuring instruments

The following conclusions were made in terms of the confirmatory study of the measuring instruments:

- The reliability and validity of the *Organisational Police Stress Questionnaire* was confirmed. High Cronbach alpha indices of the retained eigenvalues with values greater than one, plus the cumulative percentage per proportion was properly explained by all sub-scales after one item was deleted. This confirms the enhancement of the validity of the research;

- The reliability coefficients of the *Multidimensional Scale of Perceived Social Support* were acceptable for all sub-scales with no item deleted. The validity of the *Multidimensional Scale of Perceived Social Support* was confirmed. The retained eigenvalues with values greater than one and the cumulative percentage per proportion were acceptable for all sub-scales. This confirms the enhancement of the reliability and validity of the research;
- The reliability coefficients of the *Five Factor Inventory* were acceptable for all sub-scales with two items deleted. The retained eigenvalues with values greater than one and the cumulative percentage per proportion was acceptable for all sub-scales. This confirms the enhancement of the reliability of the instrument and validity of the research;
- The conclusion could be drawn that the *Brief COPE Inventory* was reliable for the sample of police officers, after 10 items were deleted. Carver et al. (1989) confirm that not all items will be suitable for all samples and that items should be selected in accordance with circumstances and the nature of the sample. The tendencies of police samples was unknown and the deletion of such a number of items is not surprising to the researcher. The retained eigenvalues with values greater than one and the cumulative percentage per proportion was acceptable for all sub-scales. The remaining items confirm the enhancement of the reliability and validity of the research;
- The coefficients of the *Shirom-Melamed Vigour Measure (SMVM)* were acceptable for all sub-scales with two items deleted. The validity of the instrument was confirmed for the sample after the rejection of the above items. The retained eigenvalues with values greater than one and the cumulative percentage per proportion was acceptable for all sub-scales. This confirms the enhancement of the reliability and validity of the research; and
- The conclusion could be drawn that the *Shirom-Melamed Burnout Measure (SMBM)* was reliable. The coefficients were acceptable for all sub-scales with no item deleted.

The retained eigenvalues with values greater than one and the cumulative percentage per proportion was acceptable for all sub-scales. This confirms the enhancement of the reliability and validity of the research.

Whereas the above emphasised conclusions relevant to the measuring instruments, the following section focuses on the conclusions of perceived police stress.

6.2.2.2 Conclusions in terms of the empirical study of police stress

Descriptive statistics revealed the prevalence of stressors in the research sample and that *job demands*, followed by *work overload*, are the main causes of organisational stress. These stressors are regarded as a form of chronic stress and is also a source of burnout if prolonged (Stinchcomb, 2004). *Uncertainty* and *frustration* were causing the least form of stressors as indicated in the research sample. It can however be accepted, that the dimensions presenting police organisational stress are in interaction with each other, despite a differentiation in means.

In terms of the inferential statistics, some differences were found with regard to biographics and its role in perceived police stress. Simultaneously, others were found insignificant in terms of the formulated hypotheses. For example, no significant difference between the stress levels of males and females was detected. It can further be concluded that the experience of stressors by both male and females are relatively even. In terms of perceived stress, it can be concluded that some demographic factors do play a role in perceived police organisational stress, but that it differs from sample to sample. While this section deals with the empirical research of police stress, the next one deals with perceived social support.

6.2.2.3 Conclusions in terms of the empirical study of perceived social support

Descriptive statistics show that respondents' families play an important role as a source of social support. *Significant other* sources like co-workers and supervisors do play a role but not with the same intensity as family members. It seems that friends do not play a significant role during difficult situations. The majority of the respondents are married and

this explains why police officers turn to families for social support instead of friends.

Inferential statistics revealed that no ethnical group rely more on social resources than another. Furthermore, similar statistics also generated data proving that no gender group relies more on social support than the other. This finding includes a verdict in terms of all ethnical groups represented in the sample. Another finding confirmed that reliance on social support does not increase in the case of intensified stressful or challenging situations. It can be concluded that social support as a stress moderator is limited in terms of police samples.

This section deals with social support in the empirical research, the next section explains coping strategies.

6.2.2.4 Conclusions in terms of the empirical study of personality (Five Factor Inventory)

Because of the nature of the instrument where individuals rate themselves with non-transparent items build into the questionnaire, conclusions relevant to the *emotional stability* sub-scale as well as the *introversion-extraversion* sub-scale may carry the most weight when assessing stress or burnout levels. The other may be of lesser value because people may tend to rate them favourably, despite the anonymity of the responses. Although descriptive statistics relevant to personality were of minimal value, it can be concluded that serious pathology was not indicated in group context. Inferential statistics in this regard may be of more significance.

Inferential statistics revealed a positive relationship between neuroticism and burnout. This relationship detected in the research sample implies a prevalence of burnout among respondents of this sample. Simultaneously, inferential statistics also revealed a positive relationship between stress and burnout. This finding supports a postulate of limited prevalence of neuroticism that may predict a presence of high stress levels. Considering the above, it can be concluded that there is a relationship between negative affect and some personality traits like neuroticism, and vice versa.

In this section conclusions were drawn in terms of the empirical studies of personality. The next section deals with coping strategies.

6.2.2.5 Conclusions in terms of the empirical study of coping strategies

Descriptive statistics show that positive, active and approaching strategies as well as those of seeking support are mostly used by the sample of police respondents. Overall, it can be concluded that the respondents do experience stress and that they employ a variety of coping strategies. Avoiding or negative strategies are less employed.

As in the case of the descriptive statistics, inferential statistics revealed a positive relationship between social support and coping strategies. However, no gender or ethnical effect was found in this relationship. Whereas the *Brief COPE* is a measure to detect coping strategies the *Multidimensional Scale of perceived Social Support* is a measure to assess social support. The *Brief COPE* has two strategies also referring to social support (e.g. “seeking social support” and “seeking instrumental support”). It is possible that those items in the first mentioned may have been contaminated by the latter, due to the fact that “coping strategies” as a construct was deleted in the Structural Equation Modelling (SEM) executed in this research.

This section dealt with coping strategies while the following deals with conclusions in terms of the empirical research of vigour.

6.2.2.6 Conclusions in terms of the empirical study of vigour

In terms of this research sample, the *Shirom-Melamed Vigour Measure (SMVM)* measured three dimensions of vigour as proposed by Shirom (2003a). It can be assumed that these three dimensions are in interaction with each other. It can be concluded that individuals living a challenging, vigorous and proactive life experience a positive affective state. Such a conclusion support the observation made by Larsen and Buss (2005) as well as Stinchcomb (2004) that some police officers appraise certain situations as a challenge while other interpret it as a threat, and eventually might become burned-out, if the stressors are chronic. It seems that officers with a vigorous outlook are in control of the situation. Control

over the stressful or challenging situation predicts quality of work life (Shapiro et al., 2001).

Inferential statistics revealed an oblique relationship between vigour and burnout. A correlation conducted between scores of the vigour scale and the burnout measure revealed a moderate negative relationship for this research sample. Whereas vigour was initially regarded as a dimension of another construct (i.e. engagement), it can be accepted that vigour has relevance to work affect and that it can be sampled independently from other affective states. It is possible that vigour should also be contagious and may have a spillover effect between home and work, and vice versa because it demonstrates proactive behaviour. As burnout is a product of prolonged stress, it can be argued that vigour is relatively persistent and pervasive over a long period of time unless disturbed by prolonged stressors that shift the individual to a negative affective state. A final conclusion that can be drawn is that vigour is, a positive non-momentary or specific affective state and is a reflection of individual well-being. In addition, it seems not to be confounded by cognitive components of individual functioning. It can consequently be interpreted as a three-dimensional reflection of individual positive well-being.

6.2.2.7 Conclusions in terms of the empirical study of burnout

Descriptive and inferential results generated in this research confirm the existence of burnout as a phenomenon in work organisations. As in case of vigour, a further conclusion could be drawn that when individuals experience burnout, the physical and emotional parts are in interaction with each other. The person is exhausted and as a result of this condition, a biological imbalance sparks an emotional imbalance. The fact that physical fatigue and emotional exhaustion interact, is not only confirmed in this research but also by research conducted among burned-out athletes (Cresswell & Eklund, 2003). Due to a lack of physical energy the individual eventually experiences a lack of cognitive energy and cannot think properly. This research sample therefore supports the interaction postulate between the burnout dimensions as suggested by Shirom (2003a, 2003b, 2004) to form a three-dimensional syndrome. It can be concluded that burnout is a three dimensional phenomenon and these dimensions are in interaction with each other.

A conclusion can be drawn that stress has a relationship with burnout. Furthermore, burnout

and vigour do have an oblique relationship. Whereas vigour is a reflection of a positive affect, burnout is one of a negative affect. Like vigour, burnout could be regarded as a phenomenon in the workplace, and specifically in police work environments. Simultaneously, both phenomena do explain individual well-being.

In this section conclusions were drawn with regard to an empirical investigation into burnout. The next deals with conclusions in terms of biographical information that, besides personality, also identify individual differences in the research sample.

6.2.2.8 Conclusions in terms of biographical information

Biographical information was included in the empirical research in order to determine its dynamic role in the stress and coping process. It can be concluded that gender does not always play a role in perceived organisational stressors or challenges. Minority ethnical groups however, demonstrated some differences in perceived stress levels or challenges, and in particular whites and coloureds who feel that they are left behind in the social and political systems of the newly transformed South Africa. Except for the inspector's rank, rank is not a predictor of perceived stress or challenges, and so it is the same with years of service, marriage status, and educational level. A final conclusion can also be drawn that gender as well as ethnical origins are not predictors of reliance on social support during stressful or challenging situations. With the above in mind it can be assumed that results obtained may differ from situation to situation as well as from sample to sample.

Since the above sections elaborated on the findings of data generated by descriptive and inferential statistics, the next section seeks to draw conclusions on the fit of empirical data on the hypothesised theoretical model of Moos (1994).

6.2.2.9 Conclusions in terms of the hypothesised theoretical model of Moos (1994)

To determine the dynamics of individual vigour and burnout in the police service requires a fit between the Moos (1994) hypothesised theoretical model and the empirical data. Such a process implies the determination of the effect between factors like environmental factors

(police stress and social resources), personal factors (personality), coping (coping strategies) and psychological well-being (in this research narrowed to vigour and burnout). With the execution of the above model fit, certain conclusions can be drawn when vigour is considered as an outcome of the stress and coping process. High levels on the extraversion and agreeableness personality traits suggest a positive weak effect on individual well-being when stress levels are low or non-existent. The same can be concluded when considering the role of social resources in the stress and coping process. Social resources have a direct and positive effect on well-being with vigour as an (positive) outcome, and most probably when stress levels are low or non-existent. However, the latter factor's role is much less than those of personality. In contrast with the Moos (1994) postulate, none of these factors are mediators in the stress and coping process. It can be concluded that social resources have some, although limited, effect on individual well-being as a spillover effect between work and home, and vice versa. Besides the above positive effects detected, it can further be concluded that the Moos (1994) model in its original format partly failed to explain the dynamics of individual vigour in the police service in a salutogenic or a positive psychological approach.

A simultaneous data fit as mentioned above, suggests that stress has a direct and positive influence on well-being and particularly on burnout. As far as burnout is concerned, personality, coping strategies as well as social resources have no mediating role in the relationship with environmental factors (identified by stress). In terms of this research sample, it can be concluded that the Moos (1994) model is not a perfect predictor of the stress and coping process with burnout as a stress and health outcome. This conclusion refers to this research sample and most probably it can also be generalised to other police samples in South Africa. The Moos (1994) model is thus not a perfect theoretical model to explain the dynamics of individual burnout in a pathogenic approach in the police context. However, the Police Vigour and Burnout Model emerges out of the above model that suggests that effect directions from stress, personality and social resources point directly to well-being with vigour and burnout as either outcomes of the stress and coping process.

Recommendations emanating from this research will be discussed in the next section.

6.3 RECOMMENDATIONS

Recommendations pertaining to the literature and empirical research commence the discussions, followed by recommendations for practical application.

6.3.1 Recommendations in terms of the literature and empirical study

The first recommendation relates to the description and analysis of vigour and burnout as outcomes of the stress and coping process within other populations as well as populations in work domains in particular. Literature reviews in this regard are limited and these domains should be further explored and described in terms of its oblique relationship that has never been explored in South Africa before. Curiosity about this relationship will most probably scrutinise these phenomenon from a different angle. It is recommended that other factors contributing to both domains be conceptualised and investigated.

The second recommendation relates to the description and analysis of demographics' role in the stress and coping process. Current research reports are not sufficient to describe the role these factors play in the stress and coping process, and needs theoretical exploration. Such an initiative will give scope to the understanding of demographics in a diverse South African work milieu. A theoretical clarification of demographics' role in the stress and coping process will unveil those unknown factors which were not discussed before.

A third recommendation points to the integration of work stress models in order to conduct a 360° literature review for exploring the magnitude of organisational stress. Current models focus on specific areas while excluding other factors. A more holistic approach will avoid empirical studies that cannot explain the stress and coping process fully.

A fourth recommendation leads to the theoretical clarification of coping strategies in the South African context. Empirical results in this research proved that not all coping strategies listed in overseas literature are relevant to the South African work situation. Coping strategies could therefore, be rescued from vagueness while narrowing it specifically for the South African population. Theoretical clarification should also be obtained with regard to coping strategies' that contribute to individual resilience on the one hand and predict

individual vulnerability on the other.

A fifth recommendation warrants more research on vigour as a construct. Whereas in the past vigour was regarded as a dimension of engagement, this research has shown that it is an independent variable or construct to explain affective behaviour. Therefore, its contribution to psychological well-being should be thoroughly considered in future research projects to explain it as a positive psychological phenomenon in work organisations.

A sixth recommendation relates to the adjustment of the Moos (1994) model. It seems that life crises, which are represented by an independent component in the model, should be combined with environmental factors, as a component for life crises are also part of the individual's work or social environment. Research tools can be adapted to measure the former phenomenon simultaneously with the latter in order to explain the spillover effect between society and police, or other work environments, and vice versa. This recommendation should encourage researchers to consider the said model as a social-organisational model for people who do not live in isolation from either one of these domains.

The seventh and last recommendation refers to the availability of research data on an international level. It was learned that almost all useful empirical information relevant to the Moos (1994) model, as well as those relevant to the Five Factor personality structure conducted by Costa and McCrae (1980, 1992, 2000) and Costa, Widiger and Costa (2002) are commercialised and it cannot be accessed without passwords or prior payment. The isolation of research data is not in the interest of the general research community and actions should be avoided not to hamper effective knowledge generation in health or well-being domains where it is desperately needed.

Whereas this section dealt with research issues, the next section considers recommendations for practical application.

6.3.2 Recommendations for practical application

The first recommendation refers to programmes of stress or ill-health reduction. Instead of

searching for programmes to adjust employees to stressful situations, it is recommended that programmes also be developed to reduce organisational stress inducing activities in police and other work environments. Whereas the above would be a paradigm shift to adapt organisational activities to prevent stress, programmes to improve individual resilience against harmful stressors should prevail and not be replaced.

A second recommendation refers to stress awareness among command staff. Police and other managers should be trained in techniques to be sensitive to the effects decision-making might have on subordinates' or organisational health and well-being. Some management styles can be stress provoking.

The third recommendation refers to stress management in an organisational context. The stress inducing features within police and other organisations should be scrutinised and critically evaluated. Police agencies and large organisations should follow the Philadelphia Police Department in the United States by creating a stress manager position to monitor departmental policies and procedures. Such an appointee can submit recommendations to make the above less stressful.

The fourth refers to police organisations' commitment to combat stress in work environments. Furthermore, it seems that police organisations do not have research priorities as far as stress related research is concerned. Police organisations should take ownership in the combat of stressful situations by initiating stress research themselves. In addition, a research relationship should be built between police psychologists and academics to address this problem.

A fifth and last recommendation relates to the maintenance of healthy conditions. Without ignoring programmes as mentioned in the first recommendation, stress prevention training should also follow a salutogenic/fortigenic approach in order to guide police officers how to live and stay healthy. This includes a mind set to turn threats into challenges.

This section sought to suggest useful programmes and considerations to prevent stress and to promote a positive mind set. The next section gives an overview of limitations in the research.

6.4 LIMITATIONS OF THE RESEARCH

In this section limitations are divided into those that refer to the literature review followed by limitations experienced in the empirical research.

6.4.1 Limitations of the theoretical literature review

With specific reference to the theme of this research, a major limitation of the literature review was availability of models to integrate stress and coping out of social- and work domains as a research focus in the South African context. Although several studies were conducted in the police context, the dynamics of such processes were not explored or theoretically explained.

A further limitation of the research refers to the availability of literature in a South African context through which both the pathogenic and salutogenic approaches were incorporated in the same research. Research usually focuses on the pathogenic viewpoint, while the salutogenic or positive psychological view is in the minority.

This section revealed limitations with regard to the literature review. The next one explains limitations experienced in the empirical research.

6.4.2 Limitations of the empirical study

Limitations were experienced in terms of some instruments which could not integrate constructs in terms of the hypothesised theoretical framework as postulated by Moos (1994). What was needed was an instrument that simultaneously measures environmental factors (identified by police stress) as well as perceived social support. However, the limitation was overcome by employing the *Multidimensional Scale of Perceived Social Support* as the best option to investigate the relevant constructs.

A further limitation experienced, was the lack of South African validation of the research instruments. All instruments were originally developed in overseas countries where circumstances differed drastically. The limitations were eventually overcome by conducting

a Confirmatory Factor Analysis in order to improve reliability and validity of the research.

A limitation that should not be ignored, is that since the research sample was of a convenience nature, results cannot easily be generalised to the police population of the country as a whole. However, a significant geographic area was covered and the limitation turns into an opportunity for further research regions for comparison.

A last limitation of the empirical investigation refers to the language in which the instruments were developed. All instruments were in English while the majority of respondents were using it as a second language. The possibility exists that the reliability and validity indices of this research in some instances being lower than those countries in which English is a first language. Four percent of the respondents have a qualification lower than matric. Their English fluency is under suspicion that may have limited the value of the research. The above limitations create an opportunity for South African researchers to adapt these instruments to local conditions.

The above section elaborated on the limitations of the empirical research. The next section finalises the thesis in the form of a concluding perspective.

Remark: The final step of the empirical objective is achieved in this chapter by dealing with the conclusions, recommendations and limitations of the research.

6.5 CHAPTER SUMMARY

The research with regard to the *dynamics of individual vigour and burnout in the police service* was conducted by taking a systematic stance. This chapter deals with the conclusions, recommendations and limitations of the study. Several conclusions, recommendations and limitations were listed and explained. Conclusions were made about the theoretical as well as the empirical sections of this research. Recommendations were made for theoretical as well as empirical considerations. In addition, a new theoretical model was proposed to explain vigour and burnout in the police service. The outcome of the research points to new findings unique to police work environments. These findings revealed an understanding of the dynamics of individual vigour and burnout as outcomes

in the stress and coping process. Such findings were thoroughly documented. Recommendations were made to enhance research in this particular domain, as well as to improve psychological well-being in police work environments in particular. Recommendations are also applicable to work organisations in the broader sense. Police officers indicated that during high levels of burnout, their energy resources are so depleted that personality and social support do not make any difference in any decision-making in order to avoid the negative effect of organisational stressors. Adverse responses were also indicated. For example, it was discovered that individuals living a challenging, vigorous and proactive life, experience a positive affective state. In addition, personality and social resources although limited, have a direct positive influence on psychological health

Besides the above, limitations were also identified and discussed in this chapter. A remark that can be made, is that police officers are committed to render a service to those who are in need. These officers and their families deserve special attempts to be made in order to preserve and promote their physical and psychological well-being.

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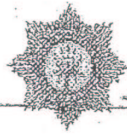
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PERMISSION TO CONDUCT RESEARCH

South African Police Service

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THE HEAD
STRATEGIC MANAGEMENT
PRETORIA
0001

8 December 2005

GERRIT LOUW
NELSON MANDELA METROPOLITAN UNIVERSITY
PORT ELIZABETH

**RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH : THE DYNAMICS
 OF INDIVIDUAL VIGOUR AND BURNOUT**

1. Your e-Mail dated 23 November 2005 refers.
2. You are hereby given permission to conduct research on the above mentioned topic at the following training sites:
 - 2.1 Training Centre Port Elizabeth
 - 2.2 Training Centre Graaff-Reinet
 - 2.3 Training Centre Paarl
3. Approval for the study was also granted by Asst-Comm J Phahlane, Head Basic Training, SAPS.
4. Please ensure that there is no intrusion upon normal duties of police members. The SAPS must receive a copy of the final research document.
5. Copies of this letter must be submitted to the relevant role players.

ASSIST-COMM
 HEAD: STRATEGIC MANAGEMENT
 G E MOORCROFT

RESEARCH REQUEST**DYNAMICS OF INDIVIDUAL VIGOUR AND BURNOUT**

You are kindly requested to take part in a research project in order to determine the Dynamics of individual vigour and burnout in the S A Police Service. Your participation is anonymous, but you may arrange personal feedback with the researcher who is a Registered Industrial Psychologist. All information and feedback will be regarded as confidential.

Thank you for your time. You may now proceed with the answering of the questions. Please complete **ALL SEVEN** questionnaires in this booklet.

PLEASE TURN OVER

Biographical Questionnaire**Biographic Information**

Please complete the following biographic information by marking **ONE OPTION** in **EACH** category with a X or a circle.

GENDER: Male ① Female ③

ETHNICITY: Black ① White ② Coloured ③ Indian ④

RANK: Recruit ① Constable ② Sergeant ③ Inspector ④

Captain-Superintendent ⑤ Snr Supt or Higher ⑥ Other: ⑦

MARITAL STATUS: Single ① Married ② Divorced ③

YEARS OF SERVICE: Less than 3 years ① 3-5 years ② 6-10 years ③

11-15 years ④ 16-20 years ⑤ 21 + years ⑥

EDUCATION:

Lower than matric ① Matric ② Diploma ③ Graduate ④

Post Graduate ⑤

PLEASE TURN OVER

Organisational Police Stress Questionnaire

Below is a list of items that describe different aspects of being a police officer. After each item, please circle how much stress it has caused you over the past six months, using a 7-point scale (see below) that ranges from “No Stress AT All” to “A Lot Of Stress”.

No Stress at all			Moderate Stress			A Lot of stress
1	2	3	4	5	6	7

- | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|
| 1. | Dealing with co-workers. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. | The feeling that different rules apply to different people. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. | Feeling like you have to prove yourself to the organization. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. | Excessive administrative duties. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. | Constant changes in policy/legislation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. | Staff shortages. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. | Bureaucratic red tape. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. | Too much computer work. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. | Lack of training on new equipment | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. | Perceived pressure to volunteer free time. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. | Dealing with supervisors. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. | Inconsistent leadership style. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. | Lack of resources. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. | Unequal sharing of work responsibilities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. | If you are sick or injured your co-workers seem to look down on you. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. | Leaders over- emphasize the negatives (e.g. supervisor Evaluations, public complaints). | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. | Internal investigations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. | Dealing with the court system. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. | The need to be accountable for doing your job. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. | Inadequate equipment. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

The Multidimensional Scale of Perceived Social Support

(Zimet et al.,1988)

Directions: The statements which follow refer to feelings and experiences which occur to most people at one time or another in their relationships with friends that serve as a coping resource. For each statement there are seven possible answers: Strongly disagree, disagree, slightly disagree, neither agree or nor disagree, slightly agree, agree or strongly agree. Please circle the answer you choose for each items

Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree				
1	2	3	4	5	6	7				
1.	There is a special person who is around when I am in need.			1	2	3	4	5	6	7
2.	There is a special person with whom I can share my joys and sorrows.			1	2	3	4	5	6	7
3.	My family really tries to help me.			1	2	3	4	5	6	7
4.	I get the emotional help and support I need from my family.			1	2	3	4	5	6	7
5.	I have a special person who is a real source of comfort to me.			1	2	3	4	5	6	7
6.	My friends really try to help me.			1	2	3	4	5	6	7
7.	I can count on my friends when things go wrong.			1	2	3	4	5	6	7
8.	I can talk about my problems with my family.			1	2	3	4	5	6	7
9.	I have friends with whom I can share my joys and sorrows.			1	2	3	4	5	6	7
10.	There is a special person in my life who cares about my feelings.			1	2	3	4	5	6	7
11.	My family is willing to help me make decisions			1	2	3	4	5	6	7
12.	I can talk about my problems with my friends.			1	2	3	4	5	6	7

Goldberg (1992) Five Factor Inventory

Please describe yourself as you **see yourself at the present time**, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and roughly your same age. For each trait scales listed, **circle** a number that best describes you on this dimension.

	INTROVERSION VERSUS EXTRAVERSION									
	Very		Moderately		Neither		Moderately		Very	
silent	1	2	3	4	5	6	7	8	9	talkative
unassertive	1	2	3	4	5	6	7	8	9	assertive
unadventurous	1	2	3	4	5	6	7	8	9	adventurous
unenergetic	1	2	3	4	5	6	7	8	9	energetic
timid (shy)	1	2	3	4	5	6	7	8	9	bold
	ANTAGONISM VERSUS AGREEABLENESS									
unkind	1	2	3	4	5	6	7	8	9	kind
uncooperative	1	2	3	4	5	6	7	8	9	cooperative
selfish	1	2	3	4	5	6	7	8	9	unselfish
distrustful	1	2	3	4	5	6	7	8	9	trustful
stingy (sparing)	1	2	3	4	5	6	7	8	9	generous
	LACK OF DIRECTION VERSUS CONSCIENTIOUSNESS									
disorganised	1	2	3	4	5	6	7	8	9	organised
irresponsible	1	2	3	4	5	6	7	8	9	responsible
impractical	1	2	3	4	5	6	7	8	9	practical
careless	1	2	3	4	5	6	7	8	9	thorough
lazy	1	2	3	4	5	6	7	8	9	hardworking
	EMOTIONAL STABILITY VERSUS NEUROTICISM									
relaxed	1	2	3	4	5	6	7	8	9	tense
at ease	1	2	3	4	5	6	7	8	9	nervous
stable	1	2	3	4	5	6	7	8	9	unstable
contented	1	2	3	4	5	6	7	8	9	discontented
unemotional	1	2	3	4	5	6	7	8	9	emotional
	CLOSEDNESS VERSUS OPENNESS TO NEW EXPERIENCE									
unimaginative	1	2	3	4	5	6	7	8	9	imaginative
uncreative	1	2	3	4	5	6	7	8	9	creative
uninquisitive	1	2	3	4	5	6	7	8	9	curious
unreflective	1	2	3	4	5	6	7	8	9	reflective
unsophisticated	1	2	3	4	5	6	7	8	9	sophisticated
	Very		Moderately		Neither		Moderately		Very	

Brief COPE Inventory

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel, when you experience stressful events. Obviously, different events bring out somewhat different response, but think about what you usually do when you are under a lot of stress.

There are not right or wrong answers, and responses must indicate what you do rather than what "most people" do. Indicate how much your reaction are described by each statement from:.

1 = I usually don't do this as all

2 = I usually do this a little bit

3 = I usually do this a medium amount

4 = I usually do this a lot

1.	I've been concentrating my efforts on doing something about the situation I'm in.	1	2	3	4
2.	I've been taking action to try to make the situation better.	1	2	3	4
3.	I've been trying to come up with a strategy about what to do.	1	2	3	4
4.	I've been thinking hard about what steps to take.	1	2	3	4
5.	I've been trying to see it in a different light, to make it seem more positive	1	2	3	4
6.	I've been looking for something good in what is happening.	1	2	3	4
7.	I've been accepting the reality of the fact that is has happened.	1	2	3	4
8.	I've been learning to live with it.	1	2	3	4
9.	I've been making jokes about it.	1	2	3	4
10.	I've been making fun of the situation.	1	2	3	4
11.	I've been trying to find comfort in my religion or spiritual beliefs.	1	2	3	4
12.	I've been praying or meditating.	1	2	3	4
13.	I've been getting emotional support from others.	1	2	3	4
14.	I've been getting comfort and understanding from someone.	1	2	3	4
15.	I've been trying to get advice or help from other people about what to do.	1	2	3	4
16.	I've been getting help and advice from other people.	1	2	3	4
17.	I've been turning to work or other activities to take my mind off things.	1	2	3	4
18.	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	1	2	3	4
19.	I've been saying to myself "this isn't real.	1	2	3	4
20.	I've been refusing to believe that it has happened.	1	2	3	4
21.	I've been saying things to let my unpleasant feelings escape.	1	2	3	4
22.	I've been expressing my negative feelings.	1	2	3	4
23.	I've been using alcohol or other drugs t make myself feel better.	1	2	3	4
24.	I've been using alcohol or other drugs to help me get through it.	1	2	3	4
25.	I've been giving up trying to deal with it.	1	2	3	4
26.	I've been giving up the attempt to	1	2	3	4
27.	I've been criticizing myself.	1	2	3	4
28.	I've been blaming myself for things that happened.	1	2	3	4

Shirom-Melamed Vigor Measure (SMVM)**How Do You Feel at Work?**

Below are a number of statements that describe different feelings that you may feel at work.

Please indicate how often, in the past 30 workdays, you have felt each of the following feelings:

How often have you felt this way at work?

	Never or almost never	Very infrequently	Quite infrequently	Sometimes	Quite frequently	Very frequently	Always or almost always
1. I feel full of pep.	1	2	3	4	5	6	7
2. I feel I have physical strength	1	2	3	4	5	6	7
3. Feeling vigorous.	1	2	3	4	5	6	7
4. I feel energetic.	1	2	3	4	5	6	7
5. Feeling of vitality.	1	2	3	4	5	6	7
6. I feel I can think flexibly .	1	2	3	4	5	6	7
7. I feel I can think rapidly.	1	2	3	4	5	6	7
8. I feel I am able to contribute new ideas.	1	2	3	4	5	6	7
9. I feel able to be creative.	1	2	3	4	5	6	7
10. A feeling of flow.	1	2	3	4	5	6	7
11. I feel able to show warmth to others.	1	2	3	4	5	6	7
12. I feel able to be sensitive to the needs of coworkers and customers.	1	2	3	4	5	6	7
13. I feel I am capable of investing emotionally in coworkers and customers.	1	2	3	4	5	6	7
14. I feel capable of being sympathetic to co-workers and customers.	1	2	3	4	5	6	7

Shirom-Melamed Burnout Measure (SMBM)**How Do You Feel At Work?**

The following is a list of feelings that we all experience from time to time at work. Please indicate the frequency of appearance of each feeling during your working hours in the last month.

	Almost <u>Never</u>	Very <u>infrequently</u>	Quite <u>infrequently</u>	<u>Sometimes</u>	Quite <u>Frequently</u>	Very <u>Frequently</u>	Almost <u>Always</u>
1. I feel tired	1	2	3	4	5	6	7
2. I feel physically drained. .	1	2	3	4	5	6	7
3. I feel physically exhausted.	1	2	3	4	5	6	7
4. I have no energy for going to work in the morning.	1	2	3	4	5	6	7
5. I feel fed up.	1	2	3	4	5	6	7
6. I feel like my emotional "batteries" are "dead".	1	2	3	4	5	6	7
7. I feel emotionally burned out in my job.	1	2	3	4	5	6	7
8. I feel emotionally fatigued	1	2	3	4	5	6	7
9. I am too tired to think clearly.	1	2	3	4	5	6	7
10. I have difficulty concentrating.	1	2	3	4	5	6	7
11. My thinking process is slow.	1	2	3	4	5	6	7
12. I have difficulty thinking about complex things.	1	2	3	4	5	6	7