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The Impact of Hardiness on Organisational Outcomes: Investigating Appraisal and Coping Processes Through Alternative Transactional Models

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Abstract

This study tested the relationship of the personality variable of hardiness to the organisational outcomes of job satisfaction, performance and intention to turnover. These relationships were also tested via two alternative transactional models, with a sequential and simultaneous structure for the appraisal and coping processes. Employees ($N = 297$) from a range of large New Zealand organisations completed a questionnaire on hardiness, appraisal, coping, affect and the three distal outcomes. Bivariate correlations revealed significant positive relationships between hardiness and job satisfaction, hardiness and performance, and a significant negative relationship with intention to turnover. Structural equation modelling results revealed that the direct relationship between hardiness and job satisfaction was the strongest path, which indicates that the higher an employees level of hardiness the higher their likely level of job satisfaction. The simultaneous model provided best fit to the data, revealing a positive path from hardiness through challenge appraisals to positive affect, and a negative path through threat appraisal and emotion-focused coping. This study concludes that higher levels of hardiness are associated with more positive situational appraisals and more effective coping responses.

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Chapter 1: Introduction

Every day people experience situations that have the potential to be stressful. This is particularly true in the workplaces of 2009, with turbulent financial times and ever increasing rates of workplace change. However, people react very differently to situations such as these. While some people physically and mentally fall apart when facing major change, others have been shown to flourish in this type of situation (Kobasa, 1979).

Research over the last 30 years has investigated a personality variable called cognitive hardiness (hereafter called hardiness), which is proposed to distinguish between those that do well and those that do not under stressful situations. Hardiness is a set of beliefs and attitudes that people bring to the situation, which affects how the situation is perceived and what is done to manage the situation.

This topic has developed out of the positive psychology movement, which focuses on the good things in people's lives and factors that help people flourish (Seligman & Csikszentmihalyi, 2000). In contrast to much of the early literature which focused on pathology and deficits, this movement increased the recognition that people can actually experience positive outcomes from difficult and stressful circumstances, such as soldiers during war duty (Britt, Adler, & Bartone, 2001).

Hardiness as a concept has grown in popularity across the academic and popular literatures. A search of PsychINFO in November 2008 revealed close to 1000 studies that referenced

“hardiness”, “cognitive hardiness” or the “hardy personality”. As this concept entered the literature for the first time in 1979, it shows what considerable interest has blossomed in this topic over the last thirty years. This academic interest has been accompanied by an interest within popular literature, with numerous self-help books telling readers how to display ‘Resilience at Work’ (Maddi & Khoshaba, 2005), and in ‘Stress for Success’, how to use feelings of stress to meet professional challenges (Loehr, 1997).

This study has two broad aims. The first is to investigate the impact of hardiness on organizational outcomes. For instance, his study will explore the degree to which a person’s level of job satisfaction is explained by their level of hardiness; whether their level of hardiness explains their work performance, and whether hardiness levels can help to explain a person’s intention to leave the organization. The second aim is to explore the processes that underlie the relationships between hardiness and outcomes, and to find the best model to reflect these processes.

Although hardiness is often expected to have direct relationships with outcomes such as satisfaction and performance (Maddi et al., 2006; McCalister, Dolbier, Webster, Mallon, & Steinhardt, 2006; Rush, Schoel, & Barnard, 1995), theoretical models suggest that these relationships are influenced by appraisal and coping. It is unclear, however, how the concepts of appraisal and coping are structured. There is support for a sequential model (King & Gardner, 2006; Lazarus & Folkman, 1984), where a person appraises a situation and this leads to particular types of coping responses. However, recent

research suggests this may not be the best reflection of the relationships between appraisal and coping. In particular, Florian, Mikulincer, and Taubman (1995) argue that these processes cannot be separated and proposed an alternative 'simultaneous' model. These two conceptualizations will be tested for their fit to the responses collected from New Zealand employees.

Outline of Remaining Chapters

Chapter two explores the concept of hardiness, what it is, what it relates to and what problems have arisen with the concept since its development. The relationships between hardiness and the outcomes of job satisfaction, performance and intention to turnover are described in chapter three. The transactional model of stress is outlined in chapter four, detailing its components and the relationships that exist with hardiness. Chapter five presents the traditionally conceptualised sequential model and chapter six outlines an alternative simultaneous model, which is followed by a comparison and critique of the two model versions. The methods and procedures used in this study are described in chapter seven, and results are presented in chapter eight. The thesis is completed by a discussion of the main findings and an outline of the practical and theoretical implications.

Chapter 2: Hardiness

The world of work is undergoing constant and escalating rates of change (Sparks, Faragher, & Cooper, 2001). As the demands on employees increase, there has been a corresponding interest in identifying people who are able to handle the pressure and thrive. Hardiness emerged as a distinguishing factor, and it is thus becoming an increasingly 'hot' topic for academics, practitioners and individuals alike (Maddi, 2006; Maddi & Khoshaba, 2005).

This chapter defines the concept of hardiness and outlines its development. Various issues and problems are then reviewed, relating to the underlying concept, how it has been measured, and factors involved with its testing that have plagued the construct over the last thirty years.

Definition

Researchers in other fields struggle to agree upon concept definitions. However, hardiness researchers have been reasonably consistent in following the definition used Kobasa, Maddi, and Kahn, that hardiness is “a constellation of personality characteristics that function as a resistance resource in the encounter with stressful life events” (1982a, p. 169). According to the original theory, hardiness is a multidimensional construct composed of three related attitudes or the three C's: commitment, control and challenge (Kobasa, 1979).

Individuals high in commitment identify with, and find meaning in, whatever is happening around them. They have a generalised sense

of purpose through which they invest time and energy into the events, things and people in their environment (Kobasa et al., 1982a). Low commitment is likely to be expressed as avoidance and passivity.

Hardy individuals are also said to be characterised by high levels of control. This is the tendency to believe and act as if they can influence outcomes. Kobasa et al. (1982) notes that it is not about naively believing that they can completely determine all around them, but more about having a belief that through exercising imagination, knowledge, skill and choice they can have an impact. Low control is the tendency to feel helpless and powerless to alter situations.

A high level of challenge is the third component of hardiness, which is the belief that change rather than stability is the norm. While people low in hardiness are liable to see change as a threat to their security, hardy individuals tend to see change as an opportunity for growth and development (Kobasa et al., 1982a).

There is considerable concern as to the measurement and relevance of the challenge component. A number of authors have found that challenge does not correlate well with other hardiness factors, nor does it relate to coping or outcome variables (e.g. Florian et al., 1995; Klag & Bradley, 2004; Sheard & Golby, 2007). In a bold statement, Hull et al. (1987) recommended that challenge be dropped in future research. However, the lack of significant findings could be due to psychometric inadequacies. It could be that challenge is related to non measured coping variables, or that the effects of challenge operate through means other than coping (Williams, Wiebe, & Smith, 1992). There are also studies which have found challenge to

have adequate psychometric properties and relationships to other variables (Maddi et al., 2006; Wallace, Bisconti, & Bergeman, 2001). For these reasons, hardiness in this study will be measured with all three components.

The Origins of the Concept

The theoretical foundation for hardiness lies with existential psychology (Maddi, 2002). According to existentialism, people live in constantly changing environments and are continually required to make decisions and take action, choosing between what is safe and known, and what is new and uncertain. Taking the “road less travelled” is the better existential option because it promotes personal development and fulfilment (Maddi, 2002). What helps people to overcome their anxieties about choosing the less secure path is the concept of existential courage. Maddi (2002) suggested that the three components of hardiness are the best available operationalisation of existential courage. The theoretical framework of existential psychology provided the basis for Kobasa and Maddi to interpret the findings of Kobasa’s (1979) study, the first that had revealed the concept of hardiness.

The first conceptualisation of hardiness emerged from a 12 year longitudinal study of managers at the Illinois Bell Telephone (IBT) company (Kobasa, 1979). This research measured and tracked the managers across the period of deregulation, during which there was significant organisational change and disruption. It was found that among the managers experiencing high levels of stress, those who exhibited the attitudes of commitment, control and challenge had

fewer mental and physical illness symptoms (Kobasa, 1979). Kobasa and colleagues published a number of other papers using the IBT data, all suggesting that hardiness provided protection against stress-related illnesses (Kobasa et al., 1982a; Kobasa, Maddi, & Puccetti, 1982b).

Since this first study, there has been considerable interest in the ability of hardiness to predict health outcomes. Rhodewalt and Zone (1989) conducted a study on 212 women regarding appraisal of life events, and found that hardiness exerted a significant negative main effect on depression and self reported illness. Testing for direct effects of hardiness and coping in a university sample, Beasley, Thompson, and Davidson (2003) found a direct negative effect of hardiness on depression and somatic distress. Within a military context, Bartone (1999) found clear evidence that soldiers on combat and peacekeeping missions who were higher in hardiness were less likely to display post traumatic stress or depression disorders on their return. These are just a few of the studies that suggest hardiness is a source of resistance against the negative effects of stress.

A Learnable Trait

Hardiness is generally understood to be a personality trait. Personality traits are defined as a “disposition to think, feel, and behave in a characteristic way over a range of situations” (Pervin, 2000, p. 100). Traits are by definition stable and relatively consistent across time. However, there are an increasing number of personality traits that are proposed to be learnable. Funder (1991) argues that traits are the product of how one has learned to interact with the

world; they are an interaction between one's experiences and genetic make-up. Thus, by exposing someone to facilitating conditions and experiences, it is possible that some traits such as hardiness (Maddi, Kahn, & Maddi, 1998), and emotional intelligence (Slaski & Cartwright, 2003), can be learned and developed.

Few people have investigated how hardiness is developed, although Kobasa, Maddi and Puccetti (1982b) developed hypotheses from social learning theory. They suggested that hardiness develops from positive childhood learning experiences, where parents provide a wide range of achievable challenges and experiences. Children are thought to develop an interest in being involved, a belief that they are influential and an expectation that change is normal and to be expected. Testing these theories, Khoshaba and Maddi (1999) used blind interviews and found that highly hardy managers remembered being selected by their parents to be successful, despite having quite a disruptive and stressful early family life. Having accepted that role, the individuals worked hard to justify the hope and support of the family. Both of these studies suggest that children with early opportunities to cope, and parents who believe in them, develop higher levels of hardiness. Following this logic, hardiness appears to develop in childhood under the right conditions, and as such should be learnable later in life if people are exposed to facilitating conditions.

Problems with Hardiness Construct

Since its conception in the late 1970's, the hardiness construct has been the subject of a number of criticisms (Funk, 1992; Funk & Houston, 1987; Greene & Nowack, 1995; Hull et al., 1987). Though

interrelated, these criticisms have been grouped into three main areas: those concerned with the way hardiness has been measured, what concepts it is independent from and what is the correct structure of the concept.

Measurement

There has been considerable criticism of the early measures of hardiness. Scales originally designed to measure alienation, powerlessness, need for security and external locus of control were utilised as negative indicators of hardiness (Kobasa, 1979). Trying to infer hardiness' presence by the measures' absence is very difficult and conceptually questionable. For example, the alienation scale was supposed to negatively represent commitment, although Funk and Houston (1987) suggested that the opposite of alienation may be more appropriately represented by the concept of unity. It is now a common observation that "early hardiness research was plagued by measurement problems" (Maddi et al., 2002, p. 73).

However, the scales used to measure hardiness have undergone considerable revision and are now in their "third generation" (Maddi & Khoshaba, 1994). The modern measures have moved to a much higher percentage of positive items, removing the 'presence by absence' dilemma, and consistently achieve adequate psychometric standards (Bartone, 2007a, 2007b; Maddi & Khoshaba, 2001).

Unfortunately, with the early measurement issues there was a multitude of scales and versions used to measure hardiness. Therefore, it is very difficult to compare hardiness studies and make any firm conclusions. As such, Funk (1992) questioned whether the

differences in health outcomes in the studies he reviewed were real, or whether they were effects of the different scales used. He thus advocated the adoption of a standard hardiness measure, and recommended the 45 item Dispositional Resilience Survey (Bartone, Ursano, Wright, & Ingraham). This was said to have several key advantages over the alternate Personal Views Survey (Hardiness Institute), including more positively keyed items, equal numbers of items to measure commitment, control and challenge, and ready availability of the items and scoring system. This research used the DRS15-R (Bartone, 2007a), which was revised according to Funk's (1992) recommendations.

Independence

In 1995, Greene and Nowack criticised the adequacy of research to distinguish hardiness and show it to be independent from similar constructs. Conceptual distinction is an important consideration, though it is often paid little attention in much of the social and personality published literature. The following discussions will present the concepts of neuroticism, resilience, optimism and self-efficacy, highlighting the differences between each of these and the construct of hardiness.

Neuroticism

A major and persistent criticism of the hardiness concept is that it is confounded with neuroticism (Funk, 1992; Hull et al., 1987). Neuroticism is an aspect of normal personality represented by the tendency to experience negative affect, and is often measured by scales of anxiety, depression, and low self-esteem (Costa & McCrae, 1992).

These scales are very similar to those that were originally used to measure hardiness, provoking questions about the differences between the concepts. Other concerns about the potential confound come from Funk's (1992) summary in which seven studies found significant correlations between the two concepts, and Rhodewalt and Zone's (1989) study where the ability of hardiness to predict illness disappeared when neuroticism was controlled. Further empirical research was needed to clarify the relationship.

A number of more recent investigations, using better developed measures, have found hardiness to be different from neuroticism. Kravetz, Drory, and Florian (1993) investigated the independence of hardiness from measures of anxiety, depression and anger in men with coronary heart disease. Using a confirmatory factor analysis approach they concluded that hardiness was a distinct construct. Maddi et al., (2002) used a university staff sample to investigate hardiness and the five-factor model of personality using the NEO-FFI, within which neuroticism is a factor. Their results showed that hardiness had a significant relationship with all five factors, further indicating that hardiness is tapping more than just neuroticism. Finally, two studies using undergraduate students and army recruits found that controlling for neuroticism did not cancel out the predictive effects of hardiness (Florian et al., 1995; Sinclair & Tetrick, 2000). Taken together, these studies indicate that the new 'third generation' hardiness scales are not merely measures of neuroticism, and that neuroticism and hardiness are empirically distinct constructs.

Hardiness and Resilience

Discrepancies exist in the literature regarding the differences between resilience and hardiness. Some researchers use the two concepts interchangeably. For example, in their book '*Resilience at work*', Maddi and Khoshaba (2005) state that "the resilient group had the hardy attitudes of commitment, control and challenge" (p. 3) distinguishing hardiness as a set of attitudes or resources that lead to resilience. On other occasions, they discuss the same concepts as the "three resilient attitudes" (p. 19), presenting resilience as the personality trait. The muddling of the terms resilience and hardiness makes separating these concepts difficult, though there are authors who have made clear distinctions between the terms.

Researchers such as Luthar and Cicchetti (2000) make a clear separation between resilience and hardiness. Resilience has been defined as a "dynamic process wherein individuals display positive adaptation despite experiences of significant adversity or trauma" (Luthar & Cicchetti, 2000, p. 858). This definition presents resilience as a two part concept, combining exposure to adversity and positive adjustment. Hardiness, in turn, is focused on the aspects of personality that affect the way individuals view and behave in stressful situations. Hardiness is thus a personality trait, and an input variable into the process of resilience. In support of this view, the clinical psychologist Bonanno (2004) described hardiness as one of multiple paths that lead to resilience.

Hardiness and Optimism

Optimism is a generalised expectation of successful outcomes that promotes action towards goals, even under difficult circumstances

(Carver & Scheier, 2002). In short, optimists are people who expect their future outcomes to be good, and are confident and persistent in working towards their goals. Maddi and Hightower (1999) argue that optimism is very similar to the control aspect of hardiness, which is the belief that individuals have that they are able to expend effort and thus influence their outcomes. Hardiness, however, is broader than optimism because it contains two further aspects; commitment and challenge.

Three studies were reported by Maddi and Hightower (1999), suggesting that although hardiness and optimism are positively correlated ($r=.49$ to $.55$, $p<.001$), they differ in their relationships with coping strategies. Hardiness showed positive relationships with active coping, planning and seeking social support, and negative relationships with denial and disengagement across both life threatening and general life stressors. Optimism only showed a clear relationship to problem solving efforts when experiencing stress associated with a life threatening illness. This suggests that while optimism encourages problem solving strategies in life threatening situations, hardy people tend to use a range of active strategies across situations. Hardy people are also less likely to avoid dealing with the situation, highlighting a clear distinction between optimism and hardiness.

Hardiness and Self-efficacy

Self-efficacy is another concept that shows similarities to hardiness. It was originally defined as the “conviction that one can successfully execute a specific behaviour required to produce a

specific outcome” (Bandura, 1977, p. 193), meaning it is a person’s belief in their ability to achieve a particular outcome by acting in a particular way. Self-efficacy defined in this way is a domain specific concept, meaning people tend to have different beliefs about their abilities, for example, to analyse financial information, fix a machine, or do an oral presentation. High levels of self-efficacy in one domain cannot necessarily be generalised to other domains. It is on this point that Maddux (2002) distinguished self-efficacy from hardiness, because hardiness is a generalised personality trait. Hardy people, being high in control, believe they are able to influence their outcomes across the spectrum of encounters that occur in everyday life.

Self-efficacy has also been defined in a much more general way, such as “people’s beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives” (Bandura, 1991, p. 257). While this concept of generalised self-efficacy has a much closer bearing to hardiness, it still only addresses the control aspect. As discussed above with optimism, hardiness is also composed of attitudes of commitment and challenge. It is more than just perceptions of control.

Structure

A major and ongoing controversy involves the conceptualisation of hardiness. The original theory proposed hardiness as a unitary concept with three underlying components, though there have also been calls that hardiness is better represented as three separate constructs (Carver, 1989; Kobasa, 1979). Most principal component analyses of hardiness items have found three factors, though the

composition of these three factors has varied (Bartone et al., 1989; Hull et al., 1987). However, exploratory factor analyses are not very powerful techniques for confirming a hypothesised structure, especially one where there are thought to be nested levels of a construct. Confirmatory factor analyses have tended to confirm a hierarchical structural model, where three facets of hardiness are nestled under a global construct (see Figure 1).

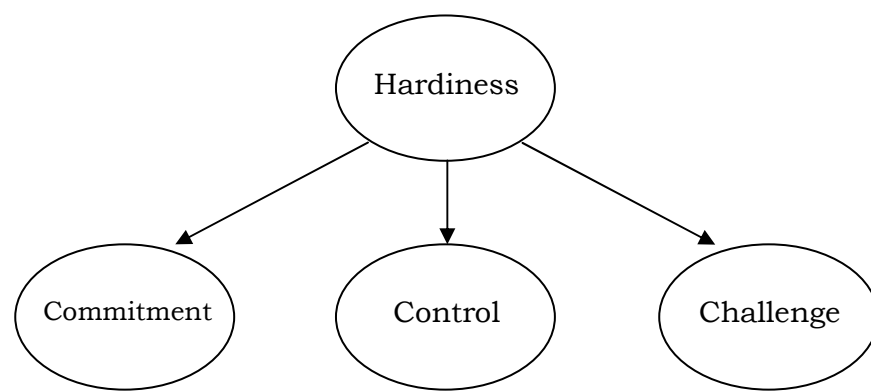


Figure 1. Hierarchical model of hardiness with three underlying facets.

Criterion-related validity is assessed by looking at the correlations between the dimensions as well as the relationships between the dimensions and outcomes. Much of the research to date has found small to moderate positive correlations between the three dimensions, and different relationships between the dimensions and outcomes (Florian et al., 1995; Greene & Nowack, 1995; Hull et al., 1987; Klag & Bradley, 2004; Sinclair & Tetrick, 2000), further supporting hardiness as a unitary latent concept with underlying dimensions.

This chapter has looked at the concept of hardiness and how it has been the subject of many and ongoing criticisms. These issues have resulted in substantially better measures of the concept, and greater conceptual clarification and understanding. While there are still relevant concerns, this shows that there is still much to be done to fully understand and accurately measure the concept of hardiness. One of these areas regards the impact of hardiness on variables that are of particular interest to organisations, such as job performance, job satisfaction and intention to turnover and this will be investigated in the next chapter.

Chapter 3: Hardiness and Outcomes

With the rapidly changing nature of work, employers and employees alike need to find ways to manage these demands effectively. Hardiness has the potential to be a powerful explanatory variable, to distinguish between those individuals who flourish under these considerable work pressures and those who struggle. This study has been designed to link hardiness to three organisationally relevant outcomes: performance, job satisfaction, and intention to turnover.

Performance

Organisational performance is based on individual performance and productivity. Even though New Zealand is amidst the global financial recession, there is still a shortage of skilled workers (Fallow, 2008). Thus, it is important for organisations to improve the levels of productivity in their current employees. Finding additional ways to explain and predict employee performance should assist practitioners optimise their existing human resources, and ultimately increase overall organisational performance.

There is substantial support for a relationship between hardiness and performance. Maddi and Hess (1992) were able to predict, using hardiness scores, the performance of university basketball players on six out of seven performance indices. Hardiness also predicted all measures of course performance for a group of Israeli defence force personnel, as well as performance on a different course six months later, and on-the-job performance ratings a year later (Westman, 1990). The idea is that hardy people are committed to the activities

they are engaged in, and tend to be more willing to spend the time and effort to meet performance goals. Hardy people are also thought to have a belief in their ability to perform and influence their outputs, and to be more accepting of new and difficult tasks to broaden their knowledge and skills.

Maddi et al.'s (2006) study confirmed these ideas when investigating performance effectiveness in a professional services firm. They used both objective and subjective performance criteria, in the form of hours billed to clients and global effectiveness evaluations from senior management. Significant correlations were found between hardiness and two measures of performance in the year the test was administered, as well as for a measure of performance the following year. The entrepreneurial nature of this work supported the theoretical reasoning, because good performance scores required going out to sell to clients, requiring time and effort, self belief and acceptance of difficult tasks. Taken together, these findings suggest a positive relationship between hardiness and performance.

Hypothesis 1: Hardiness will have a positive relationship with work performance

Job Satisfaction

Job satisfaction is “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences” (Locke, 1976, p. 1304), and it is one of the most studied variables in organisational psychology (Spector, 2006). It continues to be an important variable in organisational research because it is central to many theories about employee behaviour, and has been linked to a

range of outcomes including job performance, turnover, health and well-being (e.g. Faragher, Cass, & Cooper, 2005; Griffeth, Hom, & Gaertner, 2000; Judge, Thoresen, Bono, & Patton, 2001).

The relationship between hardiness and job satisfaction has been established in a number of different samples. One study looking at the effects of personality and social support on levels of stress and well-being, found hardiness to have a significant correlation with work satisfaction at both time 1 ($r = .57, p < .001$) and time 2 ($r = .52, p < .001$), (Luszczynska & Cieslak, 2005). Hardiness was also significantly positively correlated with job satisfaction across four distinct samples, with employees from a 'high-tech' firm, a government department, a large health insurer and a small manufacturing firm (Manning, Williams, & Wolfe, 1988; McCalister et al., 2006).

The existential origins of the concept provide a theoretical basis for the link. Hardy people are more likely to choose new and different paths over safe and known ones. Thus, they are more likely to engage in new experiences, growing and developing, ultimately striving for a sense of personal fulfilment and satisfaction. Hardy people are also likely to be committed and engaged with the people and events that surround them. Being more involved and engaged at work has been shown to be correlated with higher levels of job satisfaction (Saks, 2006). Because the control facet is very similar to the locus of control concept (Kobasa, 1979), people high in hardiness are more likely to attribute work successes and achievements as a result of their own behaviours. Attributing success internally has been shown to relate to

higher satisfaction at work compared to people who attribute success to factors outside themselves (Moyle & Parkes, 1999).

The most targeted test of the relationship between hardiness and job satisfaction comes from a study using senior-level public sector employees (Rush et al., 1995). Testing a model that hardiness had direct effects on coping and stress, this model was improved by adding a path directly from hardiness to job satisfaction. The fact that this path was significant (.33, $p < .05$) and that it only had a minor effect on most other path coefficients gives strong support to a relationship between hardiness and job satisfaction.

Hypothesis 2: Hardiness will have a positive relationship with job satisfaction

Intention to Turnover

Turnover is a costly and disruptive problem facing many organisations. The cost of replacing one employee has been calculated at as much as 1.6 times the employee's annual salary (Tziner & Birati, 1996), and Waldman, Kelly, Arora and Smith (2004) calculated that it would be revenue neutral to pay a departing employee a 'staying bonus' of 89 percent of their annual salary. With such a real need for practitioners to address and remedy the rates of voluntary turnover within organisations, researchers have been trying to identify the factors that lead to turnover. Intention to turnover is important to understand because it appears to be the immediate precursor to actual quitting (Griffeth et al., 2000). By more fully understanding the antecedents to intentions, it can provide organisations with another tool in the management of turnover.

There are many reasons that people leave a job such as injury, other interests and family problems, although these tend to be things that an organisation has little influence over. In terms of preventable or voluntary turnover, it has been shown that some personality factors such as conscientiousness and agreeableness have an impact on the likely rate of leaving (Barrick & Mount, 1991). Hardiness is thus proposed as another aspect of personality that could help explain an individual's likelihood of leaving an organisation.

This research predicts a negative relationship between hardiness and a persons' intention to turnover. This is because hardy people are characterised by a commitment to the people and events in their life. This construct is essentially a sense of value, meaningfulness and purpose in one's life which is expressed by deeply involving oneself in personally relevant activities and relationships. This definition suggests that there is likely to be a relationship with intention to turnover, because individuals who are involved and engaged are less likely to withdraw and make the decision to leave. In support of this, Sax (2006) found that engagement was a significant negative predictor of intention to turnover. This also concurs with the only workplace study that has directly investigated the relationship between hardiness and intention to turnover. Law (2005) incorporated hardiness into a model of turnover for public accountants and found that hardiness had a significant negative relationship to intention to turnover ($r = -.37, p < .001$). When the other variables (affective and continuance commitment) were held constant, hardiness also emerged as a significant predictor in the regression equation.

The relationship between hardiness and intention to turnover, however, is thought to be best explained by the mediating variable of job satisfaction. As discussed above, hardiness is predicted to have a direct relationship to job satisfaction, which is recognised in the literature as a direct antecedent of intentions to turnover (Griffeth et al., 2000; Judge et al., 2001). In practical terms this suggests that hardier people are less likely to intend to leave because of their higher levels of job satisfaction. Rush et al.'s (1995) study with 325 senior government employees found support for job satisfaction as the mediator between hardiness and intention to turnover.

Hypothesis 3a: Hardiness will have a negative relationship with intention to turnover

Hypothesis 3b: The relationship between hardiness and intention to turnover will be mediated by job satisfaction

The composite measure of hardiness is proposed to be positively related to performance and job satisfaction, and negatively related to intention to turnover. These direct predictions solidify the influence of hardiness beyond the health variables it is commonly associated with. However, much of the theory that links hardiness to outcomes operates through the transactional model of stress. The following chapter presents the transactional model and outlines the role of its three components: appraisal, coping and affect. These factors are used to describe the process through which hardiness influences job satisfaction, performance and intention to turnover.

Chapter 4: Transactional Model of Stress

There are three traditional forms of psychological stress model. The stimulus or environment-based model depicts stress as a function of factors in the environment, such as temperature or demanding workloads (e.g. Cox, 1990). The alternative response or person-based model looks at stress as an individual's responses to a given stressor (Staal, Bolton, Yaroush, & Bourne, 2008). Neither of these approaches fully describes the process of stress because the person and the environment are seen as distinct entities. The transactional model proposed by Lazarus and Folkman (1984) combines these two perspectives and advocates that the process of stress is more than the sum of these two parts.

The transactional model is focused on the dynamic interaction between the person and environment. It does not suppose that a person will react the same way in all situations, or that the situation dictates a certain response. Stress, according to the transactional model, is the interaction between the person and the environment, where the demands are appraised as taxing or exceeding the person's resources (Lazarus & Folkman, 1984). This takes into account the context as it is perceived by the individual, and compares it to the individual's available resources (such as knowledge, skills and abilities). This process has been labelled appraisal.

Appraisal is essentially where a person evaluates the relevance of an event in their environment, and decides whether it is likely to have a positive or negative effect for them, based on their resources

(Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986a). If the situation is deemed to have positive effects, where a person's resources exceed the demands of the situation, a challenge appraisal will result. For those situations where negative effects are likely, with demands exceeding resources, the person will make a threat appraisal. Appraisal processes are outlined in more detail below. Having made an appraisal, a person will attempt to manage their responses to the stressful event.

Coping describes the efforts people make to manage the perceived situational and internal demands (Lazarus & Folkman, 1984). These efforts can be cognitive or behavioural, focused on the problem at hand, or on managing the emotions triggered by the problem. With over 400 individual coping strategies identified (Skinner, Edge, Altman, & Sherwood, 2003), these are necessarily grouped to allow findings to be compared. While the factor structure of coping has proved problematic, there is increasing support for a four factor structure (Folkman & Moskowitz, 2004; Zautra, Sheets, & Sandler, 1996). *Problem-focused coping* strategies such as planning and taking action are centred on "fixing the situation". *Seeking social support* are those strategies aimed to get practical or emotional assistance from others. *Cognitive restructuring* strategies are centred on accepting or altering the way a situation is viewed. *Emotion-focused coping* strategies aim to manage the negative emotions triggered by the problem and incorporate strategies such as giving up and self-blame. Coping processes are also outlined in more detail below.

The immediate result of appraisal and coping efforts is seen in a person's affective response (Simmons & Nelson, 2001). In line with stress researchers' almost exclusive focus on the negative effects of stressful transactions, until recently the most commonly researched stress response was distress, or the experience of negative mood (Le Fevre, Matheny, & Kolt, 2003). However, recent developments such as the positive psychology movement have highlighted the importance of positive responses to stress, also known as eustress (Nelson & Cooper, 2005). Eustress and distress are the direct responses to a stress interaction, and this study has followed McGowan, Gardner and Fletcher (2006), operationalising these concepts as high intensity positive and negative affect respectively.

Hardiness and the Transactional Model

The original theoretical model proposed that hardiness operated through the processes of appraisal and coping, resulting in improved outcomes (Kobasa, 1979). Kobasa found that hardiness was related to lower rates of illness and she attributed this to more adaptive appraisals and effective coping. She hypothesised that hardy people cognitively transform events to make them seem less stressful and engage in more adaptive and effective coping responses, reducing the negative impacts of stressful events. Thus, hardiness was linked to health through appraisal and coping. There has been empirical support for both of these proposed processes.

Rhodewalt and Zone (1989) studied the relationship between women's reported life events, how these were appraised and levels of depression and physical illness. They found that although there was

no relation between hardiness and the likelihood of reporting a particular life event, nonhardy women reported almost 40% of their life experiences as negative as compared to 27% for hardy women. Thus, hardiness was related to depression and physical illness through participants' appraisals of negative life events.

Hardiness has also been linked to health through coping. Williams et al. (1992) examined the relationship between hardiness, coping and illness for a sample of undergraduate students. They found that problem-focused coping, support seeking and avoidant coping all mediated the hardiness-illness relationship, suggesting that differential use of coping is one way that highly hardy individuals appear resistant to the negative effects of stress.

Having briefly outlined the elements of the transactional model of stress, the sections below describe the appraisal, coping and affective components in more detail.

Appraisal

Recognising that the way people appraise external events can help to explain individual differences in behaviour, Lazarus and Folkman (1984) were the first to formally outline the role of cognitive appraisal in the stress process. Cognitive appraisal is the process through which a person evaluates the relevance of an event in their environment, and decides whether it is likely to have a positive or negative effect for them (Folkman et al., 1986a). It is an evaluative process rather than mere information processing, which describes how people differ in the way they experience environmental events.

Appraisal Components

Lazarus and Folkman (1984) theorised that cognitive appraisal was composed of two evaluative components, labelled primary and secondary appraisal. Primary appraisal assesses what is at stake in a particular encounter, taking into account the nature of the event and the individual's values and beliefs (Caverley, 2005). Lazarus and Folkman (1984) stated that encounter consequences could be deemed irrelevant (with nothing to be gained or lost in the interaction), positive (with outcomes likely to preserve or enhance well-being), or stressful. Positive encounters are rare, with few situations being totally positive, and irrelevant situations proceed no further in the process. Stress appraisals are further divided into harm, threat or challenge. Harm appraisals occur when damage has already been accrued, threat appraisals occur when there is the possibility of harm or loss in the future, and challenge appraisals occur when there is the possibility of gain or growth in the future (Lazarus & Folkman, 1984). When a threat or challenge appraisal is made, people are prompted to do something to manage their response to the situation

Secondary appraisal is where a person evaluates what can be done to prevent harm, or to improve their probability of benefits (Folkman, Lazarus, Gruen, & DeLongis, 1986b). It essentially asks the question "what can I do about the current situation?" People evaluate their possible options, including coping responses and available resources. While secondary appraisal assesses possible coping options, coping is where specific strategies such as changing the situation or accepting it are enacted. While these distinctions are widely recognised and

written about in stress research, in practice there has been a blurring between the two appraisal concepts and the coping stage that follows.

Blurring of the Concepts

There is considerable ambiguity in the literature surrounding the appraisal concepts. The labelling of the two assessments as primary and secondary was “unfortunate” according to Lazarus and Folkman (1984) because it implies that one occurs before the other, or that one is more important. Further to this, Zohar and Dayan (1999) argue that primary and secondary appraisals are inseparable because demands cannot be measured independently of coping resources. What this means is that a person will consider both what they can gain and lose from a situation, as well as what they are able to do to manage the situation, before they decide whether a situation exceeds their resources.

As primary and secondary appraisals are likely to be united in real-life situations, it is proposed here that appraisals of threat and challenge are made after possible coping options have been considered. The rationale is drawn from Bandura’s (1977) self-efficacy concept, which distinguishes between outcome expectancies and efficacy expectancies. When a person considers whether a given behaviour will lead to an expected outcome (outcome expectancy), they also need to evaluate whether she or he can successfully execute the required behaviour to produce the outcome (efficacy expectation). Only after considering what they can realistically do about a situation can a person decide whether there are potential benefits or losses for

them in a given situation. This study operationalises the result of primary and secondary appraisal as threat and challenge appraisals.

The process of appraisal is thus where a person considers the importance of the situation for them. Having decided it is not irrelevant or only positive, they think about all the potential consequences, both positive and negative. They also consider what they can do to manage the situation, maximising the positive outcomes and minimising the negative. An appraisal of challenge results when the person considers they are likely to gain something from the current situation. Threat appraisals are likely when they believe they are liable to lose something or be harmed in some way.

Challenge Appraisal and Hardiness Challenge

A challenge appraisal is different from the challenge component of hardiness. Challenge as a component of hardiness concerns the way people view change, either as normal and an opportunity for growth, or as a disruption and a threat. It is thus a trait variable, which is defined as “a disposition to think, feel and behave in a characteristic way over a range of situations” (Pervin, 2000, p. 100). In comparison, a challenge appraisal is expected to vary across situations. It results from a consideration of the characteristics of a situation and possible actions to manage the situation. A challenge appraisal occurs when a person believes there is the possibility for gain or growth in the future. Thus, the challenge component of hardiness is a trait variable which resides within a person, and a challenge appraisal is a situational evaluation which changes according to the characteristics of the situation. Florian and colleagues’ (1995) research into the ability of

hardiness to explain mental health in the Israeli military measured both the hardiness component of challenge and challenge appraisals. They found no significant correlation between the two variables, providing evidence for the independence of trait challenge (as a component of hardiness) from challenge appraisal.

Coping

The next component in the model is coping, which is defined as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141). Unpacking this definition, coping is a process which unfolds across time, meaning that strategies used in the first stages of an appraised demand are likely to differ from those used later. Coping also occurs once a person has weighed the demands of the situation against their resources; hence it is inextricably linked to processes of appraisal. The use of the term ‘effort’ is very important because this separates coping from adaptation (Aldwin, 2007). Someone starting a new job is constantly required to expend effort to cope with their new environment. On the first day they are required to find and remember where their desk is in relation to the toilets, printer, lunchroom etc, as well as how to navigate their computer, remembering passwords etc, and the names of the people in their team. Over time these things are found and remembered without effort, thus the person has adapted to their environment, and it is only when something changes that effortful coping is required. Coping therefore is an effortful process that is linked to appraisal.

Dimensionality

A recent review of coping classifications identified 400 different ways of coping that have been used in research (Skinner et al., 2003). This makes it very difficult to compare findings across studies, with strategies being defined slightly differently and different scales and items being used to measure the same concept (e.g. Carver & Scheier, 1994; Moskowitz, Folkman, Collette, & Vittinghoff, 1996; Stone, Kennedy-Moore, & Neale, 1995). However, findings are often summarised at a more abstract level of categorisation.

One of the early coping distinctions was proposed by Lazarus and Folkman (1984), separating strategies into problem-focused and emotion-focused coping. While acknowledging that this classification played a critical and defining role in the coping field, Skinner et al. (2003) argue that the categories of problem- and emotion-focused coping suffer from problems with conceptual clarity, mutual exclusivity, and exhaustiveness. Strategies of social support seeking seem to fall outside both categories according to Cartwright and Cooper (1996), because they focus on other people rather than the problem itself or the emotions associated with the problem. Thus, in order to address the problems highlighted by Skinner et al. (2003), this study includes two further coping categories: support seeking and cognitive restructuring. This aligns with the current understanding of coping and enables a finer grained distinction than the dual problem- and emotion-focused distinction that has dominated much of the research (Folkman & Moskowitz, 2004).

This research investigates four coping categories; problem-focused coping, support seeking, cognitive restructuring and emotion-focused coping. These four coping factors have been found in past research, using both exploratory and confirmatory factor analyses (Carver, 1989; Zautra et al., 1996). This distinction provides greater clarity than those studies which have used a broad bisection of coping and should thus enable stronger relationships to emerge.

Problem-focused coping is action-oriented, describing efforts that are made to address the problem or source of stress. The focus of these coping efforts is on the problem. Problem-focused efforts have been shown to dominate in work settings, and in controllable situations where people feel that something can be done (Folkman et al., 1986a).

Support from others has been widely recognised as an important resource in lessening the negative effects of stress (House, Umberson, & Landis, 1988; Thoits, 1995). This grouping of strategies is multi-dimensional, incorporating emotional support, instrumental aid, the provision of information, and feedback or comparisons (House, 1981). Researchers have also separated out the sources of support, finding that job-related strains (e.g. job dissatisfaction and boredom) are best relieved by job-related sources of support such as from a co-worker or supervisor (Gentry & Kobasa, 1984).

Cognitive restructuring is a category that focuses on the meaning of the situation for that individual, centring on accepting the current realities and thinking about the situation from other perspectives. These strategies have not typically been measured, although when

they have, they are perceived to be aimed at managing the meaning of the situation (Folkman & Moskowitz, 2004).

Maddi and Hightower (1999) did measure cognitive restructuring strategies such as acceptance and humour, and placed them into their regressive coping category, which described cognitive and behavioural disengagement from the situation. This contrasts with Benard's (1993) suggestion that resilient children (who are likely to have high levels of the resource hardiness) use humour strategically to help manage situations at hand. Studying the use of humour as a coping strategy, Abel (2002) found that humour increased the likelihood of seeking alternative perspectives to problems. Maddi and Hightower's placement also contradicts Major, Richards, Cooper, Cozarelli and Zubek's (1998) finding that acceptance in situations which cannot be changed, such as post-abortion, predicted better adjustment (lower distress and higher well-being). These studies advocate that cognitive restructuring is a separate category to emotion-focused coping and one that is likely to have more positive outcomes.

Emotion-focused coping is concerned with efforts to manage the emotions caused by the problem, such as venting emotions or denial. The focus of these coping efforts is on managing the emotions triggered in response to the problem. Folkman (1984) argued that the effectiveness of problem-focused coping depends on the success of emotion-focused coping to manage negative emotions that interfere with problem solving. However, this form of coping is typically considered less adaptive, particularly in the longer term (Rush et al., 1995; Soderstrom, Dolbier, Leiferman, & Steinhardt, 2000).

Affect

The final component in the transactional model is affect, which describes the experience of feelings and emotions (VandenBos, 2006). The structure of affect has been under investigation since the 1950's (Mäkikangas, Feldt, & Kinnunen, 2007). Most theoretical models comprise two dominant dimensions, labelled positive and negative affect (Watson & Tellegen, 1985). While the terms suggest that the concepts are polar opposites, studies have shown that positive and negative emotions co-occur, as well as displaying some properties of independence (Folkman, 2008; Judge & Larsen, 2001).

Folkman and Moskowitz (2000) argue that coping research has fallen short of its potential because it has failed to take account of the role of positive affect in the stress process. The significance of negative affect and distress has been extensively studied regarding the way it focuses attention on the problem at hand, as well as promoting evolutionary adaptive behaviours, such as fight or flight responses. However, positive emotions or eustress occurs in chronically stressful situations with surprising frequency. For instance, even during the care giving stage for partners who were infected and dying from AIDS, comparable positive states of mind were reported to that of a community sample who were not experiencing unusual stress (Folkman, 1997). The way that positive affect works is only beginning to be understood, though Fredrickson's (1998) broaden-and-build model has provided a good foundation. It suggests that positive emotions broaden an individual's focus of attention and increase the behaviours that individuals engage in, thus building greater cognitive, behavioural and social resources to use during stressful situations.

Affect is presented in this study as the intermediate step between appraisal and coping processes and longer term outcomes of job satisfaction and performance.

This chapter has outlined the transactional model of stress and described the components of appraisal, coping and affect that comprise this process. The next chapter presents the traditional, sequential conceptualisation of the transactional model which links hardiness together with these components.

Chapter 5: Sequential Model

Barrick and Mount (2005) recommended that personality researchers must move beyond studies that merely link personality variables to outcomes. To advance the understanding of hardiness, it is necessary to investigate relationships with variables such as appraisal and coping that explain how hardiness relates to both short and long term outcomes. This chapter outlines the empirically supported relationships flowing from hardiness, through appraisal, coping, affect and outcomes. The resulting sequential model is closely aligned to the traditional conceptualisation of the transactional model of stress (Lazarus & Folkman, 1984), and follows the work of King and Gardner (2006).

Hardiness and Appraisal

There are several pieces of research that link hardiness to threat and challenge appraisals. Pagana's (1990) study of medical students found that high hardy students evaluated their experiences as challenging and were less likely to consider them threatening when compared to low hardy students. However, using a cross sectional design means it is unclear whether it was hardiness that affected the appraisals, or whether the outcomes of the stressful events led subjects to appear less hardy (Funk, 1992). A stronger conclusion can be drawn from Wiebe's (1991) laboratory experiment, in which high hardy subjects (measured before the manipulation) subsequently reported the same objective stressor as less threatening than low hardy subjects. In terms of challenge appraisals, Westman's (1990) longitudinal research linked hardiness to performance in the military

and concluded that the difference was partially explained by the high hardy personnel's' appraisals of their greater ability to cope. This means that high hardy individuals are more likely to appraise events as challenging because they expect to be able to manage the situation, and gain benefits and rewards from the experience (see Figure 2).

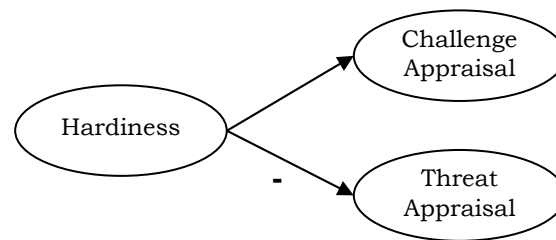


Figure 2. Proposed relationships between hardiness and appraisal.

Appraisal and Coping

The way a person perceives a situation is likely to affect the way that they manage the demands. For instance, considering a situation as a threat means that the individual's perceived resources are less than the demands of the situation and the person expects to be harmed in some way (Lazarus & Folkman, 1984). Alternatively, considering a situation as a challenge means the person believes gains and benefits can be accrued from the situation. These perspectives have been shown to influence the coping behaviours undertaken and are modelled in Figure 3.

Challenge Appraisal and Problem-focused Coping

A situation that is appraised as a challenge is one in which the person believes there is the possibility of positive rewards. This makes

them more interested and likely to engage with the problem and actively work towards the benefits. Supporting this, a longitudinal study conducted by Ptacek, Smith, and Zanas (1992) found that for both men and women, situations appraised as more challenging were associated with higher use of problem-focused coping.

Challenge Appraisal and Support Seeking

There have also been similar positive findings between challenge appraisal and support seeking (Mikulincer & Florian, 1995). The rationale is that appraising a situation as a challenge is the result of an individual's perceived resources being greater than the demands of the situation (Lazarus & Folkman, 1984). Utilising the skills, knowledge and abilities of others is likely to be part of the resources a person considered when making their initial appraisal. Thus, a challenge appraisal is likely to have a positive relationship with the support seeking coping strategy.

Challenge Appraisal and Cognitive Restructuring

By making a challenge appraisal, a person has decided that a situation is relevant to them and has the possibility for benefit or gain. The person is also aware, however, that the positive outcomes are not guaranteed and that they will be required to navigate and manage the situation appropriately to receive any rewards (Lazarus & Folkman, 1984). Thus, by making a challenge appraisal, the person is likely to accept the positive possibilities in the situation as well as the efforts they will need to expend, showing greater acceptance of the current realities.

Kuiper, McKenzie and Belanger (1995) studied the effect of humour as a coping strategy, and its relationships with appraisals and affect during two drawing tasks. Their findings were consistent with an enhancement effect, suggesting that humour was associated with more challenge appraisals because it helps individuals to interpret, deal with, and assimilate pleasant life experiences. Hence, a positive relationship is expected between a challenge appraisal and cognitive restructuring.

Threat Appraisal and Emotion-focused Coping

Threat appraisals occur when a person perceives that the situational demands exceed their resources to cope, thus expecting harm to occur (Lazarus & Folkman, 1984). In this situation, individual are likely to try to distance themselves from the emotions associated with the stressful situation and the anticipated negative consequences. Threat appraisals have been found to be related to emotion and avoidance forms of coping (Mikulincer & Florian, 1995). This type of coping is also thought to involve elements of blaming oneself for the situation, resulting in a downward spiral comprised of disengagement and self-criticism leading to further attempts to remove oneself from the situation (Peterson & Seligman, 1984).

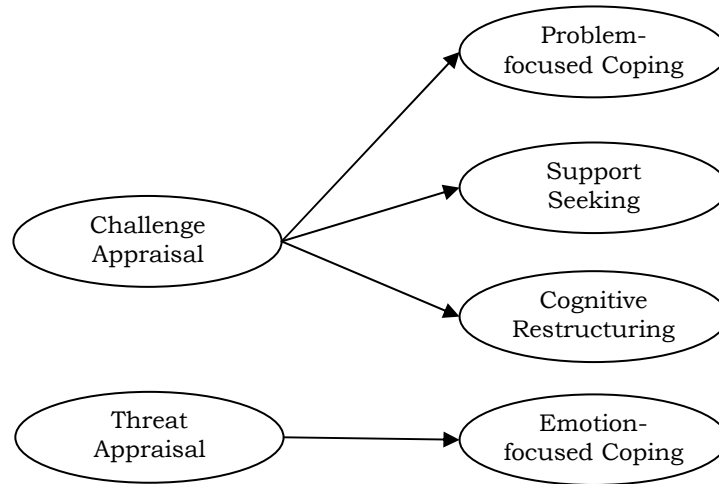


Figure 3. Proposed relationships between appraisal and coping.

Coping and Affect

The way a person copes with perceived demands is thought to have a relationship with the emotions they experience. These relationships are outlined below and modelled in Figure 4.

Problem-focused Coping and Positive Affect

The relationship between problem-focused coping and positive affect is suggested to arise through gains in feelings of effectiveness and a sense of satisfaction from engaging in and completing tasks (Folkman & Moskowitz, 2000). For instance, even in seemingly uncontrollable situations the simple act of writing a list of ‘things to do’ may produce feelings of mastery and control (Folkman, 1997). In a study of caregivers of men with AIDS, Moskowitz et al. (1996) found active problem solving to be associated with higher positive affect ($\beta=.16$, $p<.01$). Dunkley, Zuroff and Blankstein (2003) also found a moderately strong correlation ($r=.44$, $p<.001$) between problem-focused coping and positive affect.

Support Seeking and Positive Affect

The hypothesised relationship between support seeking and positive affect is based on the idea that seeking the advice of others and getting their sympathy and support can improve a person's mood. Supporting this, Dunkley, Zuroff and Blankstein's (2003) study looked at the relationships between perfectionism, coping and affect, and found a persistent positive relationship between social coping and positive affect. Murrell, Norris and Chipley (1992) also found that functional support (or the perceived adequacy of available support) had an enduring direct positive relationship to positive affect.

Cognitive Restructuring and Positive Affect

By engaging in cognitive restructuring, a person takes a step outside the current situation and attempts to put the situation into the broader context, looking for alternative views and perspectives. Acceptance of the situation 'as it is' enables a person to focus on the positive rather than dwelling on the negative, and Stone et al. (1995) found acceptance relating to higher levels of positive affect. Similarly, engaging in humour not only allows the person to benefit from seeing their situation from different perspectives, but also engaging in the strategy itself tends to be associated with increases in positive affect (Kuiper et al., 1995).

Emotion-focused Coping and Negative Affect

Emotion-focused coping is primarily concerned with managing the negative emotions associated with the stressful situation. With efforts tied up in managing emotions, little or no progress is made on solving the problem at hand. A lack of progress is liable to increasing negative feelings about the problem at hand, such as guilt and anxiety. Carver

et al. (Carver et al., 1993) found such a relationship, with behavioural disengagement (thoughts of giving up) being consistently related to distress measured concurrently, as well as predicting distress at a 6 month follow-up. Similarly, Moskowitz et al. (1996) found self-blame and behavioural escape-avoidance to be consistently associated with increases in negative mood.

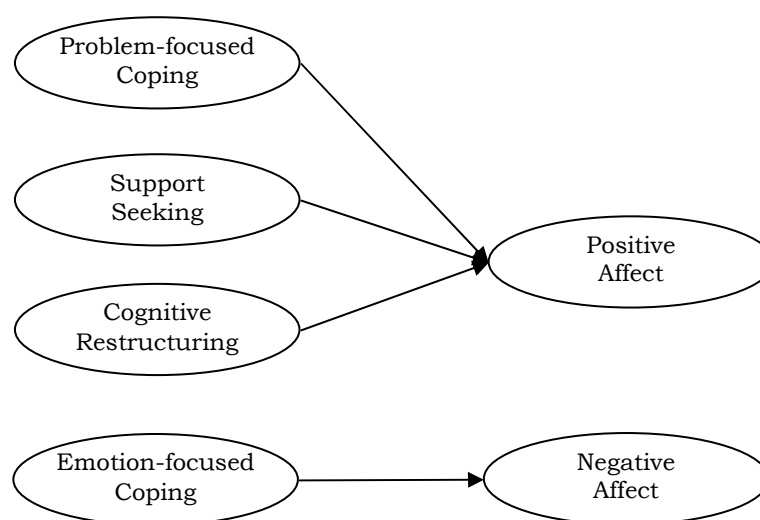


Figure 4. Proposed relationships between coping and affect.

Affect and Outcomes

The feelings and emotions experienced during stressful encounters appear to have relationships with longer term outcomes such as job satisfaction and performance (see Figure 5). Weiss and Cropanzano's (1996) affective events theory (AET) proposed that work events arouse affective reactions, which directly influence job satisfaction. This is because job satisfaction is comprised of a belief component which evaluates features of the job, and an affective component which reflects the recall of affective episodes on the job. Weiss and

Cropanzano suggest that when a person is asked for a satisfaction judgement, they at least partially construct that judgement from recalled events, which is likely to be biased by recent events. Thus, state affect may influence ratings of job satisfaction. Niklas and Dormann (2005) found support for this, with state positive affect predicting generalised job satisfaction, and state negative affect negatively predicting generalised job satisfaction. It is therefore proposed that people who experience more positive affect associated with the stressful situation are likely to have higher levels of job satisfaction and people who experience more negative affect are likely to have lower levels of job satisfaction.

Drawing on Fredrickson's (1998) broaden-and-build theory of positive emotions, the person who is experiencing higher levels of positive affect has more time and interest to look outside their immediate focus, broadening their horizons. Being able to make better connections and utilise resources more effectively, positive affect has been linked to higher levels of creative problem solving, better negotiating performance, more helpful behaviours and more persistence on uncertain tasks (Isen, Daubman, & Nowicki, 1998), thus suggesting a link between positive affect and performance.

George and Brief (1996) also argued for a relationship between affect and performance using expectancy theory (e.g. Vroom, 1964). They contended that experiencing positive affect enhances a person's expectancy that their efforts will lead to performance, as well as the belief that performance leads to positive outcomes. Thus, positive affect increases motivation, as well as task persistence, which lead to

increased performance. Wright, Cropanzano and Meyer (2004) tested these propositions and found a state measure of negative mood was significantly negatively correlated to performance measured across the previous year. While Wright et al. did not find the expected positive affect-performance relationship, Isen, Daubman and Nowicki (1998) summarised a range of studies linking positive affect to higher levels of creative problem solving, better negotiating performance, more helpful behaviours and more persistence on uncertain tasks. Thus, there is support for positive and negative affect to be linked to performance.

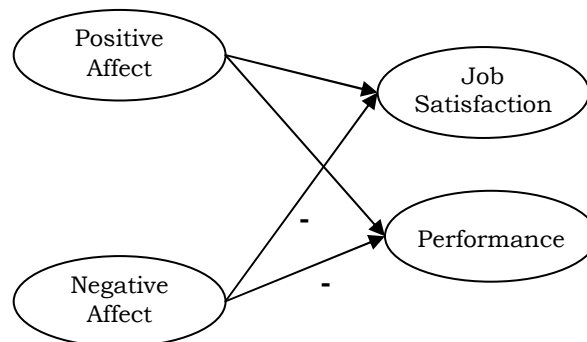


Figure 5. Proposed relationships between affect and outcomes of job satisfaction and performance.

Sequential Model

All these relationships are tied together in the sequential model (see Figure 6). This model has been adapted by the author from the work of King and Gardner (2006), who identified a two path structure through the stress process, beginning with demands and leading through appraisal and coping to affect. The linear progression from a demand being appraised, followed by coping efforts, adheres to the transactional model as originally outlined by Lazarus and Folkman (1984). This was extended, however, by explicitly outlining a ‘positive’

and 'negative' path. The positive path started with an appraisal of the situation as a challenge, which was coped with by task-focused strategies and was associated with more positive affect. The path through social support was not supported in King and Gardner's research and this was attributed to the use of a measure inappropriate for a working environment. Other research has found, however, that social support is associated with challenge appraisals and positive affect (Skinner & Brewer, 2002). The supported negative path associated threat appraisals with avoidance coping and higher levels of negative affect.

The model also identified the need for long term outcomes to be incorporated into future models. Folkman and Moskowitz (2004) agree and note that it is important to consider both short and long term outcomes because coping strategies that positively affect one outcome may negatively affect another. For instance, a study which looked at physicians who made a mistake found that those who experienced greater initial distress were also more likely to accept responsibility, problem-solve, and make constructive changes in their practice (Wu et al., 1993). The current study incorporates affect as the immediate outcome of appraisal and coping efforts, and the more distal outcomes include perceived effectiveness (performance) and satisfaction at work, as well as likelihood of leaving.

Hypothesised Sequential Model

This study has made two alterations to King and Gardner's (2006) model, to extend its outlook and make it applicable to the concept of hardiness (see Figure 6). This revised model begins with the variable

of hardiness, following the work of Florian et al. (1995). While some researchers have investigated hardiness as a moderator of, or mediator between perceived stress and outcomes (Lease, 1999; Wiebe, 1991), others have used affect and coping as the mediating variables between hardiness and outcomes (Allred & Smith, 1989; Rhodewalt & Zone, 1989; Williams et al., 1992). The placement of hardiness in this study is driven by the focus on how appraisal and coping mediate the relationship between hardiness and outcomes. Placing hardiness at the front of the model is also supported by Burch and Anderson's (2008) integrative model of personality and work performance. Their model begins with genetic factors that they propose underlie motivation and personality, moving through cognitive ability and situation perceptions to result in work behaviours (performance). Following Burch and Anderson's lead, this model places the trait variable of hardiness at the beginning, where it is proposed to influence the appraisals people make, and their likely coping responses.

The long term outcomes that were recognized as important but lacking in King and Gardner's (2006) model are provided in this study in the form of job satisfaction, perceived performance and intention to turnover. The structure of the relationships between hardiness and these variables was outlined in Chapter 3, with hardiness linking to job satisfaction and performance, and job satisfaction mediating intentions to turnover. This model depicts the effect of hardiness operating through appraisal and coping, leading to state affect, which over time influences the longer term outcomes of hardiness.

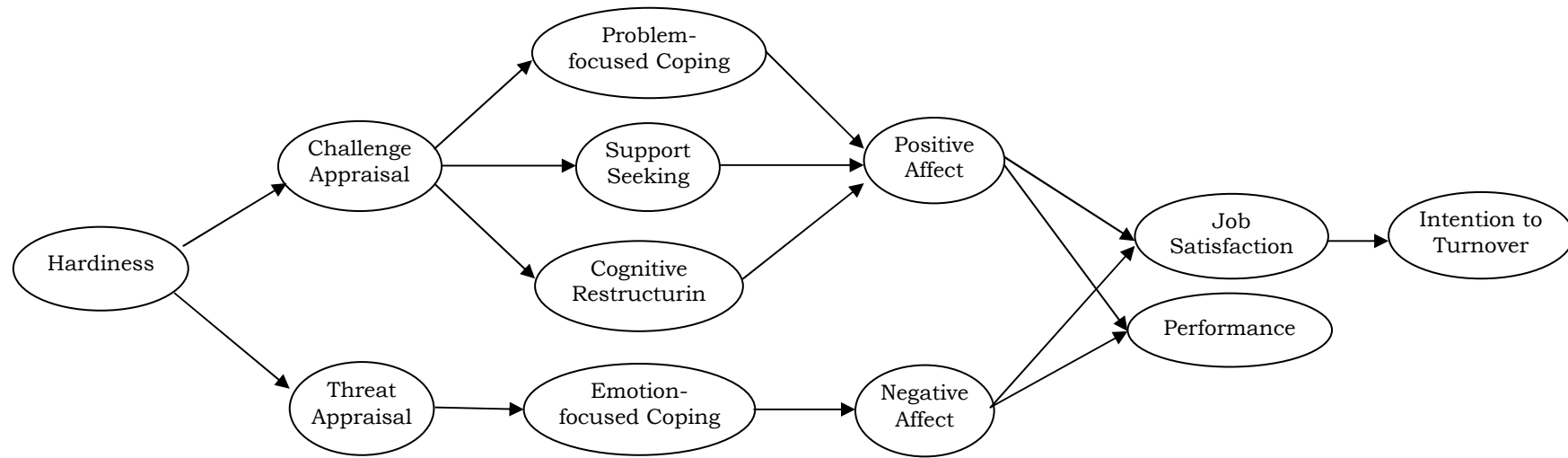


Figure 6. Author's hypothesised sequential model, adapted from King and Gardner (2006).

This chapter has presented the theoretical and empirical evidence to support each path in the sequential conceptualization of the transactional model. This model presented the process of experiencing a stressful situation as one that is influenced by a persons' level of hardiness and follows a positive or negative path. The paths flow sequentially through the components of appraisal, coping and affect, leading to job satisfaction and performance. However, this is not the only theoretically possible model, and the next chapter outlines an alternative structure of the transactional model.

Chapter 6: Alternative Model

When undertaking model testing, the best available support for a given model comes from testing that model against another, utilising a model comparison approach (Jöreskog, 1993). As outlined by Roesch (1999), models are not confirmed by Structural Equation Modelling (SEM), they are just deemed to be plausible. Equally well-fitting models are also likely to exist. Thus, the strongest support for a given model comes when it is tested and compared against other possible models.

The model presented here is a variation on the transactional model of stress (Lazarus & Folkman, 1984). Proposed by Florian et al. (1995), it presents appraisal and coping simultaneously, rather than having coping following on from appraisal. This challenges the linear path that much of the research using a sequential transactional model has assumed, though not directly tested. The alternative model will be presented below, then following the recommendations of Hoyle and Panter (1995), each of the pathways that differ from the sequential model will be examined.

Simultaneous Model

An alternative to King and Gardner's (2006) sequential model was proposed by Florian et al. (1995). In that study, appraisal and coping were analysed concurrently, allowing hardiness to be mediated separately by appraisal or coping (see Figure 7). The important difference is that while the sequential model assumes that appraisal precedes coping efforts, a simultaneous or concurrent model allows for

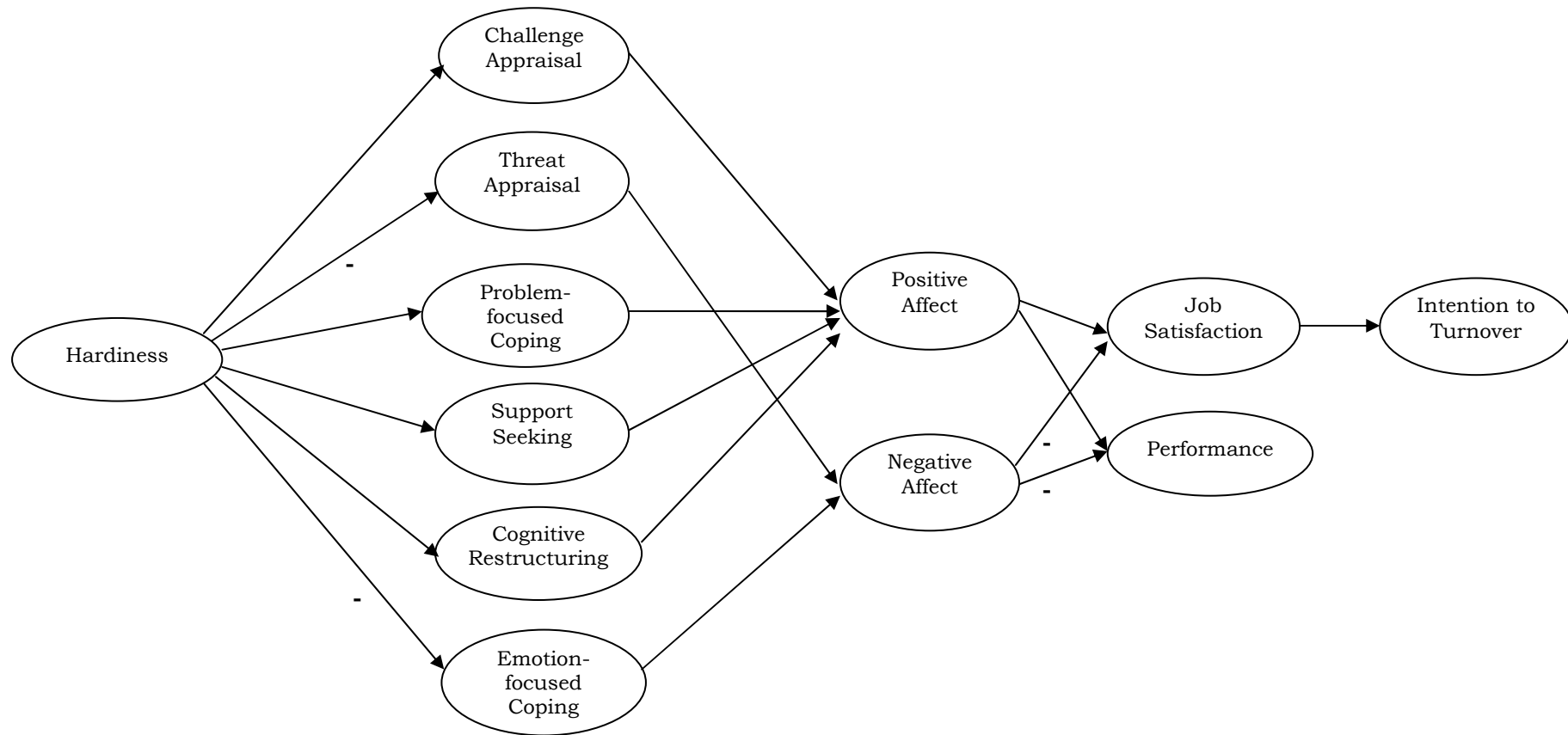


Figure 7. Author's hypothesised simultaneous model, adapted from Florian et al. (1995).

the possibility that the two processes may happen at the same time or be recursive. Thus, the coping variables are placed as direct mediators between hardiness and affect, rather than occurring after appraisal.

Support for this simultaneous model comes from the original conceptualisation of the transactional model. As Lazarus and Folkman (1984) noted, a person's reliance on a particular coping strategy may influence their appraisal of future situations. For instance, someone who tends to manage demands by avoidance could be more likely to appraise a future demand as threatening. It was also acknowledged by Lazarus and Folkman that people are likely to re-appraise the situation after engaging in coping efforts. Even though a person may have appraised a situation as an opportunity for benefit (a challenge appraisal), if they engage in coping efforts which do not lead to the desired results and they actually lose something or are harmed in some way, they are likely to reappraise the situation as a threat. Cognitive psychologists call this a schema, where people interpret new situations from the perspective of their past experiences with similar situations (Vaughan & Hogg, 2002). Thus, appraisal is liable to be influenced by past coping experiences, as well as coping styles or preferences.

A similar issue occurs when examining how appraisal and coping are typically measured. Most research designs, including longitudinal studies, measure appraisal and coping at a single point in time. Studies generally ask participants to think about a recent stressful situation, and this means that their retrospective recall of their initial

appraisal is likely to be biased by coping efforts they have engaged in since the original appraisal. It is therefore not possible, without using experimental designs, to determine which comes first. Thus, there appears to be value in Florian et al.'s (1995) call that the closely empirically and theoretically related constructs of appraisal and coping should be entered into regressions or structural models together. These things provide strong justification to test the fit and utility of a simultaneous model.

Hardiness and Coping

There are two new sets of pathways that arise from altering the place of coping in the model. The first are the direct links between hardiness and coping which are modelled in Figure 8. These relationships are as plausible as those between hardiness and appraisal, and have been found in a variety of studies.

Problem-focused Coping

The relationship between hardiness and problem-focused coping is one of the most consistently found and clearly supported relationships (Carver, 1989; Maddi & Hightower, 1999; Rush et al., 1995). Hardy people are more likely than their low hardy counterparts to engage with the stressful situation, working out what needs to be done (planning) and then getting on and doing it (active coping).

Support Seeking

Hardiness has been proposed to influence the amount people use support seeking as a coping strategy. According to Maddi et al. (2006) hardy people are better able to recruit support from friends, family and colleagues, building supportive and encouraging relationships to help

manage stressful situations. In support of this, small to moderate positive correlations have generally been found between hardiness and seeking social support (Boyle, Grap, Younger, & Thomby, 1991; Hull et al., 1987; Maddi et al., 2006; Westman, 1990).

It has also been argued that hardy people rely on their own resources when facing challenging circumstances, perhaps considering the use of social support as a failure or a weakness (Kobasa, 1982). However, the ability of this study's findings to generalise to a normal working population is questionable due to its particular sample of male lawyers, which is likely to have specific gender and cultural norms around the seeking of support. This study follows the majority of hardiness work which finds a positive relationship between hardiness and the coping variable of seeking social support.

Cognitive Restructuring

Maddi (2005) notes that one of the characteristics of hardiness is the ability to recognise and face the reality of the situation. In contrast, low levels of hardiness are often associated with denial and disengaging with the problem at hand. Hardy people are also described in terms of being able to look at a situation from different perspectives, placing it into the broader context in which it does not seem so terrible (Maddi, 1999). Thus, hardy people are suggested to accept the situation rather than denying it, and are able to see it from different perspectives, which is what people do when engaging in the coping strategy of humour (Kuiper et al., 1995). Taking these things together it is proposed that hardiness is likely to have a positive relationship with cognitive restructuring.

Emotion-focused Coping

People high in hardiness believe that they can influence the outcomes of a situation through expending effort, conversely people low in hardiness are more likely to feel powerless in stressful situations (Maddi & Hightower, 1999). Unable to see ways of improving the situation and likely to be experiencing negative emotions, low hardy people are likely to disengage and give up efforts to cope. Hardy people are also said to be focused on the future, looking for new challenges and opportunities for growth. This is in contrast to those low in hardiness who are more focused on the past and trying to preserve what was, rather than what could be. Unable to keep things from changing, these people are more likely to engage in negative behaviours such as self-blame or unproductive ones such as wishful thinking. Support for this comes from two unpublished studies discussed in Blaney and Ganellen (1990) which found hardiness to be negatively related to self-blame coping. The negative relationship between hardiness and emotion-focused coping has been repeatedly found in a number of studies (Carver, 1989; Rush et al., 1995; Soderstrom et al., 2000).

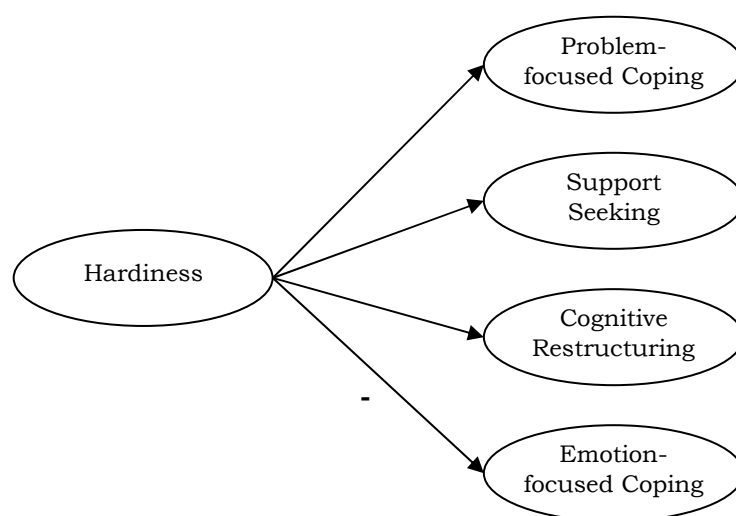


Figure 8. Proposed relationships between hardiness and coping.

Appraisal and Affect

The second set of new paths in the simultaneous model occurs between appraisal and affect (see Figure 9), with studies again showing support for these links. According to Folkman and Lazarus (1985), appraising a situation as threatening to one's well-being is likely to give rise to negative emotions such as apprehension and anxiety. In contrast, considering that one has sufficient resources to cope and expecting benefits from the situation, this is likely to give rise to positive emotions such as eagerness or excitement. Kuiper et al.'s (1995) research supports this, with moderate to strong positive correlations between challenge appraisals and positive affect measured at two time points (Time 1, $r = .33$, $p < .001$; Time 2, $r = .53$, $p < .001$), and between negative appraisals and negative affect (Time 1, $r = .55$, $p < .001$; Time 2, $r = .62$, $p < .001$). These results were independent of each other, meaning that challenge appraisals were not significantly correlated with negative affect, nor threat appraisals with positive affect. Together, these studies suggest a strong link between appraisals and affect.

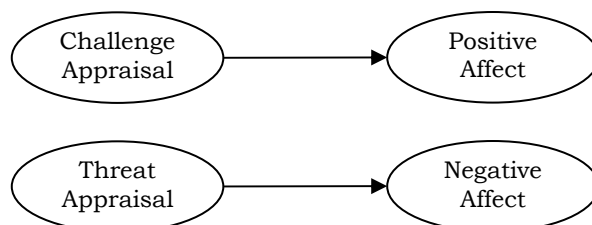


Figure 9. Proposed relationships between appraisal and affect.

Comparison

As with any model, there are benefits and drawbacks. One of the major advantages of the simultaneous model is that it is easier to see the separate impacts of appraisal and coping variables on the relationships of hardiness to outcomes. For example, it should be clear the degree to which problem-focused coping influences the relationship between hardiness and the outcome of positive affect. However, the biggest problem with the simultaneous model is that there is no allowance for relationships between appraisal and coping variables, such as that which has been found between threat appraisal and emotion-focused coping (Folkman, 1984; Mikulincer & Florian, 1995). The sequential model does take better account of the relationships between the two processes of appraisal and coping, though it is not able to display their separate effects.

The majority of the literature utilising the transactional model of stress has assumed a sequential process through appraisal and coping. However, because there are few study designs in which appraisal and coping can be causally ordered, Florian et al.'s (1995) simultaneous model appears to be a better theoretical representation of the actual stress and coping processes. Thus, it is expected that the simultaneous model will fit the data better than the traditional sequential model.

Hypothesis 4: The simultaneous model will provide a better fit to the data than the sequential model

This chapter has presented evidence to substantiate the alternative (simultaneous) modelling of appraisal and coping for the process of encountering stressful situations. The next chapter presents the methods used in this study to test the relationships and compare the models.

Summary of Hypotheses

Hypothesis 1: Hardiness will have a positive relationship with work performance

Hypothesis 2: Hardiness will have a positive relationship with job satisfaction

Hypothesis 3a: Hardiness will have a negative relationship with intention to turnover

Hypothesis 3b: The relationship between hardiness and intention to turnover will be mediated by job satisfaction

Hypothesis 4: The simultaneous model will provide a better fit to the data than the sequential model

Chapter 7: Method

Procedure

Permission to conduct the research was sought and granted by the Massey University Human Ethics Committee: Northern (approval number MUHECN 08/020). Following this, ten New Zealand based organisations were approached to participate in the research and access was granted to eight. All organisations had over 50 employees, meaning they were classified as large organisations in the New Zealand context (Ministry of Economic Development, 2008). The organisations crossed a range of sectors and industries, including public sector at the local and national level, professional services, not-for profit, retail and manufacturing. While this variety means the results may be influenced by different workplace cultures, it does allow a greater level of generalisation and thus should be more applicable to the wider New Zealand workforce.

A cross-sectional survey was used to collect the data. Participants were sent, via internal office email, an invitation to participate in the research. The email comprised the Participant Information Sheet and a link to the online questionnaire (See Appendix A for a copy of the Participant Information Sheet). The questionnaire was hosted at www.surveymonkey.com, a secure hosting site. To preserve anonymity, participants' IP addresses were not recorded. One week after the initial invitation, a reminder email was sent. Two weeks after the initial contact, a final email was sent to everyone, thanking those who had already participated. This email indicated that the

questionnaire would soon be closed, and provided a final opportunity for others to participate.

Participants

The final sample consisted of 297 participants. Access was initially provided to 1230 employees from the eight participating organisations, and all were emailed the invitation to participate. Of the 1230 invited, 407 (33.1%) started the survey. This participation rate is similar to the mean response rate for web-based surveys as outlined in Cook, Heath and Thompson's (2000) meta-analysis. Of the 407 who started the questionnaire, 297 (73.0%) completed it with less than 15% of items being missed. This gave a final, useable sample of 297, which was 24.1% of the originally targeted sample.

A number of things were done in an attempt to increase the response rate, such as making sure the research invitation was framed as a salient topic for participants, sending reminders and providing feedback to individuals and organisations (Sax, Gilmartin, & Bryant, 2003). The response rate may still be considered lower than ideal, though as Sax and colleagues point out, survey response rates are "declining dramatically over time" (2003, p. 423).

Unfortunately, it is not possible to ascertain whether there were any demographic differences between those who completed the questionnaire and those who did not.

Questionnaire

The self-report questionnaire was composed of four parts initially covering cognitive hardiness, with the next section containing

appraisal, coping and affect items. The outcomes of job satisfaction, perceived performance and intention to turnover were next, followed by the demographics (See Appendix B for a copy of the full questionnaire). At the beginning of the second section participants were asked to think about and describe the most stressful situation they had experienced at work in the last few weeks. They were then asked to answer the items about appraisal, coping and affect with that situation in mind.

Measures

Hardiness

Cognitive hardiness was measured using Bartone's (2007a) 15 item revised Dispositional Resilience Scale (DRS15-R). The earlier DRS15 overcame many of the criticisms of the first and second generation hardiness scales (Funk, 1992; Hull et al., 1987), and has consistently displayed adequate psychometric properties (Bartone, 1995, 1999, 2007b; Britt et al., 2001; Sinclair & Tetrick, 2000). The revised third generation scale (DRS15-R) contained several refinements to reduce cultural bias (Bartone et al., 2006).

The hardiness scales were constructed using confirmatory factor analysis (see results section). This revealed two factors; a combined commitment/control factor with eight items and a reliability coefficient of $\alpha=.78$, and a challenge factor with four items and a reliability coefficient of $\alpha=.75$. Sample items include "most of my life gets spent doing things that are meaningful" (commitment/control) and "changes in routine are interesting to me" (challenge). Responses ranged from 0 (not at all true) to 3 (completely true). Some items (e.g. "there is

nothing I can do to influence my own future”) were reverse coded. Once all items were positively coded, higher responses indicated higher levels of cognitive hardiness. Scores were calculated by averaging the items for each participant.

Threat and Challenge Appraisals

The Revised Stress Appraisal Measure (Roesch & Rowley, 2005) is a shortened version of the Stress Appraisal Measure (SAM) by Peacock and Wong (1990). This state appraisal measure was chosen because the items were distinct from the measure of hardiness. The other commonly used measure of appraisal is Skinner and Brewer’s (2002) Cognitive Appraisal Scale (CAS), and this has considerable item overlap with the measure of hardiness (DRS15-R).

The measure consisted of 12 items assessing threat and challenge appraisals. Responses ranged from 0 (not at all) to 3 (very much). Sample items included “I felt I had the skills necessary to overcome the stressful event” (challenge appraisal) and “I felt this stressful event would have a negative impact on me” (threat appraisal). The confirmatory factor analysis results indicated the threat appraisal concept was best measured by four of the original seven items which resulted in a reliability coefficient of $\alpha=.80$. Challenge appraisal had five items and a reliability coefficient of $\alpha=.85$. Scores for each factor were calculated by averaging the items, and higher scores indicated a higher level of threat or challenge appraisal.

Coping

The measure used to assess coping strategies was the BriefCOPE (Carver, 1997), a shortened version of the FullCOPE (Carver, Scheier,

& Weinraub, 1989). The Brief COPE consisted of 28 items, measuring 14 distinct coping strategies (2 items per scale). This questionnaire has shown adequate reliability and validity (Carver, 1997), and has been advocated as a good tool in a critical review of coping instruments (Schwarzer & Schwarzer, 1996). Responses ranged from 0 (not at all) to 3 (very much).

A measurement model was constructed on the four factor structures theoretically derived by Carver et al. (1989) and empirically confirmed by Zautra, Sheets and Sandler (1996). Problem focused coping was defined as the use of active coping and planning (e.g. “I took action to try to make the situation better”) and had a scale reliability of $\alpha=.83$. Cognitive restructuring was defined as acceptance and humour (e.g. “I learned to live with it”) and had a scale reliability of $\alpha=.74$. Social support was defined as the use of emotional and instrumental support (e.g. “I tried to get advice or help from other people about what to do”) with a reliability of $\alpha=.74$, and emotion-focused coping was defined as behavioural disengagement and self-blame (e.g. “I gave up trying to deal with it”) with a scale reliability of $\alpha=.70$. Mean scores were used to construct each scale.

Positive and Negative Affect

Warr’s (1990) Affective Well-being Scale was used to measure participants’ emotional reactions to their stressful work event. Participants were asked to think of the stressful work event they had described and rate how much of the time they had felt three high intensity positive adjectives (e.g. “enthusiastic”), three low intensity positive adjectives (e.g. “calm”), three high intensity negative adjectives

(e.g. “miserable”) and three low intensity negative adjectives (e.g. “uneasy”). Responses ranged from 0 (never) to 3 (very much) and scores were calculated as the average for each group. The reliability coefficients were $\alpha=.87$ (low intensity positive affect), $\alpha=.89$ (high intensity positive affect), $\alpha=.79$ (low intensity negative affect), $\alpha=.93$ and (high intensity negative affect). Only the high intensity factors were used in this study, to represent distress (negative affect) and eustress (positive affect).

Job Satisfaction

Job satisfaction was assessed with the short form of Brayfield and Rothe’s (1951) Job Satisfaction Scale. Reliability and validity have been demonstrated for this scale in previous studies (Brooke, Russell, & Price, 1988; Judge, Erez, Bono, & Thoresen, 2003). The short form contained five items (e.g. “Most days I am enthusiastic about my work”) and responses were anchored on a five point scale ranging from 1 (strongly disagree) to 5 (strongly agree). One item was deleted from the results of the confirmatory factor analysis. The remaining four items were averaged to produce a job satisfaction score in which higher scores indicated higher job satisfaction. The reliability coefficient was $\alpha=.83$.

Intention to Turnover

A three item scale was used to measure intention to turnover, which has been shown to have adequate reliability and validity (Colarelli, 1984). The items were “I frequently think of quitting my job”, “I am planning to search for a new job during the next 12 months” and one reverse scored item “If I have my own way, I will be

working for this company one year from now”. These were anchored on the same five point rating scale as above, 1 (strongly disagree) to 5 (strongly agree) and once the negative item was reverse coded, higher scores indicated a higher intention to leave. The three items were averaged to produce the intention to turnover score, and it had a reliability coefficient of $\alpha=.94$.

Perceived Performance

Self-rated perceived performance was assessed using Williams and Anderson’s (1991) seven item In-Role Behaviour scale. The scale contained five positive (e.g. “I perform tasks that are expected of me”) and two reverse coded items (e.g. “Each day at work seems like it will never end”). Participants responded using the five point scale with the 1 (strongly disagree) to 5 (strongly agree) anchors. The CFA indicated one negative item to be deleted. The six remaining items were averaged to give a measure of perceived performance, and the reliability coefficient for this scale was $\alpha=.82$. High scores indicated high perceived performance.

Data Analysis

All questionnaire data was downloaded from the survey hosting website (www.surveymonkey.com) and saved into the Statistical Package for the Social Sciences (SPSS), version 16.0. This statistical package was used, along with AMOS version 16.0 (Arbuckle, 2007), to analyse the data.

The analyses were completed in three stages. Schumacker and Lomax (1996) advocate a two-step modelling approach, where measurement and structural models are tested and analysed

separately. Thus, the first step used confirmatory factor analyses (CFA) to test measurement models. Bivariate hypotheses were then tested using Pearson product-moment correlations using the scales as defined by the confirmatory factor analysis. Finally, the two hypothesised structural models were tested using structural equation modelling (SEM). Bootstrapping procedures were used throughout because they provide effect size estimates and standard errors without requiring multivariate normality (Byrne, 2001; Preacher & Hayes, 2004). The models were individually assessed for their fit to the data, then compared against each other using the fit statistics described below. The model which required the least amount of modification to reach acceptable levels of fit was deemed to be the better model.

Fit Assessment

A range of goodness-of-fit indices were used to assess the model fit for the CFAs and SEMs. The chi-square statistic (χ^2) is reported though it was not used to assess model fit due to its sensitivity to sample size and trivial differences (Byrne, 2001; Schumacker & Lomax, 1996). The measurement models were assessed using two indices of fit; the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). The CFI statistics vary between zero and one, and values $>.90$ are considered representative of good model fit. RMSEA values below .05 indicate good fit, below .08 indicate reasonable fit and below .10 indicating mediocre fit (Byrne, 2001).

Because this study is comparing models, the SEM results also reported the parsimony comparative fit index (PCFI) and Akaike's information criterion (AIC), as recommended by Garson (2008).

Because the model parsimony is taken into account with the PCFI, the threshold values are likely to be less than the acceptable levels for other normed fit indices. Thus, Schumacker and Lomax (1996) noted that parsimonious-fit indices in the .50s are not unexpected for models with non-significant χ^2 statistics and goodness-of-fit indices in the .90s. For the AIC, smaller values represent better fit of the hypothesized model (Schumacker & Lomax, 1996).

Chapter 8: Results

Demographics

Sex

One hundred and eighty five (62.3%) of the participants in the final sample were female, 108 (36.4%) male and four did not specify their sex.

Age

There were 31 (10.4%) participants aged 25 or less, 98 (33.0%) between 26-35 years and 86 (29.0%) aged between 36-45. The 46-55 age group contained 48 (16.2%) participants, and there were 33 (11.1%) participants 56 years or above.

Level of Responsibility

Thirty five (11.8%) participants were senior managers, 48 (16.2%) were middle managers and 28 (9.4%) supervisors/team leaders. One hundred and forty (47.1%) classified themselves as salaried staff without direct reports and 36 (12.1%) as waged workers. Five people (1.7%) considered themselves self-employed and another five (1.7%) did not answer this question.

Location

In terms of main work location, 172 (57.9%) indicated that they were based in Auckland, and 80 (26.9%) considered Wellington their working base. Outside the two main centres, 42 (14.1%) indicated that they worked mostly in 'Other New Zealand' locations, while three (1.0%) were currently on overseas assignments.

Assumption Testing

The data was initially screened for missing data and outliers. There were 110 participants who started the questionnaire but did not finish it, and it was decided to delete these cases because they all contained more than 15% missing data. Following the deletions, there was no variable which contained more than 5% missing data. Little's MCAR test indicated the values were missing completely at random and thus Expectation Maximisation was used to impute the missing data (Tabachnick & Fidell, 2007). No univariate outliers were detected after dealing with missing data. Further to these checks, parametric assumptions were tested.

The data met most, but not all of the parametric assumptions. The data was independent and interval level, as while Likert-type scales are not technically continuous the underlying variables are assumed to be continuous (Tabachnick & Fidell, 2007). Structural equation modelling (SEM) also requires adequate sample size. The rule of thumb for an adequate sample size dovetails at around 15 cases per measured variable (Schumacker & Lomax, 1996), which this study achieved.

In regard to normality, according to the categorisations set out by Lei and Lomax (2005) each variable in this study had at least a slight deviation from normality, with emotion-focused coping and perceived performance being severely kurtotic. These two variables were transformed in three different ways, using a log transformation, a square root transformation and a reciprocal transformation as suggested by Field (2005). However, none of these transformations

significantly altered the results when compared to the non-transformed data. Also, because of interpretational difficulties when using transformed data (Howell, 2007), the data was kept in the untransformed state. Lei and Lomax also concluded in their study of normality violations that “the usual interpretation of SEM parameter estimates can be accepted, even under severe non-normality conditions” (2005, p. 16). Additionally, bootstrapping procedures were employed in the calculation of regression weights and standard errors, as bootstrapping does not require normality of the sampling distribution (Preacher & Hayes, 2008).

Measurement Models

Confirmatory factor analyses (CFA) were used to obtain the best fitting set of items to represent each measure.

The initial measurement model for hardiness was constructed with the three hardiness subcomponents (commitment, control and challenge) with 5 items loading on each. This model did not adequately fit the data (χ^2 (87, $N = 297$) = 243.27, $p < .001$, CFI = .85; RMSEA = .08). Four items were deleted based on their poor loadings and high modification indices. There was also a high correlation ($r = .85$, $p < .001$) between the commitment and control components. The solution was to combine the commitment and control items into a single factor, and this structure provided good model fit (χ^2 (43, $N = 297$) = 95.71, $p < .001$, CFI = .93, RMSEA = .06).

A second order model was also tested. However, the high multicollinearity between the commitment and control components meant that a negative variance estimate was obtained when the three

factors were separate. With only two first order factors, the model was unidentifiable, even after imposing a restrictive number of constraints (Byrne, 2001). The second order model for hardiness was not supported by the data.

After deleting three appraisal and three coping items, the models of appraisal, coping and affect adequately fit the data (see Table 1). The three longer term outcome measures were analysed in one model because the measure of intention to turnover did not have sufficient degrees of freedom to be tested as a measurement model on its own. These also showed acceptable fit to the data.

Table 1

Fit Indices for Final Measurement Models

<i>Model</i>	<i>df</i>	<i>χ^2</i>	<i>CFI</i>	<i>RMSEA</i>
Hardiness	43	95.71***	.93	.06
Appraisal	26	55.30**	.98	.06
Coping	59	166.83***	.93	.08
Affect	48	116.65***	.97	.07
Organisational outcomes	62	138.75***	.97	.07

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation. ** $p < .01$, *** $p < .001$

Descriptive Statistics

Table 2 presents the means, standard deviations, and correlation coefficients between the hardiness, appraisal, coping, affect, and outcome variables. Before examining the hypothesised relationships some general findings will be considered.

Table 2

Descriptive Statistics and Correlations for Hardiness, Appraisal, Coping, Affect and Outcomes

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 Hardiness	.75											
2 Challenge appraisal	.36**	.85										
3 Threat appraisal	-.25**	-.59**	.80									
4 Problem-focused coping	.24**	.36**	-.10	.83								
5 Cognitive restructuring	.13*	.16**	-.06	.17**	.74							
6 Support seeking	.18**	-.19**	.21**	.14*	.18**	.74						
7 Emotion-focused coping	-.28**	-.34**	.45**	-.10	-.05	.03	.70					
8 Positive affect	.43**	.48**	-.38**	.19**	.26**	.08	-.31**	.89				
9 Negative affect	-.15*	-.38**	.50**	.01	-.08	.16**	.44**	-.43**	.93			
10 Job satisfaction	.54**	.25**	-.19**	.20**	.04	.12*	-.25**	.32**	-.09	.78		
11 Performance	.34**	.26**	-.18**	.26**	.10	-.01	-.13*	.09	-.04	.22**	.85	
12 Intention to turnover	-.37**	-.13*	.14*	-.07	-.01	-.14*	.21**	-.23**	.11	-.59**	.01	.82
Mean	2.90	2.84	2.10	3.38	2.58	2.50	1.46	2.30	2.39	3.86	4.31	2.33
SD	0.42	0.69	0.76	0.59	0.82	0.83	0.59	0.87	0.81	0.68	0.57	1.08

Note: Scale reliabilities are on the diagonal in bold.

* $p < .05$, ** $p < .01$.

Non-hypothesised Findings

Challenge appraisals and threat appraisals were strongly negatively correlated. This suggests that people tend to make either a challenge or a threat appraisal when facing a stressful situation, with the higher a challenge appraisal, the less of a threat appraisal that was made and vice versa. This relationship was stronger than has been reported in other research (Mikulincer & Florian, 1995).

It is worth noting that the relationship between the hardiness component of challenge and challenge appraisal was significant but small. Compared to the relationships that challenge appraisal had with other variables, this is one of the smallest, supporting the idea that these two variables are different constructs.

In regards to coping, problem-focused coping was significantly though weakly positively associated with cognitive restructuring and social support, and negatively related to emotion-focused coping. Cognitive restructuring and social support also had a weak positive correlation, though neither had a significant relationship to emotion-focused coping. These relationships indicate that people do use multiple coping responses to manage a situation perceived as stressful.

Group Differences

Independent t-tests were conducted to identify whether there were any significant sex differences in hardiness, appraisal, coping, affect or other outcome variables. Checking for differences between the sexes has been called for by a number of researchers who have suggested

this as a confounding third variable in previous studies (Klag & Bradley, 2004; Soderstrom et al., 2000; Wiebe, 1991).

The only statistically significant differences between Males and Females was for challenge appraisals ($t_{291} = -2.13$, $p = .02$) and the use of the coping strategy of support seeking ($t_{291} = 2.96$, $p = .01$). An examination of the means reveal that Males ($M = 2.96$, $SD = 0.63$) were more likely to appraise their situation as a challenge than Females ($M = 2.77$, $SD = 0.71$). The Males ($M = 2.29$, $SD = 0.72$) in this sample were also less likely to seek support than Females ($M = 2.58$, $SD = 0.82$). Though statistically significant, these findings were deemed not to be too large to prevent them from being analysed together.

Hypothesised Bivariate Relationships

Hardiness showed a strong positive correlation with job satisfaction, a weak positive relationship to perceived performance and a moderate negative association with intention to turnover. These findings support hypotheses 1 through 3a.

Mediation

The relationship between hardiness and intention to turnover was expected to be mediated by job satisfaction (hypothesis 3b). Assumptions for mediation were met with significant standardised direct effects of hardiness on the dependent variable (intention to turnover; $\beta = -.46$, $p = .01$) and on the proposed mediator (job satisfaction; $\beta = .77$, $p = .01$). Controlling for the indirect (mediated) path through job satisfaction, the direct path between hardiness and intention to turnover became non-significant ($\beta = .13$, $p = .42$). Thus,

job satisfaction fully mediated the relationship between hardiness and intention to turnover, supporting hypothesis 3b.

Structural Models

Stage three was based around testing and comparing the two hypothesised models of the transactional process of stress, investigating hypothesis 4.

Table 3

Fit Indices for the Sequential and Simultaneous Structural Models

<i>Model</i>	<i>df</i>	<i>χ^2</i>	<i>CFI</i>	<i>RMSEA</i>	<i>PCFI</i>	<i>AIC</i>
Sequential						
1a. Hypothesised	1064	1968.99***	.88	.05	.83	2192.99
1b. Removed performance	806	1582.27***	.87	.06	.81	1776.27
1c. Direct path added to job satisfaction	807	1480.28***	.89	.05	.83	1672.28
Simultaneous						
2a. Hypothesised	1062	1930.58***	.88	.05	.83	2158.58
2b. Removed performance	806	1550.30***	.88	.06	.82	1744.23
2c. Direct path added to job satisfaction	806	1447.17***	.90	.05	.84	1641.17

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; PCFI = parsimony comparative fit index; AIC = Akaike's information criterion. *** $p < .001$

Preacher and Hayes (2008) recommended that because mediating variables often have substantial residual correlations, the errors should be allowed to covary. Investigation of the correlation table and the modification indices suggested that challenge and threat appraisals were highly correlated ($r = -.59$, $p < .001$), thus it was decided to allow the error terms of these variables to covary. The

coping factors were weakly correlated ($r < .19$) so in the interests of parsimony, these variables were left without covarying error terms.

The initially hypothesised sequential model had a good RMSEA fit value, though it did not achieve adequate fit in terms of the CFI value (see Table 3, model 1a). The initially hypothesised simultaneous model was similar, in that the RMSEA was good, but the CFI was below the .90 value expected for a good fitting model (see Table 3, model 2a).

Because the a priori models did not achieve adequate fit, it was decided to proceed with model generation. Both models were modified using the same steps, first with the deletion of non-significant paths to improve parsimony. In both models, this meant the deletion of paths to performance and thus the deletion of the variable itself (see Table 3, models 1b and 2b). These actions slightly reduced the absolute fit of each model, though it improved the parsimony statistics.

These modifications did not, however, produce adequate fit. As previous analyses had demonstrated (Kobasa et al., 1982a; Rush et al., 1995), the relationship between hardiness and job satisfaction may not be fully explained through hardiness' relationship with appraisal, coping and affect. Hardiness had revealed a strong, direct relationship to job satisfaction in a number of studies (e.g. Luszczynska & Cieslak, 2005; Manning et al., 1988; McCalister et al., 2006). Thus, it was decided to follow the lead of Rush, Schoel and Barnard (1995) and test whether the addition of a direct path from hardiness to job satisfaction provided better model fit than only linking hardiness through the processes of appraisal, coping and affect.

The direct path was added to both models and emerged as large and significant in both the sequential and simultaneous models. It also made all remaining paths from affect to job satisfaction non-significant. Adding the direct path and deleting the non-significant ones improved all fit statistics, with the direct simultaneous model achieving acceptable fit and the direct sequential model almost reaching the criterion (see Table 3, models 1c and 2c). Though the difference between the two models is slight, the sequential model had the best fit to the data, supporting hypothesis 4. The final model is shown in Figure 10. These results suggest that the relationship between hardiness and job satisfaction was not well explained through the processes of appraisal, coping and affect.

This chapter described the results of the study, following the statistical procedures used to test the four hypotheses. Bivariate correlations supported the positive relationships between hardiness and performance (hypotheses 1), hardiness and job satisfaction (hypothesis 2), and the negative relationship between hardiness and intention to turnover (hypothesis 3a). Mediation analysis supported hypothesis 3b, which stated the relationship between hardiness and intention to turnover would be mediated by job satisfaction. The structural equation modelling analysis found that the simultaneous model provided better fit than the sequential model, supporting hypothesis 4.

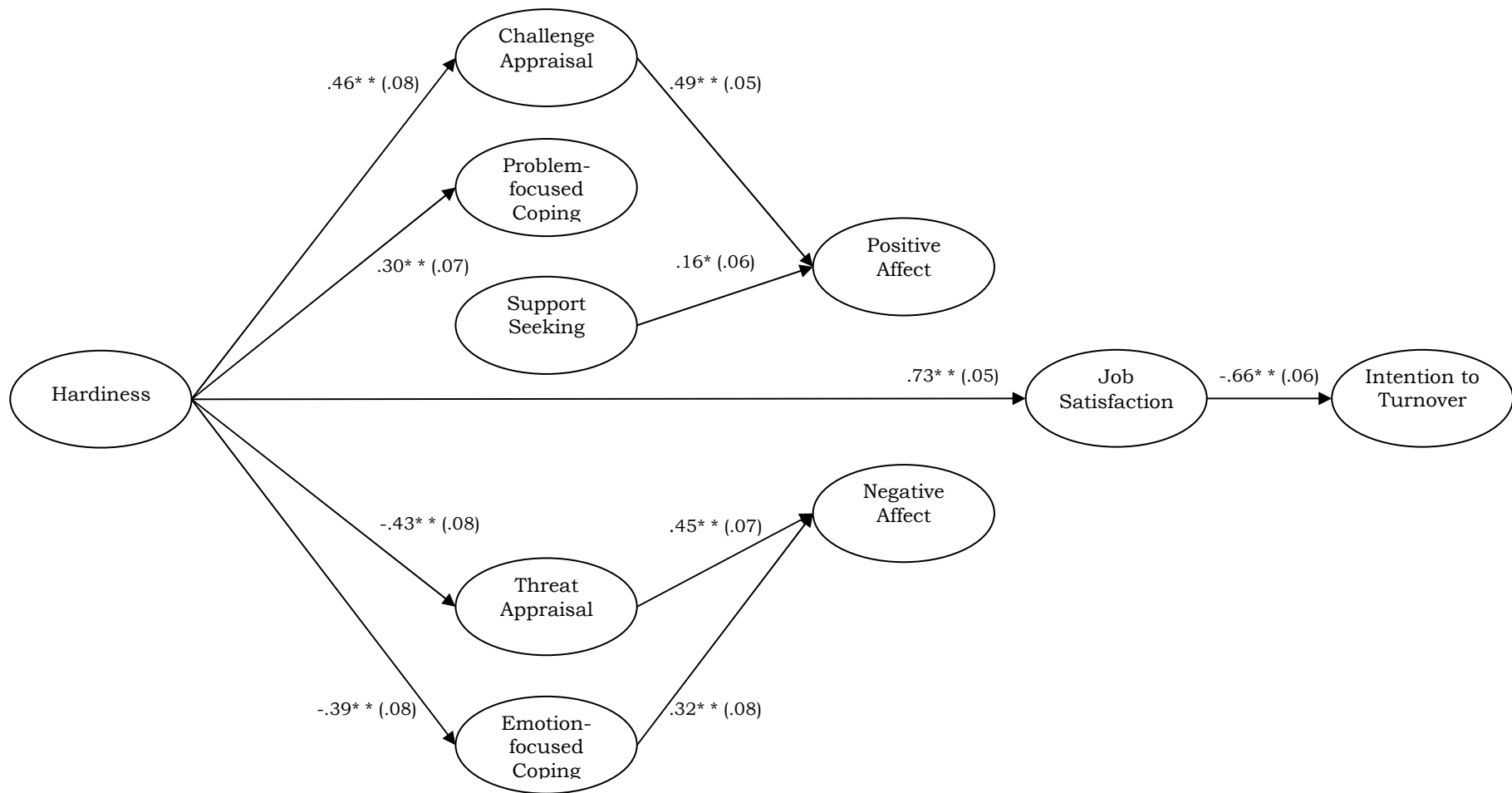


Figure 10. Final simultaneous structural model (Model 2C) of relationships among hardiness, appraisal, coping, affect, job satisfaction and intention to turnover. Significant standardised structural path coefficients shown with bootstrapped standard errors in parentheses. * $p < .05$. ** $p < .01$.

Chapter 9: Discussion

Hardiness is an important variable in explaining individual differences in people's ability to handle stressful situations. This research has extended the literature by establishing the relationship of hardiness to organisationally based variables of job satisfaction, performance and intention to turnover. It has also tested two versions of the transactional model of stress, finding the simultaneous model as the best fit for the data. Though the indirect pathways from hardiness through appraisal and coping do not appear to explain the relationships to job satisfaction, there is some support for a dual pathway model to affect.

Main Findings

Structure of Hardiness

The expected three factor structure of hardiness was not supported in this study. Instead, a two factor solution provided the best fit. However, the challenge factor of hardiness only had a handful of small correlations with other variables, providing little predictive benefit. As such, it was excluded from further analysis. Many studies have had similar problems with the hardiness factor of challenge (Florian et al., 1995; Hull et al., 1987; Klag & Bradley, 2004; Williams et al., 1992), yet other researchers have found relationships between challenge and other variables (Bartone et al., 2006; Sinclair & Tetrick, 2000; Soderstrom et al., 2000). This suggests it is premature to call for its deletion from future research (Hull et al., 1987). One of the problems in this study was that the negatively keyed items did not relate well to

the positively keyed items. The factor of challenge contained three negative items out of five, and the other factors only had one negative item each. This could explain some of the divergence. This author also supports the calls of Florian et al. (1995) to re-conceptualise the challenge factor as more of a search for meaning. Perhaps increasing the number of positive items or re-focusing the concept of challenge may provide more reliable results.

Relationships to Outcomes

One of the important aspects of this study was to explore the relationships of hardiness to organisationally relevant outcomes, beyond those of mental and physical health.

The findings supported the hypothesis that hardiness and job satisfaction would be positively related. This is consistent with existing research (Maddi et al., 1998; McCalister et al., 2006; Rush et al., 1995), and indicates that people higher in hardiness are more likely to report higher levels of satisfaction with their job.

Hardiness and performance had a weak positive correlation. Again, the positive relationship is consistent with the literature (Bartone, 2000; Maddi et al., 2006; Westman, 1990). However, the weakness of the relationship is suggested to be due to the self-report nature of the measure rather than reflective of the relationship itself. The problem was that a large positive skew existed in the measure of perceived performance. This is understandable when considering that people tend to rate themselves higher or better than most others, known as the above average effect (Krizan & Suls, 2008).

The negative relationship between hardiness and intention to turnover was also supported by the results, indicating that the higher a persons' level of hardiness, the lower their intention to leave the organisation. However, the mediation analysis revealed that this relationship is fully mediated by job satisfaction. This provides support for models that place job satisfaction as a direct antecedent of intention to turnover (Griffeth et al., 2000), and as a mediator between personal dispositions and turnover intentions. The results of this study provide support for hardiness as a personality variable that could help to predict and explain the process of turnover in organisations.

Model Comparison

There were mixed results regarding the overall models. Both models achieved acceptable levels of fit according to the RMSEA criteria, though after modification the simultaneous model was the only one to achieve adequate levels of fit according to the CFI statistic. The final simultaneous model did not support the original proposition that hardiness would be linked, through the processes of appraisal, coping and affect, to job satisfaction and performance. The model did link hardiness to affect through appraisal and coping, though the relationship to job satisfaction was best predicted directly by hardiness.

Simultaneous Model

As predicted, the higher a participant's level of hardiness, the more likely they were to appraise the situation as a challenge and less likely to appraise the situation as threatening. This relationship has been consistently found in the literature (Pagana, 1990; Westman, 1990; Wiebe, 1991).

In terms of coping strategies, problem-focused coping and support seeking were used more by those with higher levels of hardiness, supporting the findings of previous studies (Boyle et al., 1991; Carver, 1989; Maddi & Hightower, 1999; Rush et al., 1995). Higher levels of hardiness were also found to be related to lower levels of emotion-focused coping. Unexpectedly, hardiness was not associated with cognitive restructuring, meaning that in this study a person's level of hardiness did not impact the degree to which they accepted the situation or used humour to cope with the demands. It could be that these strategies do not constitute a separate category, but instead are best understood under a broader category of emotion-focused coping (Maddi & Hightower, 1999). However, cognitive restructuring was positively associated with positive affect, whereas emotion-focused coping was negatively related to hardiness and negatively related to positive affect. These differential relationships suggest that they are distinct constructs and should not be combined.

The simultaneous model results show that hardier people were more likely to experience positive affect, and this was influenced by their perception of the situation as a challenge. This aligns with the findings of Tugade and Fredrickson (2004). It also reveals that the

higher the level of hardiness, the less likely a person was to experience negative affect from dealing with a stressful situation. This relationship was partially explained by perceptions of the situation as threatening and the lower use of emotion-focused coping, and this follows the cross sectional findings of Florian et al. (1995).

Though not as clearly identifiable as in the sequential model, the simultaneous model does provide some support for a dual pathway concept. Significant regression path coefficients link hardiness, appraisal, coping and affect in separate “positive” and “negative” paths. The “positive” pathway linked higher levels of hardiness with an increased likelihood of appraising the situation as a challenge, and then higher levels of positive affect. The “negative” pathway related lower levels of hardiness with an increased likelihood of seeing the situation as threatening and a higher use of emotion-focused blame and distancing activities, linking to higher levels of negative affect.

There were a number of expected paths that did not achieve significance. Hardiness did not relate to support seeking, though this could be because emotional and instrumental support were combined. While hardy people may seek practical and instrumental assistance from others, they could be less inclined to seek comfort or emotional support (Kobasa, 1982). It would be useful, therefore, for future research to measure and test the different forms of support separately.

Cognitive restructuring was removed from the analysis, as it had no significant relationships with hardiness or positive affect in this model. The lack of relationships associated with cognitive restructuring could indicate that the use of cognitive restructuring is

actually not associated with levels of hardiness or the appraisals that people make. It could be a measurement problem, or it may not be a separate construct at all. Future research into this relatively new coping category could clarify this point.

The lack of a significant path between problem-focused coping and positive affect suggests that getting involved and working on resolving the demands at hand did not effect changes in positive mood. This is likely to be because the outcome of eustress was operationalised as high intensity positive affect, and that the task-based nature of the coping efforts, such as making a plan, did not engender feelings of cheerfulness and enthusiasm.

Relationship to Job Satisfaction

The final model included a direct link between hardiness and job satisfaction, which reduced the relationship between positive affect and job satisfaction to non-significance. This shows that in this study the affect experienced when dealing with a demanding situation was not significantly related to job satisfaction above what was explained by hardiness. Thus, these results did not provide support for the Affective Events Theory (Weiss & Cropanzano, 1996), which proposed that satisfaction judgements are influenced by recent affective experiences. Instead, it seems that job satisfaction was best predicted by the trait variable of hardiness. This aligns with the idea that job satisfaction is relatively stable and can be accounted for by personality (Dormann & Zapf, 2001).

The introduction of the direct path to job satisfaction shows the importance of comparing different models. Though no model is ever proven to be correct, showing that one model has superior fit over plausible equivalent models provides the strongest form of support (Kline, 2005).

Limitations

The cross sectional nature of this research and the use of a single measurement source pose three limitations. Firstly, common method variance may have inflated the relationships among the latent variables. Second, while employees are in the best position to report many of the variables used in this study such as appraisal, coping, affect, job satisfaction, other forms of measurement may have provided better (more normally distributed) measures of job performance. However, in spite of this, in many jobs there are few individual objective performance measures, and managers' ratings are associated with their own biases (Arvey & Murphy, 1998). Finally, it is not possible to establish causation among the variables as this can only be done by utilising a different research design. However, the modelled relationships provide a plausible pattern of causal associations to be investigated further. Future research should make more use of longitudinal, or process-oriented designs such as ecological momentary assessment, to capture the dynamic nature of the processes (Somerfield & McCrae, 2000; Stone et al., 1995). In this way researchers will be able to more confidently address issues of causation.

The study sampled employees from a range of industries, though the results are biased towards professional employees. This sample may have suffered from a floor effect, in which the sampled employees sit higher on problem-focused coping, and a ceiling effect, where they sit lower on emotion-focused coping because of the nature of what is required and acceptable in working situations. This potential restriction of range would have made it harder to find significant effects. The results can be generalised to professional employees from large New Zealand organisations.

The coping measure used in this study achieved good fit. However, this was after deleting a number of items, leaving only three items per category. As Folkman and Moskowitz (2004) point out, this is liable to reduce the validity of the measure. However, the coping literature has been plagued by problems with measurement and structure across its history (Schwarzer & Schwarzer, 1996; Skinner et al., 2003; Zautra et al., 1996). It seems it will be some time yet before there is a measure of coping with a consistently replicable factor structure and stable set of measurement items.

The problem of unmeasured variables exists for most studies that test causal models using structural equation modelling (Rush et al., 1995). Excluding variables that have significant relationships with predicted variables can result in incomplete and inaccurate models. While the major antecedent of intention to turnover was included, future research should consider other variables that might also play causal roles (e.g. neuroticism, situation controllability).

In terms of the two tested models, there was surprisingly little difference in the comparative fit statistics. This suggests that while the simultaneous model is the better model (achieving acceptable fit in the last modification), the sequential model should not be written off. The similarity shows that, despite predictions, it appears not to make substantial differences whether appraisal and coping are placed in a linear or simultaneous fashion.

Implications for Research

The negative association between hardiness, threat appraisals and emotion focused coping suggests that hardiness may mitigate the use of less adaptive thoughts and coping strategies, thus serving as a protective mechanism in stressful and demanding situations. Hardiness is also related to challenge appraisals and problem-focused coping, meaning it also promotes more positive thoughts and behaviours. However, hardiness did not relate as expected to other 'adaptive' coping strategies (support seeking and cognitive restructuring). These strategies could be more influenced by the environment, thus more research is needed to examine whether the characteristics of the situation (e.g. availability of support, controllability) influence these relationships.

It would also be useful to specifically investigate the variables of appraisal and coping as mediators. However, this would require testing of multiple mediation and as this has only recently been outlined as a statistical possibility (Preacher & Hayes, 2008), it was beyond the scope of this thesis.

Measures of Hardiness

The factor of challenge did not relate to the other factors of commitment and control, despite assurances from Bartone (1995; 2007a; 2007b), the author of the hardiness measure, and independent testing (Sinclair & Tetrick, 2000). Nor did it relate to the other latent variables as expected. This again raises concerns as to the measurement and structure of hardiness. Future research should investigate the balance of positive to negative items across the three factors, or perhaps re-focusing the concept of challenge around search for meaning as called for by Florian (1995).

Curvilinear Relationships

One possible explanation for the difficulty in achieving acceptable fit could be that the investigated relationships are not linear. Aspinwall and Taylor (1997) suggested that this might be true for threat appraisal and effective action. No action is taken when no threat is perceived, and effective action gets facilitated at moderate levels of threat. In situations perceived as highly threatening, Aspinwall and Taylor proposed that anxiety may impede effective action and thus performance. Future research should more closely examine the potential for non-linear relationships within hardiness and coping research.

Turnover

While this study has focused on linking hardiness to individual outcomes, it may be that the benefits of hardiness could be seen in the effects on others. For example, Judkins, Reid and Furlow (2006) suggested that hardiness could have a strong impact on the turnover of an individual's team. Their study, comprised of a hardiness training

program for 13 nurse managers, found a 63% decrease in the turnover rates of the participants' staff teams. While it was a small sample, it suggests that individual hardiness may have an impact on the rates of turnover for that person's team.

Biological Basis for Personality

Another worthwhile area of future research could be to examine the biological basis for personality. In particular, Gray and McNaughton's (2000) revised Reinforcement Sensitivity Theory proposes that three separate brain systems govern people's approach and withdrawal behaviours. The behavioural approach system (BAS) regulates anticipatory pleasure and is activated by appetitive stimuli, the behavioural inhibition system (BIS) regulates anxiety and is activated by goals which must be faced, and the flight-fight-freeze system (FFFS) regulates fear and is activated by threatening stimuli which can be avoided. It could be that people high in hardiness are sensitive to rewards (high BAS), and thus approach new situations more openly or frequently. While Fugate, Kinicki and Prussia (2008) outlined the role of BIS/BAS in the processes of appraisal, affect, coping and outcomes, it would seem a fruitful addition to link hardiness into this process.

More Hardiness is Always Better

In much of the existing hardiness literature there is the implicit assumption that the higher the level of hardiness, the better. However, Judge and Hurst comment that "every concept has potential limitations, and core self-evaluations is no exception" (2007, p. 166). Neither is hardiness, and it appears that too much of a good thing could potentially be problematic. Carver and Scheier (2003) discuss

this idea when looking at what they call the three human strengths. Persistence and growth are two of the strengths, and these tie into the core of hardiness. They also suggest that disengagement is a virtue, having the ability to give up and cut one's losses. This idea relates closely to the serenity prayer used by Alcoholics Anonymous where one asks for the ability to "accept the things I cannot change, courage to change the things I can, and the wisdom to know the difference" (Doug, 1992). There is no provision in the current definitions and studies of hardiness for the possibly beneficial effects of disengaging and giving up on a course of action.

There is a possibility then, that there may be problems with very high levels of commitment, control and challenge. A person who has an absolute belief that the situation has meaning for them, and is committed to the growth opportunities that it provides, may disregard signs of impending failure and persist beyond what is optimal. Similarly, having an extremely high level of control and believing one can influence all outcomes, including those in the control of others, forebodes problems. Finally, believing that change is the norm, those people at very high levels of challenge may instigate change at inappropriate times or too often, perhaps leaving others with 'change fatigue'.

This suggests that future researchers should be aware of the potential downsides of very high levels of the three factors, whether individually or in combination. Perhaps Orr and Westman's (1990) definition of control as the "tendency to believe and act as if one can influence the course of events *within reasonable limits* [italics added];

it entails the responsibility to act, but excludes the tendency to manipulate others” (p. 65) is more appropriate than its unqualified counterparts.

Implications for Practice

This research provides support for a transactional perspective of stress which has a great deal of potential for application in organisational settings.

At the individual level, this research highlights that individual differences play an important role in the way demanding situations are experienced and managed. Hardier people view change as normal and as an opportunity for growth, they believe they can influence their outcomes, and they are committed to the people and events around them. Thus, these attitudes have an impact on whether a demanding situation is seen as challenging or threatening. Helping individuals to become aware (through training, coaching) that these beliefs and attitudes affect the way they approach situations is the first step in affecting change. It must be noted, however, that becoming aware is not enough, as real lasting change requires intention, effort and support from others (Vaughan & Hogg, 2002).

It is particularly important to highlight that managing stressful situations is not just the responsibility of the individual. As has been recognised in the New Zealand legislation, managing stress is a dual responsibility (Health and Safety in Employment Amendment Act, 2002). Dewe (1997) even went as far as to say that focusing on ‘individual dysfunction’ and suggesting that individuals ‘toughen up’ can direct attention away from bad organisational processes and

cultures, which constrain the ability of individuals to display the full range of potentially effective coping behaviours. Particularly competitive and hard driving organisational cultures may place considerable barriers for individuals to demonstrate effective thoughts and actions.

The transactional model highlights that it is the subjective interpretation of work events that influences behaviour. This interpretation is based upon the balance of demands and (internal and external) resources perceived to be available. When demands are seen as outweighing the resources to cope, negative outcomes become more likely. Organisations can thus assist individuals by ensuring that training to increase personal resources (knowledge and skills) is available, as well as monitoring external resources such as budgets, timeframes, leadership and teamwork. Appropriate resources are likely to help people to cope better with higher levels of demands. However, it is important to make sure that those resources are the ones perceived to be needed.

The supported model also shows that organisations should not just reduce the workload and complexity of jobs as traditional stimulus based models of stress suggest (Cox, 1990). Having demanding aspects to peoples' jobs provides opportunities for beneficial outcomes such as high intensity positive affect (eustress) and growth. Taking away all the potentially stressful aspects to jobs would take away the potential for positive outcomes and mean that there would be little for employees to do, as different people find different things stressful.

It has been suggested that hardiness or resilience competencies could be useful as selection criteria (Bartone, 2000; Caverley, 2005), as these things relate to managing better under stressful and demanding situations. However, the underlying tenet of hardiness is that it is learnable (Maddi et al., 1998). It would therefore be unethical to select for something that could be trained, though perhaps there is a case for it in highly stressful military roles (Bartone, 1999).

An industry has recently flourished, offering stress management and hardiness training programs. There has been some initial empirical support for these types of programs (Judkins et al., 2006; Maddi et al., 1998), and this author cautiously recommends that programs such as these could be beneficial. However, it would be important to include aspects from the full range of the process, including development of the hardy components of commitment and control, recognition of appraisal as a balance between resources and demands, as well as gaining practice with a range of beneficial coping strategies. This would also need to be done in addition to ongoing reviews of organisational support processes. If these things are achieved, a hardiness and stress management training program could have positive effects for both individuals and organisations as a whole.

Conclusion

The present research has demonstrated that the personality variable of hardiness has an important influence on the way people perceive, cope and feel about managing stressful and demanding situations. Thus, a person's level of hardiness affects whether they embark on a constructive, adaptive path or a negative, potentially maladaptive one. Higher levels of hardiness have also been shown to be related to job satisfaction and lower intentions to turnover. Florian et al.'s (1995) version of the transactional model provided the best fit to the current workplace sample, and its application revealed more of the complex relationships between personality, situational processes, and organisationally relevant outcomes.

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Appendix A



Massey University

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HARDINESS AND COPING IN THE WORKPLACE

PARTICIPANT INFORMATION SHEET

Hello, my name is Melanie Cash and I am completing my Masters degree at Massey University in Auckland. Under the supervision of Dr Dianne Gardner of the Psychology Department, I am interested in looking at the ways that people perceive stressful events, and what they do to cope under stressful circumstances.

This is useful to investigate because a number of relationships have been identified between the ability to thrive under stressful circumstances and things such as lower stress, lower burnout, higher well-being, and improved performance. More research is needed to understand how hardiness works to produce these effects, and under what circumstances.

I would like to ask you to complete an online questionnaire. This study is supported by **COMPANY NAME** and all employees are being invited to take part. The questionnaire should take about 20 minutes, and it will ask about your thoughts, feelings and behaviours at work. On completion of the research, I will provide a summary of the findings to be distributed via email to all the people who were invited to participate in the research.

Please note:

- Participation in this research is entirely voluntary.
- Completing and submitting the questionnaire implies that you consent to take part.
- You do not have to answer any question if you don't want to.
- Data will be stored securely on the researcher's password protected computer and after a period of five years, the data will be destroyed.

If you wish to participate, please click on the link in the email, which will take you directly to the survey. If you decide not to participate, please close this document and delete the email.

Thank you very much for your help and support.

Yours sincerely,

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This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application 08/020. If you have any concerns about the conduct of this research, please contact Dr Eleanor Rimoldi, Acting Chair, Massey University Human Ethics Committee: Northern, telephone 09 414 0800 x 9046, email

humanethicsnorth@massey.ac.nz

Appendix B



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Hardiness and Coping in the Workplace Questionnaire

Thank you for taking part in this research!

This questionnaire is investigating the ways people perceive stressful events, and what they do to cope. You will be asked about your thoughts and feelings about your work, and in Part 2 and 3 you will be asked to focus on a stressful situation you have encountered recently.

Please remember that your responses will be anonymous, and that there is no right or wrong answer. It is your own opinions that we are interested in.

Part 1

Below are statements about life that people often feel differently about. Please show how much you think each one is true. There are no right or wrong answers, so please give your own honest opinions.

	Not at all true	A little true	Quite true	Completely true
Most of my life gets spent doing things that are meaningful	0	1	2	3
Planning ahead can help avoid most future problems	0	1	2	3
I don't like making changes in my regular activities	0	1	2	3
I feel that my life is somewhat empty of meaning	0	1	2	3
Changes in routine are interesting to me	0	1	2	3
By working hard you can nearly always achieve your goals	0	1	2	3
I really look forward to my work activities	0	1	2	3
If I'm working on a difficult task, I know when to ask for help	0	1	2	3
I don't think there's much I can do to influence my own future	0	1	2	3
Trying your best at work is really worth it in the end	0	1	2	3
It bothers me when my daily routine gets interrupted	0	1	2	3
Most days, life is really interesting and exciting for me	0	1	2	3
I enjoy the challenge when I have to do more than one thing at a time	0	1	2	3
I like having a daily schedule that doesn't change very much	0	1	2	3
When I make plans I'm certain I can make them work	0	1	2	3

Part 2

To respond the statements in Part 2 of the questionnaire, you should have a specific stressful situation in mind. Take a few moments and think about the most stressful situation you have experienced **at work** in the last few weeks. By “stressful” we mean any situation where you had to use considerable effort to deal with the situation.

Please briefly describe the stressful situation.

Please indicate how you thought and felt when you first encountered the stressful situation that you described above.

	Not at all			Very much
I believed I had the ability to overcome the stress	0	1	2	3
I believed I could positively attack the stressors	0	1	2	3
I believed I had what it took to beat the stress	0	1	2	3
I was eager to tackle the problem	0	1	2	3
I felt I would become stronger after experiencing the stress	0	1	2	3
I believed I had the skills necessary to overcome the stress	0	1	2	3
I was excited about the potential outcome	0	1	2	3
I perceived the stress as threatening	0	1	2	3
I felt totally helpless	0	1	2	3
I felt anxious	0	1	2	3
I believed this stressful event would impact me greatly	0	1	2	3
I believed this situation was beyond my control	0	1	2	3
I believed the outcome of this stressful event would be negative	0	1	2	3
I believed this event would have serious implications for my life	0	1	2	3
I believed this stress would have a negative impact on me	0	1	2	3
I believed there were long term consequences that would result from this stress	0	1	2	3
I believed there was someone I could turn to for help	0	1	2	3
I believed there was help available to me	0	1	2	3

Please indicate how often you used each of the following responses with the stressful situation you described in Part 2.

	Not at all			Very much
I concentrated on doing something about it	0	1	2	3
I took action to try to make the situation better	0	1	2	3
I tried to come up with a strategy about what to do	0	1	2	3
I thought hard about what steps to take	0	1	2	3
I tried to see it in a different light, to make it seem more positive	0	1	2	3
I looked for something good in what happened	0	1	2	3
I accepted the reality of the fact that it had happened	0	1	2	3
I learned to live with it	0	1	2	3
I made jokes about it	0	1	2	3
I made fun of the situation	0	1	2	3
I tried to find comfort in my religion or spiritual beliefs	0	1	2	3
I prayed or meditated	0	1	2	3
I got emotional support from others	0	1	2	3
I got comfort and understanding from someone	0	1	2	3
I tried to get advice or help from other people about what to do	0	1	2	3
I got help and advice from other people	0	1	2	3
I turned to work or other activities to take my mind off things	0	1	2	3
I did something to think about it less, such as going to the movies, watching TV	0	1	2	3
I said to myself "this isn't real"	0	1	2	3
I was refusing to believe that it had happened	0	1	2	3
I said things to let my unpleasant feelings escape	0	1	2	3
I expressed my negative feelings	0	1	2	3
I used alcohol or other drugs to make myself feel better	0	1	2	3
I used alcohol or other drugs to help myself get through it	0	1	2	3
I gave up trying to deal with it	0	1	2	3
I gave up the attempt to cope	0	1	2	3
I criticised myself	0	1	2	3
I blamed myself for things that had happened	0	1	2	3

Thinking of your experience with the stressful situation you described in Part 2, how much of the time did you feel each of the following?

	Not at all			Very much
Tense	0	1	2	3
Uneasy	0	1	2	3
Worried	0	1	2	3
Calm	0	1	2	3
Contented	0	1	2	3
Relaxed	0	1	2	3
Depressed	0	1	2	3
Gloomy	0	1	2	3
Miserable	0	1	2	3
Cheerful	0	1	2	3
Enthusiastic	0	1	2	3
Optimistic	0	1	2	3

Part 3

Please indicate how much you agree or disagree with the following statements. As this is a sample of your own attitudes and beliefs, there are no right or wrong answers.

	Strongly Disagree				Strongly Agree
Most days I am enthusiastic about my work	1	2	3	4	5
I feel fairly satisfied with my present job	1	2	3	4	5
Each day at work seems like it will never end	1	2	3	4	5
I find real enjoyment in my work	1	2	3	4	5
I consider my job rather unpleasant	1	2	3	4	5
If I have my own way, I will be working for this company one year from now	1	2	3	4	5
I frequently think of quitting my job	1	2	3	4	5
I am planning to search for a new job during the next 12 months	1	2	3	4	5
I adequately complete assigned duties	1	2	3	4	5
I fulfil responsibilities specified in the job description	1	2	3	4	5
I perform tasks that are expected of me	1	2	3	4	5
I meet formal performance requirements of the job	1	2	3	4	5
I engage in activities that will directly affect my performance evaluation	1	2	3	4	5
I neglect aspects of the job I am obligated to perform	1	2	3	4	5
I fail to perform essential duties	1	2	3	4	5

Part 4

Finally, could you please tell me a little bit about yourself. Remember, your responses are anonymous, and this information is important to collect because it helps us to recognise patterns of responding. For example, do males respond differently to females, do older workers respond differently to younger workers, and so on.

Please indicate your sex: ☐ Male ☐ Female

How old are you? 25 or less 26-30 31-35 36-40 41-45 46-50 51-55 56+

What is the level of your current job? _____ Senior Manager
_____ Middle Manager
_____ Supervisor/Team Leader
_____ Salaried staff without direct reports
_____ Waged Worker
_____ Qualified Tradesperson
_____ Other (Please Specify) _____

Thank you very much for taking the time to participate in this study!