

# Cognitive Appraisal, Negative Affectivity and Psychological Well-Being

Joseph Oliver

Victoria University of Wellington

Paula Brough

Griffith University, Brisbane, Australia

Current research indicates that the way in which an individual appraises a situation may be more important to psychological well-being than the actual presence of stress. Cognitive appraisal is central to the stress and coping processes, for it determines how an event is perceived and therefore operates as an essential mediator between the event and the outcome. The present study examines this relationship within a transactional theory of occupational stress. According to the transactional perspective, the appraisal of an event should be predictive of psychological well-being. However, given the role negative affectivity has been demonstrated to play in the perception of events, researchers have shifted attention to include this variable in examinations of cognitive appraisal. In the current study the relationships between negative affectivity, appraisal and psychological well-being were tested within a mediation framework. It was expected that negative affectivity would have both direct and indirect effects on psychological well-being and the indirect relationship would be mediated by cognitive appraisal. These hypotheses were supported.

According to cognitive-relational theory, for an event to be stressful or threatening, it must first be perceived as such (Lazarus & Folkman, 1984). It is hypothesised that a number of perceptual processes mediate between the environment and the individual in order to determine implications for psychological well-being (Smith & Lazarus, 1993). These processes appraise the significance and relevance of the event based on a person's subjective evaluation of that event. Richard Lazarus, one of the key proponents of the cognitive-relational theory,

argues that it is not the environment or the individual alone that create stress but the interaction between the two:

*"Stress is not a property of the person, or of the environment, but arises when there is a conjunction between a particular kind of environment and a particular kind of person that leads to a threat appraisal"* (Lazarus, 1991, p3).

Within a transactional model of stress, Lazarus and colleagues have described two types of appraisal (Lazarus & Folkman, 1984). The first, "primary appraisal", determines the significance of an event to psychological well-being. Three types of primary appraisal have been described: an irrelevant encounter, which is of little significance; a benign-positive encounter, which has positive or beneficial consequences and a stressful encounter. The appraisal of the stressful encounter is further depicted by three types, namely: appraisals of harm/loss, threat or challenge. Challenge appraisals do not have the same negative implications that harm/loss or threat appraisals have and can be positive or exciting for the individual. The second type of cognitive appraisal, "secondary appraisal", occurs when an event is appraised as stressful and involves an evaluation of what can be done in a situation, including an assessment of the availability of resources and coping options.

The transactional theory tends towards a situational specific approach to stressful situations and consequently places little emphasis on broader dispositional variables which may affect the way in which an individual appraises their experiences (Lazarus, 1991). However, researchers have increasingly argued for the inclusion of such dispositional variables, as mounting evidence points to their influence in the stress and appraisal process (Smith & Rhodewalt, 1986; Hemenover & Dienstbier, 1996). The dispositional variable of negative affectivity, in particular, has recently received considerable attention as a potential confound variable in the stressor-strain relationship.

Negative affectivity (NA) has been defined as reflecting individual differences in negative emotion and self concept (Watson & Clark, 1984). It has been argued that NA may affect perceived levels of stress by influencing

perceptions of the self or environment. Accordingly, individuals found to be high in NA tend to report higher levels of dissatisfaction and perceived stress, when compared with individuals who have lower levels of NA (Watson & Clark, 1984). Although there is strong empirical evidence linking NA to psychological well-being outcomes (e.g. Eysenck, 1991) some authors have suggested that this relationship originates out of a tendency of those individuals high in NA to respond to self report methodologies with an overall negative perception (Watson, Pennebaker & Folger, 1987; Costa & McCrae, 1990). In support of this hypothesis, Brief, Burke, George, Robinson and Webster (1988) found that partialling out the effects of NA reduced the stressor/strain relationship considerably. However, subsequent research (e.g., Chen & Spector, 1991; Jex & Spector, 1996) has failed to demonstrate correlation reductions anywhere as large as those found by Brief et al. (1988),

Moyle (1995), in a comprehensive analysis of the effects of NA on a number of outcome measures, found that negative affectivity did not universally affect all outcomes in a similar manner. Instead she found that NA functioned in a number of different ways to influence outcomes. Moyle noted that NA was not simply a generic nuisance variable but rather it played a complex and substantive role within the stress process. In light of such findings, Spector, Zapf, Chen and Frese (2000) have argued persuasively for the inclusion of NA in the analysis of the stressor/strain relationship as more than a mere nuisance variable that should be controlled for. They suggest that there is a need for further examination of the role of NA within the stress process.

Additionally, Spector et al. (2000) proposed a number of mechanisms by which NA may affect the stressor/strain relationship, one of which focuses on environmental perceptions. According to this hypothesis, NA influences perceptions of the objective environment. Individuals with high levels of NA therefore tend to view their world more negatively and thus are more likely to rate job stressors as highly aversive experiences, which in turn leads to poorer well-being outcomes. Indeed, individuals with high levels of NA have been found to encode more negative information in a situation (Larsen, 1992), are more likely to interpret ambiguous stimuli negatively (Haney, 1973) and do report more negative interpretations of routine problems (Watson & Pennebaker, 1989).

Given the potential for negative affectivity to alter perceptions of the environment, it would appear reasonable to investigate the relationship between cognitive appraisal and NA. A number of studies have examined how these two variables interact. Gallagher (1990) established clear associations between cognitive appraisal and NA. More specifically, it was found that individuals with high levels of negative affectivity were more likely to appraise events as threatening, whereas individuals with low levels of negative affectivity were more likely to appraise the same situation as a challenge. Other studies have also linked the occurrence of negative affectivity to appraisals of threat. For example, in a student sample, Hemenover and Dienstbier (1996) found that the student's appraisal of an academic

stressor as one of a threat (rather than a challenge) was predicted by high levels of NA. Additionally, in an analysis of the effects of the five factor model of personality on primary appraisal, Shewchuk, Elliot, MacNair-Semands and Harkins (1999) found the dimension of neuroticism to be closely related to primary appraisal, leading the authors to conclude that negative affectivity is instrumental in the perception of stress.

Although inter-relationships between NA and appraisal have been established, the association has not as yet been examined in the context of outcome variables such as psychological well-being. Given the potential of NA to influence levels of individual health and the demonstrated relationship between appraisal and NA, an investigation of these variables in conjunction with each other is warranted. As the association between NA and psychological health is well established, a worthwhile approach would be to test if cognitive appraisal (particularly primary appraisal) mediates this relationship. If the relationship between primary appraisal and NA influences psychological well-being, this would add weight to the hypothesis that NA does indeed play a substantive role in the stress process.

How, then does such research apply to the New Zealand context? Following worldwide trends, New Zealand has begun to recognise the influence of occupational stress. Such recognition has been driven by looming legislative changes that could mean large financial penalties for those employers who avoid addressing this issue. Previous research has clearly established that occupational stress has a negative impact on workers in a wide range of occupations, however, exactly how this occurs and the associated mediating and mitigating factors are not well understood. Consequently, research examining this process has become increasingly pertinent as organisations search for the best methods to manage the effects of stress in the workplace.

The present study aimed to examine this relationship further within a transactional theory of occupational stress in a New Zealand sample. Specifically, the relationships between negative affectivity, primary appraisal and psychological well-being were tested within a mediation framework. This paper reports the results of tests of the following two hypotheses: Hypothesis 1: Negative affectivity will have a direct effect on psychological well-being. Hypothesis 2: The indirect relationship between negative affectivity and psychological well-being will be mediated by cognitive appraisal.

## Methodology

### Participants

One thousand questionnaires were distributed to community mental health support workers, working in various urban centres throughout New Zealand. One hundred and sixty eight people responded, constituting a 16.8% response rate. Their work comprised supporting mental health consumers (patients) in a community setting. Support workers are generally not required to have any specific educational or training requirements for the job. Of the sample, 64.8%

were female and 34.1% were male (1 % missing). The mean age for the sample was 40.6 years with a range from 18 to 69 years. The mean job tenure was 2.5 years with a range of .1 to 21.5 years.

**Procedure**

As part of a larger study of occupational stress and well being, appropriate mental health organisations were contacted and invited to participate. Self-report questionnaire packs were posted to the consenting organisations for distribution among their employees. Administration and clinical staff were not included. Each questionnaire pack contained a questionnaire booklet, an information sheet and a pre-paid return envelope (addressed to the first author at Victoria University). The participants were asked to report a stressful event that had occurred in the last few weeks and to answer questions in relation to that event. It was found that the reported events generally fell into one of two groups: (a) general organisational stressors such as poor management, staffing shortages and having too much work to do (N=76), and (b) mental health specific stressors such as dealing with abusive clients, administering medication, etc (N=75). Initial analyses revealed significant differences between these two groups in terms of both negative affectivity and psychological well-being. It was found that the first group was higher in negative affectivity and lower in psychological well-being. It was suspected that these differences might be attributable to the objective characteristics of the stressors and to minimise any biasing effect, separate analyses were conducted for the two groups. This paper reports findings pertaining to the second group only, i.e. participants who reported mental health specific stressors only.

**Measures**

A version of the *Stress Appraisal Measure* (SAM) developed by Peacock and Wong (1990) was included as a measure of primary appraisal. The original version of this measure is designed to assess the individual's perceptions of a specific, anticipated event. The measure used here was modified so that the participants were asked to respond retrospectively, i.e. to describe a significantly stressful event that had occurred to them in the last few weeks. The 12 item measure incorporated a 5 point response scale with responses ranging from 'not at all' to 'extremely'. High scores indicate high levels of primary appraisal. The internal consistency (Cronbach's alpha) for this scale was .73.

The neuroticism scale of the *Eysenck Personality Inventory* (EPI-N; Eysenck & Eysenck, 1968) was included as a measure of negative affectivity. The scale was developed as a measure of the degree to which people worry, are anxious or are pessimistic and is a widely accepted measure of negative affectivity (Watson & Clarke, 1984). This study used the shortened 12 item scale (Eysenck, Eysenck & Barrett, 1985) with a 4 point response scale ranging from 'almost never' to 'almost always'. High scores indicate high levels of negative affectivity. An acceptable internal consistency estimate (Cronbach's alpha) of .87 was obtained.

Psychological well-being was measured with the 12 item *General Health Questionnaire* (GHQ-12; Goldberg, 1978). The GHQ is designed to detect minor mental health disorders and is widely used in both clinical and occupational settings (e.g. Banks *et al*, 1980; Parker, Wall & Myers, 1995). Respondents were invited to answer the twelve questions via a consideration of their psychological well-being behaviours over the past few weeks. The respondents indicated their answers on the scale, by choosing one of four answer alternatives: 'Better than usual', 'Same as usual', 'Less than usual' and 'Much less than usual'. High scores indicate poor psychological well-being. An acceptable internal consistency of .87 was obtained for this measure.

**Data Analysis**

In order to test for possible mediating effects, correlational and regression techniques are required (Baron and Kenny, 1986). Initially, significant associations between the suspected mediator and the predictor/criterion variables must be established. Next, a series of regression equations are conducted. First, the suspected mediator variable is regressed onto the predictor variable. Second, the criterion variable should be regressed onto the predictor variable. Third, the criterion variable is regressed onto both the mediator and the predictor variable.

For mediation to be demonstrated, a number of conditions must be met. First, the mediator variable should significantly affect the predictor variable in the first regression equation. Second, the predictor variable should significantly affect the criterion variable in the second equation. Third, the mediator must be shown to have an effect on the criterion variable in the third equation. The effect of the predictor variable on the criterion variable in the third equation must be reduced in comparison to the effect in the second equation. If the effect of the predictor variable in the third equation is reduced to an insignificant level, this suggests full mediation. However, if the effect is reduced but is not below significance, this indicates the presence of partial mediation (Baron and Kenny, 1986).

Table 1. Scale Descriptives and Intercorrelation Matrix

	1	2	3	Mean	Std. Dev.
1. Primary Appraisal (.73)				38.17	8.11
2. NA*	.42	(.87)		22.91	5.52
3. GHQ**	.41	.45	(.87)	10.53	4.61

All tests are two-tailed and are significant at the  $p < .001$  level. Cronbach's alpha estimates indicated on the diagonal.

\*NA; Negative Affectivity, \*\*GHQ; General Health Questionnaire

## Results

Prior to testing for mediation, associations between the variables were examined (see Table 1). Inspection of the correlation matrix reveals significant relationships between all of the variables. Primary appraisal was positively associated with both negative affectivity and psychological well-being. This fulfils the first condition necessary to establish mediation, i.e. that the suspected mediator (primary appraisal) correlated with both the predictor variable (negative affectivity) and the criterion variable (psychological well-being). Given that these associations existed, subsequent testing for mediation was conducted in order to determine whether or not cognitive appraisal mediated the relationship between negative affectivity and psychological well-being.

Following the recommendations of Baron and Kenny (1986) three multiple regression equations were conducted. Table 2 illustrates the results of this analysis.

First, primary appraisal was regressed onto negative affectivity. It was found that negative affectivity was significantly predictive of primary appraisal and accounted for approximately 16% of the variance in this criterion:  $R^2=0.17$ ,  $F(1, 73)=15.3$ ,  $p<.001$ . Second, psychological well-being was regressed onto negative affectivity. Negative affectivity was found to be significantly predictive of psychological well-being and accounted for approximately 21% of the variance in this criterion:  $R^2=0.21$ ,  $F(1, 73)=18.84$ ,  $p<.001$ . Finally, psychological well-being was simultaneously regressed onto both primary appraisal and negative affectivity.

In this model, negative affectivity remained significantly predictive of psychological well-being. However, the introduction of the primary appraisal predictor substantially reduced the amount of unique variance explained by NA. This point is illustrated by the reduction in the standardised beta coefficient of NA from .45 ( $p<.001$ ) in the second equation to .34 ( $p<.01$ ) in the third regression equation. This result confirms that cognitive appraisal showed a partial mediating role in the relationship between negative affectivity and psychological well-being supporting hypothesis 2.

## Discussion

Lazarus (1991) has argued for a theory of stress that is largely situational specific. Thus this theory places little importance on the effects of individual dispositions on cognitive appraisal. The present study provides evidence contrary to this assertion, demonstrating the impact of negative affectivity on the appraisal of events and on subsequent psychological well-being outcomes.

### Hypothesis 1: Direct effects of negative affectivity

Negative affectivity (NA) was found to have a direct relationship with psychological well-being, supporting the first hypothesis. This indicates that individuals with high levels of negative affectivity are more likely to have worse well-being outcomes, compared with individuals with low levels of negative affectivity. This finding is consistent with previous research in this area (Eysenck, 1991). There are two possible explanations for this relationship. First, high levels of negative affectivity directly influences the more adverse reporting of well-being outcomes. Second, poor psychological well-being increases levels of NA. Given the cross-sectional nature of this study it is not possible to determine with certainty the direction of causality. However, given that NA is thought to be a relatively stable dispositional trait (e.g. Watson & Clark, 1984) and following the findings of other researchers (e.g. Moyle, 1995) it is possible to infer that NA is more likely to influence levels of psychological well-being. This suggests that negative affectivity leads individuals to experience poorer psychological well-being and/or to report greater distress.

### Hypothesis 2: Indirect effects of negative affectivity

In addition to the direct effects, it was also found that negative affectivity related to psychological well-being indirectly. This indirect pathway was mediated by primary appraisal, supporting the second hypothesis. The higher an individual is in levels of NA, the more likely they are to appraise a situation as being a stressful one. The consequential result of this increase in stressful appraisals is a decrease in psychological well-being. The findings of this study are generally consistent with research which has demonstrated that NA is predictive of stressful or

Table 2. Summary of Regression Analyses for Variables Predicting Psychological Well-Being

Criterion Variable(s)	Predictor Variable(s)	$\beta$	R	$R^2$	Adj $R^2$	F
<i>Equation 1</i>						
Primary Appraisal	Negative affectivity	.42***	.42	.17	.16	15.30***
<i>Equation 2</i>						
Psychological Well-being	Negative affectivity	.45***	.45	.21	.19	18.84***
<i>Equation 3</i>						
Psychological Well-being	Negative affectivity	.34**				
	Primary appraisal	.26*	.51	.26	.24	12.77***

$\beta$  = standardised beta coefficients; \* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$ .

threatening appraisals of events (Gallagher, 1990; Shewchuk, Elliot, MacNair-Semands & Harkins, 1999). The present study built on previous research by broadening the focus to examine the impact this has on psychological well-being.

With what mechanisms does NA affect psychological well-being? It has been argued that NA causes a person to view their environment in a more negative manner (Spector, Zapf, Chen and Frese, 2000). This influence can, in turn, heighten the amount of stress a person perceives in the environment and this has a direct effect on how events are appraised. Thus the individual is more likely to appraise a situation as being stressful, which leads the person to report lower levels of psychological well-being. As previously discussed, an area of contention is whether higher reported scores reflect actual changes in psychological well-being or whether high scores merely reflect a bias effect in which respondents report higher distress, regardless of whether any changes in psychological well-being actually occur. However, given that NA have been shown to play both a moderating and mediating role in the stressor/ strain relationship (Moyle, 1995), it is reasonable to conclude that NA does have a substantive effect (Spector, Zapf, Chen & Frese, 2000).

Several limitations of the present study should be considered. First, the study was cross-sectional in nature. This design limits the conclusions that can be drawn with regard to causality amongst the variables. This is particularly restrictive, given that a mediational relationship was being tested. At present, causality can be inferred through theoretical means due to the presumed stability of NA as a dispositional trait. To thoroughly test this model, longitudinal data are required. These are currently being collected as an extension of this study. Second, the way in which reported stressors were quantified is a potential drawback. Categorising stressors simply as organisational and mental health related, is possibly too broad to adequately account for potential differences that might influence the way in which people appraise events. This is perhaps an inevitable consequence when attempting to collect phenomenological data of actually occurring events. The alternative is to provide participants with hypothetical events and ask them to respond as if they were in the situation; however, this method is also accompanied by a number of methodological concerns (Smith & Lazarus, 1992).

The present study draws attention to the need for a more comprehensive model of stress and appraisal that takes individual dispositional variables into account. Although some researchers have argued that stress appraisals and outcomes are situational specific and dependent on the nature of the event, the findings presented here indicate that, as a stable dispositional variable, negative affectivity is important in determining these appraisals and outcomes. Of interest for future research is how other individual dispositional variables influence cognitive appraisal in this process (for example, the locus of control variable, see Anderson, 1977; Parkes, 1984). Finally, this study also assists with understanding the factors which contribute to individual vulnerability or susceptibility to stress.

Individuals with high levels of negative affectivity are more likely to appraise an event as being more stressful, in contrast to individuals with lower levels of negative affectivity. Individuals respond to stressful events in different ways and this study provides one possible pathway for how this difference may eventuate.

What then of the practical implications of research such as this? First, anything that contributes to our understanding of factors that contribute to occupational stress will be of utility. With an increasing awareness of the costs of occupational stress in New Zealand (through a number of recent highly publicised litigation cases, for example), employers are being forced to address this issue. To date, this has often meant the introduction of broad stress management programmes, which are often of limited and short-term value (Briner, 1997). This is often a consequence of a lack of specificity in tailoring programmes to individuals. The findings presented here suggest that, as they tend to report more stress, high NA individuals are perhaps more suitable targets for intervention. Particular attention should be given to the appraisals these individuals make, as it appears that cognitive appraisal is instrumental in producing stress. Any intervention programme seeking to reduce the effects of stress would be helped by the inclusion of a component that addresses stress appraisals.

## References

- Anderson, C. R. (1977). Locus of control, coping behaviours and performance in a stress setting: a longitudinal study. *Journal of Applied Psychology, 62*, 446-451.
- Anderson, W. J. R., Cooper, C. L., & Willmott, M. (1996). Sources of stress in the National Well-being Service: A comparison of seven occupational groups. *Work and Stress, 10*, 88-95.
- Anshel, M. H., Robertson, M. & Caputi, P. (1997). Sources of acute stress and their appraisals and reappraisals among Australian police as a function of previous experience. *Journal of Occupational and Organizational Psychology, 70*, 337-357.
- Banks, M. H., Clegg, C., Jackson, P. R., Kemp, N. J., Stafford, E. M. & Wall, T. D. (1980). The use of the General Well-being Questionnaire as an indicator of mental well-being in occupational studies. *Journal of Occupational Organizational Psychology, 53*, 187-194.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Biggam, F. H., Power, K. G., & MacDonald, R. R. (1997). Coping with occupational stressors of police work: A study of Scottish officers. *Stress Medicine, 13*, 109-115.
- Bogg, J., & Cooper, C. L. (1995). Job satisfaction, mental well-being, and occupational stress among senior civil servants. *Human Relations, 48*, 327-341.
- Brief, A. P., Burke, M. J., George, J. M., Robinson, B. and Webster, J. (1988). Should negative affectivity remain an unmeasured variable in the study of job stress? *Journal of Applied Psychology, 73*, 193-198.
- Briner, R. B. (1997). Improving stress assessment: toward an evidence-based approach to organizational stress interventions. *Journal of Psychosomatic Research, 43*, 61-71.

- Caplan, R. D., Cobb, S., French, J. R. P., Van Harrison, R. & Pinneau, S. R. (1980). *Job demands and worker well-being*. Ann Arbor, MI: Institute for Social Research.
- Chen, P. Y., & Spector, P. E. (1991). Negative affectivity as the underlying cause between stressors and strains. *Journal of Applied Psychology*, 76, 398-407.
- Cooper, C. L., & Branwell, R. S. (1992). Predictive validity of the strain components of the occupational stress indicator. *Stress Medicine*, 8, 57-60.
- Cooper, C. L., Sloan, S. & Williams, S. (1988) *The Occupational Stress Indicator*, Wilson: NFER-Nelson.
- Costa, Jr, P.T., & McCrae, R.R. (1990). Personality: another 'hidden factor' in stress research. *Psychological Inquiry*, 1, 22-24.
- Eysenck, H. J. (1991). *Type A behaviour and coronary heart disease: the third stage*. In M. J. Strube (Ed.), *Type A behaviour*. Sage, Newbury Park.
- Eysenck, H. J., & Eysenck, S. B. G. (1968). *Manual for the Eysenck Personality Inventory*. San Diego, CA: Educational and Industrial Testing Service.
- Eysenck, S. B. G., Eysenck, H. J. & Barrett, P. (1985). A revised version of the psychoticism scale. *Personal and Individual Differences*, 6, 21-29.
- Folkman, S., & Lazarus, R. (1980). An analysis of coping in a middle aged sample. *Journal of Well-being and Social Behaviour*, 21, 219-239.
- Folkman, S., Lazarus, R., Dunkel-Schetter, C., DeLongis, A. & Gruen, R. J. (1986). Dynamics of a stressful encounter: cognitive appraisal, coping and encounter outcomes. *Journal of Personality and Social Psychology*, 50, 992-1003.
- Fortunato, V. J., Jex, S. M. & Heinisch, D. A. (1999). An examination of the discriminate validity of the Strain-Free Negative Affectivity scale. *Journal of Occupational and Organizational Psychology*, 72, 503-515.
- Gallagher, D. J. (1990). Extraversion, neuroticism, and appraisal of stressful academic events. *Personality and Individual Differences*, 11, 1053-1057.
- Ganster, D. C., Fusilier, M. R. & Mayer, B. T. (1986). Role of social support in the experience of stress at work. *Journal of Applied Psychology*, 71, 102-110.
- Goldberg, D. (1978). *Manual of the general well-being questionnaire*. Windsor: National Foundation for Educational Research.
- Haney, J. N. (1973). Approach-avoidance reactions by repressors and sensitizers to ambiguity in a free-association task. *Psychological Reports*, 33, 97-98.
- Hemenover, S. H. & Dienstbier, R. A. (1996). Prediction of stress appraisals from mastery, extraversion, neuroticism, and general appraisal tendencies. *Motivation and Emotion*, 20, 299-317.
- Jex, S. M. & Spector, P. E. (1996). The impact of negative affectivity on stressor-strain relations: a replication and extension. *Work & Stress*, 10, 36-45.
- Lazarus, R. S. (1991). *Emotion & Adaptation*. New York: Oxford University Press.
- Lazarus, R.S., & Folkman, S. (1984). *Stress, Appraisal and Coping*. Springer Publishing Company: New York.
- Larsen, R.J. (1992). Neuroticism and selective encoding and recall of symptoms: evidence from a combined concurrent-retrospective study. *Journal of Personality and Social Psychology*, 62, 480-488.
- Lu, L., Shiau, C., & Cooper, C. L. (1997). Occupational stress in clinical nurses. *Counselling Psychology Quarterly*, 10, 39-50.
- Moyle, P. (1995). The role of negative affectivity in the stress process: tests of alternative models. *Journal of Organizational Behavior*, 16, 647-668.
- O'Brien, G. E. (1983). Locus of control, work and retirement. In H. M. Lefcourt (Ed.), *Research in Locus of Control*, vol. 3. New York: Academic Press.
- Parker, S.K., Wall, T.D. & Myers, C. (1995). The effects of a manufacturing initiative on employee jobs and strain. In Robertson, S.A. *Contemporary Ergonomics*. Taylor & Francis: London.
- Parkes, K. (1984). Locus of control, cognitive appraisal and coping in stressful episodes. *Journal of Personality and Social Psychology*, 46, 655-668.
- Peacock, E. J. & Wong, P. T. P. (1990). The stress appraisal measure (SAM): a multidimensional approach to cognitive appraisal. *Stress Medicine*, 6, 227-236.
- Robertson, I. T., Cooper, C. L., & Williams, J. (1990). The validity of the occupational stress indicator. *Work and Stress*, 4, 29-39.
- Shewchuk, R. M., Elliot, T. R., MacNair-Semands, R., & Harkins, S. (1999). Trait influences on stress appraisal and coping: an evaluation of alternative frameworks. *Journal of Applied Social Psychology*, 29, 685-704.
- Smith, C. A., & Lazarus, R. S. (1993). Appraisal components, core relational themes, and the emotions. *Cognition and Emotion*, 7, 233-269.
- Smith, T. W., & Rhodewalt, F. (1986). On states, traits, and processes: A transactional alternative to the individual difference assumptions in Type A behavior and physiological reactivity. *Journal of Research and Personality*, 20, 229-251.
- Spector, P. E., Zapf, D., Chen P. Y., & Frese, M. (2000). Why negative affectivity should not be controlled in job stress research: don't throw the baby out with the bath water. *Journal of Organizational Behavior*, 21, 79-95.
- Warr, P. B. (1987). *Work, Unemployment, and mental well-being*. Oxford: Oxford University Press.
- Watson, D., & Clarke, L. A. (1984). Negative affectivity: the disposition to experience aversive emotional states. *Psychological Bulletin*, 96, 465-498.
- Watson, D., & Pennebaker, J. W. (1989). Health complaints, stress and distress: exploring the central role of negative affectivity. *Psychological Review*, 96, 234-254.
- Watson, D., Pennebaker, J. W., & Folger, R. (1987). Beyond negative affectivity: measuring stress and satisfaction in the workplace. *Journal of Organizational Behavior Management*, 8, 141-157.

### Acknowledgement

This project was completed with the assistance of a research grant provided by the Richmond Fellowship Inc.

### Address for correspondence:

Joseph Oliver  
School of Psychology  
Victoria University of Wellington  
P. O. Box 600  
Wellington, New Zealand

Email: oliverjose@scs.vuw.ac.nz