The Role of Work-Stress Appraisals Among

Female Clerical Workers

by

Jodi E. Morris

B.A., University of British Columbia (1996)

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIRMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

(Department of Educational and Counselling Psychology, and Special Education)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

July, 1999

Abstract

The purpose of this study was to clarify the role of appraisal in the stress and coping process by examining

both antecedents and consequences of appraisals from the perspective of a transactional model of stress

(Lazarus & Folkman, 1984). Analyses were conducted on a sample of female clerical workers (Study 1; $\underline{N}$ =

215) and partially replicated on a second sample (Study 2; $\underline{N}$ = 201). Hierarchical multiple regression analyses

(HMRs) were conducted to examine the relationship between personal resources (e.g., optimism, self-

efficacy), social resources (e.g., social support, supervisor support) and work-stress appraisals (primary and

secondary appraisals), as well as between appraisals and depression. Study 2 expanded on Study 1 in that the

effects of negative affectivity (NA) were controlled for in HMRs predicting appraisals. In addition, the effects

of NA and initial levels of depression were controlled for in HMRs predicting depression. In both studies

appraisals accounted for a significant amount of the variance in depression scores beyond that accounted for

by demographics and resources; and in Study 2, NA and initial levels of depression. Results offer weak to

modest support for the role of appraisals as suggested in Lazarus and Folkman's model. Implications for

theory and counselling practice are discussed.

Table of Contents

List of Tables

List of Figures

DEDICATION

I would like to dedicate this paper to my parents, Bob and Eileen Morris, for all their love, encouragement and support. Thank-you for always believing in me.

ACKNOLEDGEMENTS

Introduction

The appraisal construct is central to Lazarus and Folkman's (1984) transactional model of stress and coping, which emphasizes the importance of the on-going transaction between appraisal and coping to determine outcome. According to Lazarus and Folkman, it is the appraisal process that determines individual susceptibility to stress. Appraisal refers to the process by which an individual evaluates whether an event is significant to his or her well-being. Appraisals reflect an evaluation of the importance of the stressful situation or what it at stake (primary appraisals), and an evaluation of available coping options and resources for dealing with the stressful situation (secondary appraisals). In contrast to Lazarus and Folkman's transactional model, other models of stress have emphasized individual differences and resources in determining coping and health outcomes (e.g., Hobfoll, 1989; Spielberger, 1966, 1972). Although, the appraisal construct is integral to transactional approaches to stress, appraisals have been the subject of less research than other constructs in Lazarus and Folkman's model (e.g., coping strategies). As a result, there remains confusion over the role of appraisal in the stress process (e.g., what gives rise to appraisals). Thus, the purpose of the present study is to clarify the role of appraisal in the stress and coping process by examining both antecedents and consequences of appraisals.

A number of researchers have criticized the appraisal construct (e.g., Hobfoll, 1989), while others have pointed out limitations to its operationalization and measurement (e.g., Munroe & Kelly, 1995). For example, appraisals are often measured with single-item ad-hoc measures. Moreover, problems also exist concerning the discriminant validity of the appraisal construct. For example, research has indicated that negative affectivity (NA) predicts many of the same psychological and physiological outcomes as appraisal (e.g., Decker & Borgen, 1993). Some researchers have argued that the effects of appraisal on outcome are primarily due to NA, as studies have found that the effects of appraisals are attenuated when NA is partialled out (e.g., Brief, Burke, George, Robinson, & Webster, 1988). However, other studies have found that appraisals predict outcome even after controlling for NA (e.g., Chen & Spector, 1991). Still other researchers suggest that the role of NA in the stress process may even be more complex. For example, a recent study by Portello (1996) of managerial women coping with work stress found that NA attenuated some relationships while strengthening others. For both theoretical and clinical reasons it is important to know whether it is appraisal that influences psycho-social outcomes, or some other underlying trait or state such as NA. At present, however, little is known about the underlying forces influencing stress appraisals. The present study considers the validity of the appraisal construct by examining a number of possible antecedents of appraisals, as well as the relationship between

appraisals, their antecedents, and depression in a sample of female clerical workers from the perspective of a transactional model of coping.

Clerical workers make up approximately one quarter of the population of working women in Canada (Statistics Canada, 1995). Research on clerical workers suggests that they are confronted with a range of stressors because as an occupational group they have little power, autonomy, or control over their work environment (Balshem, 1988), they are confronted by multiple tasks of a dull, repetitive nature (Truss, 1993), have fewer opportunities for job advancement, and lower salaries (Turnage & Spielberger, 1991). Furthermore, clerical workers make up the highest percentage of time-loss stress injuries and mental health claims in Canada. In 1990, of the 156 claims for stress loss injuries that were accepted by provincial Worker's Compensation Boards and Commissions across Canada, 88 (48%) were made by those employed in clerical and sales occupations (Green, 1992). Given the diversity of stressors experienced by clerical workers, and the fact that they are an over-represented yet under-researched segment of the female labour force, they are a particularly good population in which to examine the stress and coping process, and in particular the role of stress appraisals.

According to Lazarus and Folkman (1984), appraisals are influenced by a variety of factors such as an individual's coping resources, commitments, values, and beliefs. Most research on appraisal antecedents has focused on just one or two constructs (e.g., optimism; Chan, 1998) or on latent constructs (e.g., agentic traits; Long, 1998). Few studies have examined multiple constructs and their relationship to appraisals. However, research has found that there are a number coping resources that are potentially important determinants of appraisals. Coping resources refer to the relatively stable personal (personal resources) and social factors (social resources) that influence how individuals manage life crises and transitions (Moos & Schaefer, 1993). Examples include social support (House, 1981), self-efficacy (Banudra, 1986), socioeconomic status (Adler et al., 1994), and dispositional optimism (Carver & Gaines, 1987).

Researchers have identified a number of personal resources related to work-related stress appraisals. For example, in a study of work stress, Long et al. (1992) found that agency, a latent construct (i.e., self-efficacy, instrumentality, optimism, and preventative coping), was associated with more positive stress appraisals among a sample of managerial women. However, because the relationship between these resources and appraisals was measured as part of a latent construct, it is not clear to what extent these variables independently accounted for the relationship with appraisals. Research also supports a relationship between sex role orientation and stress appraisals; however, the direction of this relationship is not clear. For example, Long et al. (1992) found that instrumentality, characterized by masculine characteristics (Bem, 1981), was related to more positive stress appraisals, whereas Portello (1996) found that

instrumentality was associated with more negative stress appraisals. The discrepant findings may be due to the different operationalization of the construct in the two studies or to the fact that Portello's study focused on just interpersonal stressors. The present study considers a number of personal resources (including dispositional optimism, general self-efficacy, instrumentality, expressivity, and preventive coping) as possible antecedents of appraisals.

Social resources may also be important determinants of appraisals. For example, the results of a longitudinal study of community residents (Dunkel-Schetter, Folkman, & Lazarus, 1987) indicated that various types of social support (informational support, aid, emotional support, and number of sources of support) were directly related to a number of different primary appraisals (e.g., threat to self-esteem, health, etc.). Social support seems to be a particularly important predictor of appraisals of threat to self-esteem. Participants who reported higher levels of social support on all four indices, including informational support, aid, emotional support, and a number of sources of support, also reported lower levels of threat to self-esteem in response to a specific stressful event. Moreover, research suggests that social support is an important predictor of appraisals in work contexts. For example, Long (1998) found that support from co-workers and supervisors was predictive of more positive stress appraisals among a sample of working women.

Although the research on the relationship between social support and stress appraisals is fairly consistent, the literature examining the relationship between social support and health outcomes is mixed. Most studies seem to support a positive relationship between support and health outcomes (e.g., Decker & Borgen, 1993; Repetti, 1987). However, a number of studies have failed to show any relationship (e.g., Snapp, 1992), and some studies have even found an inverse relationship (e.g., Cutrona, 1990; Hobfall & Vaux, 1993). A number of explanations have been put forth to explain this phenomenon. One explanation comes from the matching model of social support (Cohen & McKay, 1985). According to this model, in order for social support to buffer the effects of stress, the support resources offered need to fit the need of the individual under stress. If there is a mismatch between the support given and the needs of the individual, the support attempt may miscarry. Another explanation put forth by Lepore (1997) is that social support networks in themselves may be exhausting or stressful. This explanation may be particularly applicable to the mixture of findings regarding the effects of co-worker support (e.g., Repetti, 1987). For example, in many cases clerical workers are not only coping with their own work stress but also support and deal with the stress of their coworkers, which can make their social support networks stressful. Thus, the relationship between social support and appraisals may be more complex than initial research suggests. In the present study, the relationship between a number of social resources, including general social support and support from co-workers and supervisors, and appraisals is investigated.

Another fruitful area of exploration in gaining a deeper understanding of the appraisal construct involves examining how antecedents relate differentially to primary and secondary appraisals. Theory would predict that resources would be more strongly related to secondary appraisals as they depend to a greater extent on an individual's evaluation of their resources and options for coping than do primary appraisals (Lazarus & Folkman, 1984). There is some empirical support for Lazarus and Folkman's theoretical distinction between primary and secondary appraisals. For example, in a study of 726 college students who were coping with the stress of an exam, Chan (1998) found that dispositional optimism as measured by the Life Orientation Test (LOT; Scheier & Carver, 1985) was unrelated to primary appraisals but was significantly related to secondary appraisals. Chan concluded that both optimists and pessimists appraise the same stressor as threatening, but that optimists see more options for coping. Therefore, I predicted that personal (optimism, self-efficacy, instrumentality, expressivity, preventive coping) and social resources (general social support, peer support, supervisor support) should relate more strongly to secondary appraisals than primary appraisals.

Yet another area of exploration involves the extent to which resources and appraisals predict psycho-social outcomes. Lazarus and Folkman (1984) posit that resources influence appraisals, which in turn determine coping choices and health outcomes. In their model, individual differences are considered only to the extent that they impact appraisals. A number of researchers have criticized this approach to stress, arguing that there is an overemphasis on stress appraisal and a lack of emphasis on resources that aid in stress resistance. For example, Hobfoll (1989) argues that the gain and loss of resources is more important in determining health outcome than are appraisals. Again, this raises the question of the validity of the appraisal construct. To what extent do appraisals predict psychological health outcomes (e.g., depression) after controlling for the effects of resources? Furthermore, to what extent do resources and appraisals interact to determine individual differences in health outcomes. Parkes (1994) has suggested that resources and appraisals not only have direct effects on occupational health but also interact to predict health outcomes. Interactive models may help to identify certain combinations of resources and appraisals that serve as vulnerability or resistance factors. The present study considers both the direct and moderated effects of resources and appraisals on depression. Depression was chosen as an outcome measure over other psychological or physiological measures because it has been used most frequently in the stress and coping literature, thus facilitating comparison with other studies (e.g., Long, 1998).

In sum, though appraisals are central to Lazarus and Folkman's (1984) theoretical framework of psychological stress, little in know about their antecedents or consequences. The present study attempts to expand our understanding

of the appraisal construct by examining a number of personal and social resources (antecedents) and their relationship to primary and secondary appraisals, as well as the main and moderated effects of resources and appraisals on depression. Data for the present study are archival and were collected as part of two larger studies on clerical stress and coping (Long, 1999). Thus, the variables in the present study were restricted to those included in the original studies. Though many of the constructs measured in the two studies were similar, some measures differed. Consequently, analyses were conducted on one sample (Study 1) and were partially replicated on the second sample (Study 2). Study 2 expanded on Study 1 in important ways. First, NA was controlled for in analyses predicting appraisals, and NA and baseline depression scores were controlled for in analyses predicting depression. Second, appraisals were more fully operationalized in Study 2 as stakes were assessed with appraisal scales designed specifically for their relevance to work settings (Portello, 1996), rather than by single items. However, replication of results from the two studies was expected as the two samples were not expected to differ in terms of demographic characteristics and mean levels on dependent and independent variables.

Due to the exploratory nature of the study research questions are posed rather than hypotheses although some predictions are made based on theory. The research questions are as follows:

1. To what extent are personal resources (dispositional optimism, general self-efficacy, instrumentality, expressivity, and preventive coping) related to primary and secondary appraisals after controlling for demographic characteristics (age, marital status, and education) ? I would expect these resources to be more strongly related to secondary appraisals than to primary appraisals because theory suggests that secondary appraisals rely to a greater degree on an individual's evaluation of their resources.

2. To what extent are social resources (general social support, co-worker social support, and supervisor support) related to primary and secondary appraisals? I would also expect that social resources would be more strongly related to secondary appraisals for the reason stated above.

3. To what extent do appraisals predict depression after controlling for personal and social resources and demographic characteristics?

4. Do appraisals moderate the relationship between resources and depression?

Study 1

Method

Participants. Participants were 215 clerical workers and administrative assistants recruited from the Greater Vancouver area. The mean age of the women was 39.77 (SD = 9.46, range 22 to 63 years) and their household incomes

ranged from less than 25,000 Canadian dollars per annum (23.4%) to over 61,000 (27.5%). Fifty-three percent of the clerical workers were married, 22% were single, and 25% were divorced or separated. Fifty-three percent of the women were parents. On average, the women had completed 13.33 years of education, had been in workforce for 17.02 years, with their organization for 5.94 years, and in their present position for 4.63 years. The major industries represented were Education (31%), Service (35%), Utilities and Public Administration (12%), Manufacturing and Transportation (10%), and other (8%). Ninety-eight percent of the clerical workers were Caucasian. See Appendix A for a table of personal and work demographics for Study 1. More details on sample can be found in Long (1998).

Design and Procedures

Newsletter advertisements, posters, radio announcements, and networking were used to recruit participants. Advertisements were directed to full-time female clerical workers who experience work stress on a regular basis. Interested individuals were screened to make sure they met study criteria (i.e., they worked at least 20 hours a week, had no supervisory duties, and experienced work stress on a regular basis). Of the 284 that met the criteria, 273 began the study. They were told what the study would involve in terms of time commitment, were informed that their participation was completely voluntary, and were assured that all information collected would be treated as confidential. Participants were mailed a package containing a consent form, a set of three questionnaires, and detailed instructions for completing the measures. Of the 273 participants who were mailed questionnaire packages, 39 withdrew because of a lack of time, 7 no longer met study criteria, 4 moved, and 8 were excluded from the analyses because they identified personal rather than work-related stressors. Chi square analyses and ANOVAs of demographic variables between drop out and retained participants were not significant (Long, 1998).

Participants were instructed to fill out the consent form and the first questionnaire booklet as soon as they received them and to mail them back in an enclosed stamped envelope. Only measures used in the present study are described. Booklet one included; (a) demographic questions, (b) a preventative coping inventory, (c) a dispositional optimism measure, (d) a measure of self-efficacy scale, (e) a measure of social support, (f) a measure of sex role orientation. If booklet one was not received back with in 10 days of the package mail-out, participants were given a reminder call.

One-month after the first booklet was completed, participants were contacted by a research assistant and asked to complete and mail back the second questionnaire package. Participants engaged in a short telephone interview with a research assistant at which time they were asked to recall their most salient work stressor of the past month. After recording their stressor in the questionnaire booklet, participants proceeded to fill out the remainder of the questionnaire keeping their stressor in mind. Booklet two included: (a) measures of primary and secondary appraisals, (b) a measure

of the work environment, and (c) a measure of depression. The same procedure was repeated for the third questionnaire booklet. In the present study, only data from Time I and Time 2 were analyzed. Resources were assessed at Time 1 (with the exception of the work and peer support) and appraisals and outcome at Time 2.

<u>Time 1 Measures</u>

<u>Demographics and background information.</u> Participants were asked to provide information regarding age, education, income, parental and marital status, years (months) employed in present position, years (months) with present organization, and classification of organization (service, education etc.).

<u>Self-efficacy.</u> The General Self-Efficacy scale (GSES) was used to assess expectancies of general self-efficacy (Sherer et al., 1982). The GSES consists of 17 items rated on a 7-point Likert scale ranging from 1= <u>strongly agree</u> to 7 = <u>strongly disagree</u>. Participants are asked to indicate to what extent they agree with each of the statements that reflect beliefs of personal agency. Scores are summed and range from 17 to 119 with higher scores indicating greater self-efficacy. Evidence for internal consistency (Cronbach alpha = .86) as well as construct validity and criterion validity have been reported (Sherer et al., 1982). Long and Haney (1988) reported a test-restest reliability of .76 for a one-year interval.

<u>Preventative Coping.</u> Preventative coping was assessed using a subscale from a coping inventory developed by Wong and Recker (1983). The subscale consists of 6 items and is used to measure the extent to which respondents try to promote well being and reduce the likelihood of anticipated or potential problems (e.g., <u>learn to prevent myself from getting anxious or tense</u>). Respondents are asked to report to what extent they use each strategy on a 4-point Likert scale ranging from 0= <u>not used</u> to 3 = <u>used a great deal</u>. Items are summed and total scores range from 0 to 18 with higher scores indicating greater preventive coping efforts. Wong and Recker have provided support for the predictive validity of the subscale (Wong & Recker, 1983).

<u>Optimism.</u> Optimism was measured using the Life Orientation Test (LOT) developed by Scheier and Carver (1985). The LOT consists of 12 items, 4 of which are fillers, to assess an individual's expectation of positive outcomes (e.g., <u>In uncertain times, I usually expect the best</u>). Respondents are asked to rate the extent to which they agree or disagree with each statement on a 5-point scale ranging from 0 = <u>strongly disagree</u> to 4 = <u>strongly agree.</u> Items are summed with higher scores representing greater optimism. Scheier and Carver (1985) have reported a 4-week test-retest reliability of .79 and a Cronbach alpha of .82, and Scheier, Carver and Bridges (1994) have provided evidence for the discriminant and predictive validity.

Sex Roles. The Bem Sex Role Inventory (BSRI, Bem, 1974) was used to measure traits of instrumentality and expressivity. Respondents are asked to rate the extent to which they identify with the 20 positive instrumental adjectives (e.g., self-reliant, competitive), 20 positive expressive adjectives (e.g., conscientious, sympathetic), and 20 neutral adjectives (neither masculine or feminine) on a 7-point scale ranging from 1= never or almost never true of me to 7= always or most always true for me. Responses on each of the 20-item masculine and feminine sub-scales were summed to derive a total score for instrumentality and a total score for expressivity. The higher the score the greater the attribute. Bem (1974) has reported test-retest reliabilities from .76 to .94 and provided evidence for the convergent and discriminant validity of the BSRI.

Social support. Social support was measured using the revised Kaplan Social Support Scale (Turner, Frankel, & Levin, 1983). This scale measures an individual's experience of feeling loved, esteemed, and connected to a social network. Each item of the 9-item scales has three descriptions of individuals and their experience of support (e.g., Delores rarely has a close friend that she can count on. She does not know that they will be there for her to lean on and she does not support them; Jenny sometimes has a close friend who is there for her and who she can count on; Shelly always has a close friend that she can count on. She does not have to worry whether they will be there for her to lean on. She gives them the same support). After reading each description, respondents are asked to indicate whether their experience fits one of the descriptors or whether they would rate their experience as halfway between two of the descriptors (e.g., I am like Jenny or I am halfway between Jenny and Delores, etc.). Descriptions are assigned a code of 1 to 5 with higher scores representing a greater experience of support. Item scores are aggregated to yield a total score ranging from 9 to 45. Reports of internal consistencies range from .81 to .83, and correlations with various single indices of the presence and utilization of social resources (e.g. the presence of a confidant) are moderate (Turner et al., 1983).

Time 2 Measures

Primary appraisals. Primary appraisals were assessed using individual items developed by Folkman and Lazarus (1980) and Park (1986). Participants were asked to rate how important (1 = extremely important to 5 = not very important), how expected (1 = completely unexpected to 4 = completely expected), and how upsetting (1 = not very upsetting to 5 = extremely upsetting) their stressful event was for them. Other studies have provided support for the validity of these items (e.g., Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Long et al., 1992).

Stakes were measured using items reported by Folkman and Lazarus (1980). Participants were asked to rate the extent to which each item was at stake in their stressful encounter from 1 = does not apply to me to 5 = applies a great

deal. A self-esteem stake identified through factor analysis (Folkman & Lazarus, 1980) contained 5 items, such as losing your self-respect or appearing incompetent. Items were summed with higher scores representing a greater threat to self-esteem. The other stake, a threat to work competence, was assessed using a single item not achieving an important goal at your job or in your work.

Secondary appraisal. Secondary appraisal was assessed using three items from Folkman and Lazarus (1980). Participants are asked to rate the extent to which they felt their stressful event was one that they could change or do something about, one that they could accept, and how much control they felt they had to deal with the situation on a 5-point scale (1 = not at all and 5 = a great deal). For the present study a principal components factor analysis revealed that all three items loaded on one factor, so items were summed to form a scale. See Appendix B for factor loadings.

Social support at work. Clerical workers' perceptions of work-related support from co-workers and supervisors was assessed using the Peer Cohesion (PC) and Supervisor Support (SS) subscales of the Work Environment Scale (Moos, 1981). Respondents were asked to rate whether they felt each statement as true or false for their work environment (0 = definitely false and 1 = definitely true). Higher scores reflect the perception of a more supportive environment. The two subscales have acceptable internal consistency (PC =.67; SS=.77; Moos, 1981) and are related to both traditional support measures and to instruments assessing depression and psychotic symptoms (Holahan & Moos, 1982).

Depression. Depression was measured using a 13-item sub-scale from the Symptom Check List-90-R (SCL-90-R; Derogatis, 1983). Respondents were asked to indicate on a 5-point scale ranging from 0 = not at all to 4 = extremely the extent to which they felt distressed over the past week by each item that represents a problem or a complaint. Derogatis and Melisaratos (1983) have reported a test-retest reliability of .84 for the depression sub-scale. Scores range from 0 to 52 with higher scores representing greater levels of depression.

<div align="center">Results</div>

Prior to analyses, descriptive statistics and frequencies were examined to ensure accuracy of data entry and to check for missing data. Because not more than 30% of items were missing from any of the scales used in the present study, no cases were dropped due to missing data. Data were checked for linearity, normality, homoscedasticity, multicullinearity, univariate and multivariate outliers. Significance tests for skewness and kurtosis revealed that skewness and kurtosis values obtained were not significantly different from zero. Because there were no violations of assumptions, no transformations were made. Means, standard deviations, and alpha coefficients for all dependent and independent variables are reported in Table 1. Pearson product-moment correlations were calculated among appraisals,

Table 1

<u>Means, Standard Deviations, and Reliabilities (Cronbach's alpha) of Study Variables</u>

Observed Variable	Study 1 ($\underline{N}$ = 215)				Study 2 ($\underline{N}$ = 201)			
	Range/ %	<u>M</u>	<u>SD</u>	Alpha	Range/ %	<u>M</u>	<u>SD</u>	Alpha
Age	22-63	39.77	9.46	--	18-63	41.31	9.46	--
Education	1-6	3.11	1.06	--	1-6	3.14	1.06	--
Parents	53%	--	--	--	54%	--	--	--
Married	53%	--	--	--	59%	--	--	--
Expressivity[a]	65-125	97.98	10.18		31-70	56.69	7.46	.85
Instrumentality[a]	54-127	91.74	14.31	.85	22-69	46.81	9.58	.87
Optimism	5-32	20.14	4.96	.79	2-31	19.83	5.27	.84
General Self-Efficacy	54-117	87.26	12.66	.81	40-116	87.96	15.07	.87
General Social Support	15-44	32.19	6.51	.88	15-45	33.56	6.09	.86
Co-worker Support	0-9	5.32	2.29	.69	0-9	5.10	2.48	.78
Supervisor Support	0-9	4.24	2.66	.79	0-9	4.41	2.54	.74
Preventive Coping	0-18	9.90	3.68	.75	4-18	10.53	2.72	.56
Importance Appraisal	1-5	4.15	.88	--	1-5	2.52	1.09	--
Distress Appraisal	1-5	3.49	1.00	--	1-5	3.67	1.00	--
Anticipation Appraisal[b]	1-4	2.55	1.23	--	1-5	2.36	1.32	--
Work Competence Stake[c]	1-5	3.17	1.56	--	5-25	13.43	6.27	.89
Self-esteem Stake[d]	0-25	9.91	4.53	.72	3-15	7.67	3.86	.86
Control Appraisal[e]	3-15	7.29	2.75	.51	3-15	11.01	3.20	.74
Negative Affect	--	--	--	--	10-40	21.12	7.04	.88
Depression Time 1	--	--	--	--	0-51	15.93	10.63	.91
Depression Time 2[f]	0-41	12.58	10.05	.86	0-54	17.75	10.78	.91

<u>Note.</u> Dashes indicate not applicable. Education 1 = less than high school, 2= high school graduate, 3=

some training beyond high school, 4 = 2 year college graduate, 5 = 4 year university degree, 6 = graduate

school. [a] Sex roles were measured with the BSRI in Study 1 and the SBSRI in Study 2. [b] Anticipation

appraisal differed in Study 1 and Study 2. [c] Work competence stake was measured with a single item in

Study 1 and a 5-item scale in Study 2. [d] Self-esteem stake was measured with a 5-item scale in Study 1

and a 3-item scale in Study 2. [e] Control appraisal differed in Study 1 and Study 2. [f] Depression measure

in Study 1 and Study 2 differed.

personal resources, social resources, and demographic variables and are presented in Table 2. In general, zero-order

correlations between criterion and predictor variables were in the low range (rs ranged from .00 to .38) and among

predictor variables in the low to moderate range (rs ranged from .00 to .64). All significant correlations were in the

expected direction.

Resources and Appraisals

To examine the extent to which personal and social resources predict stress appraisals made in response to a

specific work-related stressor, hierarchical multiple regressions analyses (HMRs) were performed where the criterion

was one of the six appraisal variables (appraisal of distress, importance, anticipation, self-esteem stake, work-

competence stake, and secondary appraisals) and the predictors were personal (optimism, general self-efficacy,

preventive coping, instrumentality, and expressivity) and social (general social support, co-worker support, supervisor

support) resources. Marital status, age, and education level were entered as control variables because research has

suggested they influence stress appraisals (Long, 1998; Mayers & Barton, 1991). Demographics were entered in the

first step and social and personal resources were entered in the second step.

Primary appraisals. Three out of the five HMRs predicting primary appraisals (distress, importance, anticipation)

were statistically significant. Results appear in Table 3. The equation predicting an appraisal of distress accounted for

14% of the variance, an appraisal of anticipation 10%, and an appraisal of importance appraisal 10%. For the

regression predicting distress, education (β = -.14, p < .04), optimism (β = -.17, p < .03), efficacy (β = .19, p < .01), and

supervisor support (β = -.18, p < .04), each made a unique contribution suggesting that those with less education, lower

levels of dispositional optimism, lower levels of supervisor support, and greater levels of general self-efficacy reported

higher levels of distress in response to a work-related stressor. For an appraisal of importance, both efficacy (β = .17, p

< .03), and supervisor support (β = -.25, p < .01) made a unique contribution, whereas expressivity (β = -.16, p < .03)

and preventive coping (β = -.17 p < .03) each made a unique contribution to the anticipation appraisal. Results suggest

that those high in general self-efficacy and low in supervisor support saw their stressful event as more important,

whereas those low in expressivity and preventive coping resources were more likely to appraise their stressful event as

one that was anticipated.

Secondary appraisals. The HMR predicting secondary appraisal (control) was statistically significant, F (11, 204)

= 2.43 p < .007, and accounted for 12% of the variance. Results are summarized in Table 3. Marital status (β = .15, p

< .03) and general social support (β = .15, p < .05) each made a unique contribution suggesting that those who are

Table 2

Zero Order Correlations Among Study Variables for Study 1 and Study 2

Variable	Dis	Imp	Ant	SE	WG	Con	Inst	Exp	Opt	CR	Eff	SS	SupS	CoS	Dep2	Age	Mar	Ed	NA	Dep1
Dis	--	33	-09	35	21	-27	00	11	-13	-07	-07	01	-04	-12	32	06	-18	-09	15	25
Imp	46	--	-08	15	12	-16	-05	22	10	06	08	04	-06	-07	07	14	-10	-16	04	04
Ant	-25	-06	--	02	07	-05	07	-12	12	04	04	-06	-05	-11	-11	-01	06	07	-01	-11
SE	20	10	-11	--	57	-10	-10	-05	-25	-12	-24	-13	-09	-09	40	-11	06	01	31	28
WG	29	22	-02	26	--	-11	-07	01	-25	-13	-15	-10	-17	-14	27	-04	16	01	31	22
Con	-29	-20	16	02	-11	--	08	10	15	18	00	12	04	05	04	-11	-02	-08	-04	-08
Inst	06	-04	-09	11	04	08	--	10	24	23	40	26	04	05	-11	-11	-17	09	27	-08
Exp	08	12	12	-02	05	08	-02	--	25	17	16	36	09	04	-21	09	00	-21	-32	07
Opt	-12	-01	-05	05	05	14	19	25	--	36	31	35	07	10	10	08	01	-17	-40	-46
CR	-05	-09	-07	-07	-02	06	12	11	36	--	32	35	-01	10	-21	16	01	09	-33	07
Eff	13	11	-17	-07	02	06	37	13	38	22	--	20	05	01	-26	06	10	-07	-38	-36
SS	-11	-06	-08	-08	-06	23	21	24	42	19	20	--	20	26	-23	04	02	-03	-37	-28
SupS	-23	-18	11	-07	-14	21	-05	09	17	-01	05	16	--	59	-03	-17	07	-07	-02	00
CoS	-20	-09	08	-11	-13	21	-01	07	10	12	01	19	59	--	26	-14	03	01	-38	-36
Dep2	25	14	-11	38	16	-00	01	-05	-26	-18	-13	-33	-20	-21	--	-20	-23	-03	51	61
Age	-01	-02	-05	-17	-05	-11	-11	09	08	16	06	04	-17	-14	-07	--	-20	-07	-04	00
Mar	-01	-00	-00	-05	-11	13	-17	00	01	01	10	02	07	03	-08	03	--	-18	-20	-27
Ed	-13	-12	04	-01	-10	-02	09	-21	-17	09	-07	-03	-07	01	-06	-10	-18	--	02	05
NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dep1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note. Study 1 correlations are presented below the diagonal and Study 2 correlations above the diagonal. Decimals have been omitted. Dis = distress appraisal; Imp = Importance appraisal; Ant = appraisal of anticipation; SE = self-esteem stake; WG = work goal stake; Con = control appraisal; Inst = instrumentality; Exp = expressivity; Opt = optimism; CR = preventive coping resources; Eff = general self-efficacy; SS = social support; SupS = supervisor support; CoS = Co-worker support; Dep2 = Depression Time 2 ; NA = negative affectivity; Dep1 = Time 1 depression scores. High scores represent high levels of characteristic as defined by labels. Dashes indicate not applicable. Marital status 0 = not married and 1 = married. $r_{.05} = 14; r_{.01} = 18; r_{.001} = 21$, two-tailed.

Table 3

HMRs Predicting Appraisals: Study 1

	Criterion Variables					
	Distress	Importance	Anticipation	Self-esteem	Work Competence	Control
	β	β	β	β	β	β
Age	-.06	-.07	.02	-.17*	-.08	-.07
Education	-.14*	-.08	.01	-.06	-.11	.02
Marital Status	-.01	-.02	-.01	-.01	-.09	.15*
$R^2\Delta$	.02	.01	.00	.03	.03	.03
Optimism	-.17*	-.01	.10	.01	.07	.07
Instrumentality	.05	-.08	-.03	.15*	.03	.06
Expressivity	.09	.12	-.16*	.01	.04	.05
Preventive Coping	-.01	-.11	-.17*	-.02	-.02	-.01
Self-efficacy	.19*	.17*	-.13	-.10	.02	-.04
Social Support	-.08	-.05	-.04	-.07	-.09	.15*
Supervisor Support	-.18*	-.25*	.10	-.02	-.12	.10
Peer Support	-.08	.07	.05	-.11	-.05	.09
$R^2\Delta$	.12*	.09*	.10*	.04	.04	.09*
Total R^2	.14	.10	.10	.07	.07	.12
Adjusted R^2	.09	.05	.05	.02	.01	.07
F (11, 204)	2.97**	2.01*	2.03*	1.49	1.21	2.43*

Note. $N = 215$. Entries are standardized beta coefficients. Marital status; 0 = not married, 1 = married.

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

married and high in social support appraised their work stressor as more controllable.

<u>HMRs Predicting Depression</u>

   <u>Main effects.</u> In order to test the extent to which appraisals predict depression after controlling for the effects of

demographic characteristics and resources, a HMR was conducted where depression was the criterion and

demographics, resources, and appraisals were the predictors. Demographic variables were entered on the first step,

personal and social resources in the second step, and appraisals in the third step. The HMR accounted for 32% of the

variance in depression scores with each step making a unique contribution to the variance. Results are summarized in

Table 4. The first step, consisting of demographic variables, accounted for 4% of the variance ($\underline{R}^2\Delta = .04$, $\underline{p} < .05$) with

no variable making a unique contribution. The second step, which included the personal and social resources

(optimism, self-efficacy, preventive coping, instrumentality, expressivity, social support, supervisor support, co-worker

support), accounted for an additional 16% of the variance in scores ($\underline{R}^2\Delta = .16$, $\underline{p} < .05$) with a unique contribution

being made by social support ($\underline{\beta} = -.23$, $\underline{p} < .05$). Higher levels of social support were associated with lower levels of

depression. The final step consisting of primary and secondary appraisals accounted for an additional 13% of the

variance in scores ($\underline{R}^2\Delta = .13$, $\underline{p} < .05$). An appraisal of a threat to self-esteem ($\underline{\beta} = .27$, $\underline{p} < .05$) and secondary

appraisal ($\underline{\beta} = .16$, $\underline{p} < .05$) each made unique contributions, suggesting that that those who reported higher levels of

threat to their self-esteem and greater levels of control in response to a work-related stressor also reported higher levels

of depression.

   <u>Moderated effects of appraisals and resources.</u> To test whether appraisals moderate the relationship between

resources and depression, a series of moderated HMRs were preformed. In order to achieve adequate power, the

number of predictors in the moderated regression analyses were kept to a 1:5 ratio of predictors to participants. Thus,

the moderating effects of each resource was tested separately, resulting in a total of eight HMRs. All categorical

predictor variables were standardized. Thus, unstandardized Betas are reported. Resources and appraisals were entered

in the first step. Moderating effects were tested with multiplicative terms (cross-products) and were entered into the

regression hierarchically after the main effects were entered. Though a number of individual interactions were

statistically significant, only one HMR equation (the moderating effects of social support and appraisals on depression)

reached statistical significance. See Table 5 for results.

   <u>Moderated effects of appraisals and social support on depression</u>. The HMR testing the moderated effects of

appraisals and social support on depression was the only equation in which the step containing the moderated terms

Table 4

HMR Predicting Depression: Study 1

		Depression		
	Std. Error	β	p	R²Δ
Age	.07	-.10	.12	
Education	.60	-.09	.17	
Marital Status	1.25	-.06	.35	.04*
Optimism	.15	-.13	.07	
Instrumentality	.05	.03	.68	
Expressivity	.07	.01	.83	
Preventive coping	.18	-.04	.50	
Self-efficacy	.06	-.07	.33	
Social Support	.11	-.23	.00	
Supervisor Support	.30	-.06	.42	
Peer Support	.34	-.07	.39	.16***
Importance appraisal	.78	.04	.56	
Distress appraisal	.74	.13	.08	
Appraisal of anticipation	.53	-.06	.33	
Self-esteem stake	.14	.27	.00	
Work competence stake	.41	.02	.74	
Control appraisal	.24	.16	.01	.13***
Total R²				.33
Adjusted R²				.26
Overall F (17, 198)				5.54***

Note. N = 215. Entries are standardized beta coefficients. Marital status; 0 = not married, 1 = married.

* p < .10, ** p < .05, *** p < .01

Table 5

Moderated Effects of Appraisals and Resources on Depression: Study 1

	Depression							
	Opt	Ins	CR	Eff	Exp	SS	Sup	CoS
	B	B	B	B	B	B	B	B
R X Dis	1.64*	-.66	.36	-.24	-.15	.99	.03	.46
R X Imp	-1.58**	.43	-.11	-.00	-.57	.04	.04	-.14
R X Ant	.31	.01	-1.54**	.01	-.36	-2.33**	.04	-.15
R X SE	-.70	-.01	-.27	-.93	-.00	-.00	-.04	.17
R X WC	-.18	.16	-.22	.00	.63	.21	-.01	-.35
R X Con	.51	-.31	.56	.01	-.13	-.70	.04	-.15
R²Δ	.03	.00	.03	.01	.01	.05**	.01	.00
Tot R²	.27	.20	.24	.23	.20	.33	23	.21
Adj. R²	.22	.14	.18	.16	.14	.27	.16	.15
F (16, 199)	4.73***	3.12***	4.01***	3.63***	3.15***	6.03***	3.56***	3.39***

Note. N = 215. Entries are unstandardized beta coefficients for the final simultaneous step. Only the step containing moderated terms is presented. The first step contained main effects (age, education, martial status, the resource, and appraisals). R X Dis = resource X distress appraisal; R X Imp = resource X importance appraisal; R X Ant = resource X anticipation appraisal; R X SE = resource X self-esteem stake; R X WC = resource X work competence stake; R X Con = resource X control appraisal; Opt = optimism; Ins = instrumentality; CR = preventive coping resources; eff = self-efficacy; SS = social support; Sup = supervisor support; CoS = peer support.

* p < .10, ** p < .05, *** p < .01

reached statistical significance. Main effects and interactions between social support and appraisals explained 33% of the variance in depression scores. The step containing the moderated terms explained an additional 5% of the variance ($R^2\Delta$ = .05, p < .03) with the interaction between social support and an appraisal of importance making a unique contribution (β = -.21, p < .01). See Figure 1 for the graph of the interaction. The figure shows a strong negative relationship between an appraisal of high importance and depression under conditions of high and low social support. There was no relationship between an appraisal of low importance and depression. The results suggest that the combination of a stressor appraised as highly important coupled with low levels of social support, might increase an individual's susceptibility to stress.

<div align="center">Discussion</div>

The present study examined the extent to which personal and social resources (e.g., optimism, social support) predicted cognitive appraisals made in response to a specific work-related stressor. Results offer modest support for Lazarus and Folkman's model (1984) and their contention that coping resources influence the appraisal process. There were a number of personal and social resources that were significantly associated with appraisals after controlling for the effects of demographics and other resources.

Dispositional optimism, general self-efficacy, and supervisor support were all related to an appraisal of distress. Those who were more optimistic and reported greater levels of social support, reported less distress in response to a work related stressor, whereas those who reported greater levels of self-efficacy reported higher levels of distress. The positive relationship between self-efficacy and the distress appraisal runs contrary to that reported in the literature (Long et al., 1992). Generally, research indicates that coping resources are associated with more positive stress appraisals (e.g., Dunkel-Schetter et al., 1988). However as the data collected were self-report it is difficult to determine whether those who reported high self-efficacy scores are truly efficacious, or whether their reports contain some sort of self-enhancing bias. Research has indicated that measures of self-efficacy are particularly sensitive to bias due to social desirability (Silverthorn & Gekoski, 1995). Furthermore, research indicates that women who self-enhance over react to minor frustrations (Colvin, Block, & Funder, 1995). Thus, it is possible that those that reported high levels of self-efficacy may have been self-enhancers, which may account for the unexpected finding between self-efficacy and an appraisal of distress made in response to a work-related stressor.

There were a number of other resources that were related to appraisals. General self-efficacy and supervisor support were related to an appraisal of importance in that those who were more self-efficacious and had lower levels of supervisor support appraised their stressor as more important. Finally, expressivity and preventive coping were
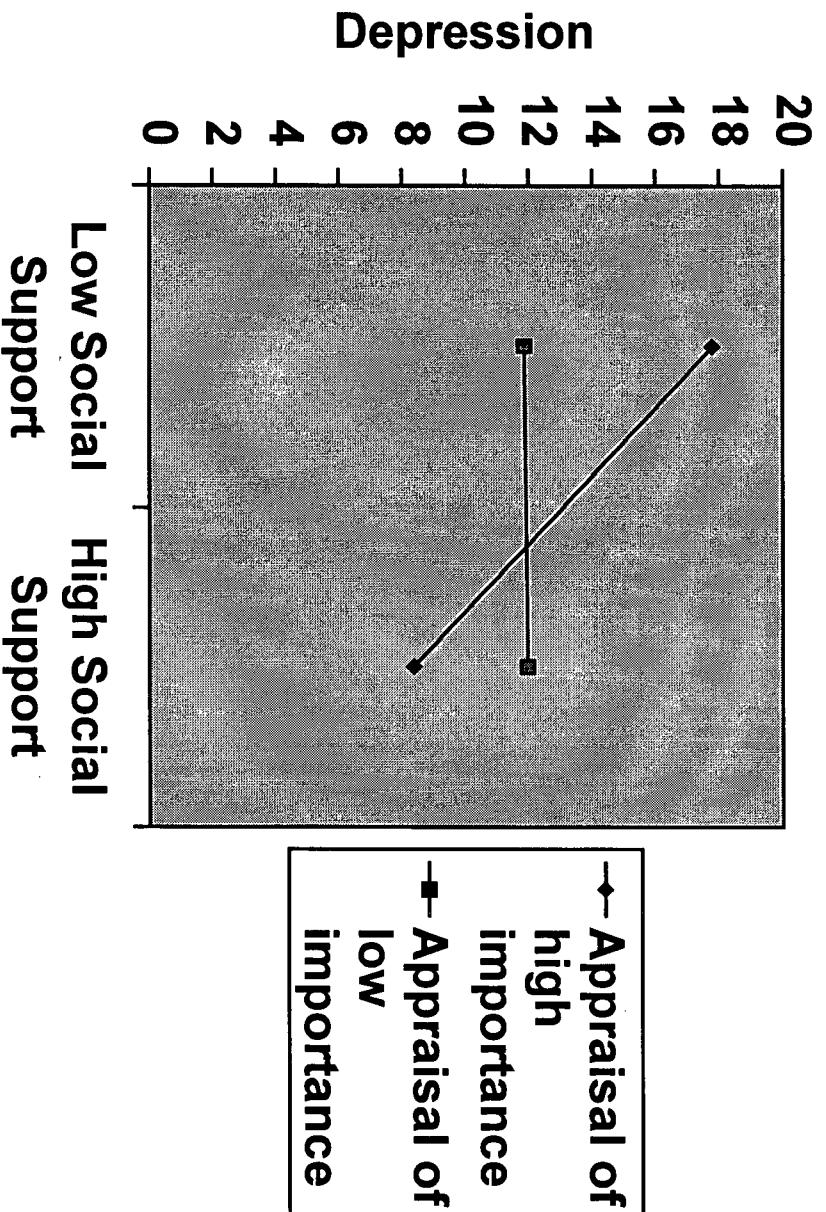
Figure 1. Interaction between social support and an appraisal of importance in predicting depression.

associated with an appraisal of anticipation in that those who were low in expressivity and preventive coping resources were more likely to anticipate their stressor. Although the significant HMRs only accounted for 10 to14% of the variance in appraisal scores, it is not surprising considering the nature of the predicted construct (i.e., a specific appraisal of a work stressor that had occurred in the past month). Although the relationships between resources and appraisals were not strong, results suggest that personal and social resources play a role in the appraisal process and should be taken into account in models of occupational stress and coping.

Although resources were significantly related to a number of primary appraisals (how important, how upsetting, etc.), they were not associated with the two measures of stakes (threat to work competence and self-esteem). These results contradict findings reported by Dunkel-Schetter (1988) who found that social resources were related to a number of different stakes (e.g., threat to self-esteem, health, etc.). The discrepant results may be due to the limited operationalization of stakes in both studies. All stake items in the Dunkel-Schetter study as well as one of the stakes in the present study were measured using single items. As stakes are theoretically important to transactional models of stress (e.g., Dewe, 1991; Monroe & Kelly, 1995) future research should focus on attempting to more fully operationalize them.

The prediction that resources would be more strongly related to secondary appraisal was not supported as resources only accounted for 10% of the variance in secondary appraisal scores. In contrast, resources accounted for up to 14% of the variance in primary appraisals. Furthermore, though a number of resources were related to primary appraisals, only social support was associated with secondary appraisal. These findings run contrary to those reported by Chan (1998) who found that optimism was related to secondary appraisals but not primary appraisals. Chan's findings are also consistent with Lazarus and Folkman's theory (1984), which suggests that resources would be more strongly related to secondary appraisals as the secondary appraisal process depends to a greater degree on an individuals evaluation of their coping resources and options for coping. Although the results in the present study did not support the theoretical distinction between primary and secondary appraisals as offered by Lazarus and Folkman, the results do not necessarily contradict it. The weak relationship between secondary appraisal and resources could be due to the limited operationalization of secondary appraisal in the present study. For example, the secondary appraisal scale in the present study only assessed the extent to which the women felt that they had control over their stressful encounter. Perhaps important aspects of secondary appraisal were not captured. The weak relationships between resources and secondary appraisal may also be due to the low internal consistency of the secondary appraisal scale (r =

.51). At this point it is unclear whether resources are poor predictors of secondary appraisals, or whether the lack of

statistically significant findings is due to the limited operationalization of the secondary appraisal construct.

The present study also considered the extent to which appraisals predict depression after controlling for

demographics and resources. Results indicate that demographic variables, resources, and appraisals are all related to

depression. Support for Lazarus and Folkman's (1984) conceptualization of appraisal was provided as appraisals were

significantly associated with depression after controlling for the effects of demographics and resources. Some

researchers have criticized transactional approaches to stress for their over-reliance on the appraisal construct, and have

suggested that researchers focus greater attention on resources and individual differences in determining susceptibility

to stress (e.g., Hobfoll, 1989). Results from the present study suggest that appraisal is an important construct in

determining vulnerability to stress (i.e., depression) and should not be neglected in favour of focusing on the effects of

individual differences. Though the present study provides evidence for the validity of the appraisal construct, results

should be interpreted with caution. For example, it is possible that NA, or baseline levels of depression, inflated the

relationship between appraisals and depression.

Finally, the present study examined the moderating effects of appraisals and resources in predicting depression.

Only one out of the eight HMRs testing moderated effects was significant (social support and appraisals). The only

interaction to make a unique contribution was the one between an appraisal of importance and social support. Results

suggest that the combination of viewing a stressful event as highly important and having low levels of social support

increase an individual's susceptibility to stress. The lack of significant findings may be due to the low power of

moderated regression equations (Champoux & Peters, 1987). Because the identification of vulnerability and resistance

factors in response to stress is clinically important, future research should focus on moderated effects of stress

appraisals and resources based on theory.

<div align="center">Study 2</div>

Study 2 addressed some of the limitations of Study 1. Results from Study 1 suggest that appraisals account for

additional variance in depression beyond that accounted for by demographic factors and personal and social resources.

However, it has been argued that the effects of appraisal on outcome are primarily due to NA rather than appraisal itself

(Schaubroeck et al., 1992). Consequently, NA was controlled for in Study 2 in order to determine the validity of the

relationships between antecedents, appraisals, and depression. Second, initial levels of depression were controlled for

in Study 2 in order to examine the extent to which resources and appraisals accounted for changes in depression.

Finally, stakes were measured using scales specifically designed for their relevance to work settings rather than by individual items (Portello, 1996). Thus, appraisals were more fully operationalized in Study 2.

Method

Participants. Participants from Study 2 were 201 female clerical workers recruited from the province of British Columbia, Canada. The mean age of the participants was 41.31 years (SD = 9.56, range 18 to 63 years) and their entire household incomes ranged from less than 25,000 Canadian dollars per annum (7%) to greater than $100 000 Canadian dollars per annum (5%). Fifty-nine percent of the participants were married or living with a partner, 20% were separated or divorced, and 21% were single. The women had completed, on average, 13.8 years of education (SD =2.34). Fifty four percent of the women were parents. On average, the women had been in the workforce for 20.59 years, with their organization for 8.30 years, and in their present position for 5.62 years. The major industries represented were Service (45%), Education (36%), Utilities and Public Administration (13%), Manufacturing and Transportation (4%), and other (2%). Eighty-eight percent of the population were Caucasian. See Appendix A for a table of personal and work demographics for Study 2.

Design and procedures. Design and procedures for Study 2 were the same as Study 1 with the following exception; 97 of the participants in Study 2 also participated in a daily dairy component of the study in which they filled out short questionnaire packages twice a day for 15 consecutive work days between Booklet 1 and Booklet 2. In Study 2, 280 out of 299 clerical workers that contacted the lab and met study criteria (same criteria as Study 1) chose to participate. Of the 280 that began the study, 68 dropped out for a dropout rate of 24%. Sixty participants dropped out due to a lack of time for participation, 8 dropped out because they no longer met study criteria (due to promotion, illness, retirement), and 11 were excluded from analyses because they did not report a work-related stressor or were missing more than 30% of the items from one of the scales used in the present study. Thus, analyses were based on a sample of 201. Resources (with the exception of supervisor and co-worker support) were assessed at Time 1 and appraisals and outcome were assessed at Time 2 and Time 3. Because 97 of the participants completed a daily diary component of the study between Booklet 1 and Booklet 2 (distinguishing them from the other 104 participants) analyses were conducted on data from Booklet 3. For the present study, Time 1 refers to data collected in Booklet 1 and Time 2 to data collected in Booklet 3. Only measures used in the present study are described. Measures for Study 2 were the same as those for Study 1 with the following exceptions.

Time 1 Measures

Demographics. Participants were asked to provide information regarding age, education, income, parental and marital status, years (months) employed in present position, years (months) with present organization, number of people in the organization, and classification of organization (service, education, etc.).

Sex roles. The short version of the Bem Sex Role Inventory (SBSRI; Bem, 1981) was used to measure sex-role orientation. The short form contains 10 adjectives measuring instrumentality, 10 adjectives measuring expressivity, and 10 filler items. Bem has reported internal consistencies of .85 for the instrumentality scale and .84 for the expressivity scale. Ballard-Reisch and Elton (1992) have provided evidence for the factoral validity for the SBSRI.

Depression. Depression was measured using the Center for Epidemiologic Studies Depression Scale (CES-D) by Radloff (1977). The CES-D is a 20-item self-report scale that measures depressive symptoms in the general population. Respondents are asked to rate how often they experience various symptoms of depression on a 4-point Likert scale ranging from 0= rarely or none of the time/less than one day per week to 3 = most or all of the time/5-7 days per week. The possible range of scores is from 0 to 60 with higher scores indicating greater levels of depression. Radloff (1977) has reported Cronbach alpha's ranging from .84 to .94 and test-retest reliabilities from .51 to .67. The CES-D correlates moderately with other self-report measures of depression with correlations ranging from .55 to .63.

Measures Time 2

Primary appraisals. Stressor appraisals were assessed using three individual items from Stone and Neale (1984), and Long et al. (1992). Appraisals of meaning and anticipation were taken from the Assessment of Daily Experience Measure (ADE) by Stone and Neale (1984). Participants were asked to rate how meaningful (1 = extremely meaningful to 5 = slightly meaningful), and how anticipated (1 = completely unexpected to 4 = completely anticipated) their stressful event was for them. An item from Long et al. (1992) that was derived from Parkes (1986) was used to rate how upsetting the experience was for the participant (1 = not very upsetting to 5 = extremely upsetting).

Stakes were measured using 15 primary appraisal stake items developed by Portello (1996) with a sample of working women. A principal component factor analysis revealed a three-factor solution. See Appendix C for factor loadings. Two factors were used in the present study: a 5-item work competence stake that emphasized an interest in one's achievement at work and a 3-item self-esteem stake that reflects an interest in the preservation of a positive self-image. Participants are asked to rate the extent to which each stake applied to their situation with 1= does not apply to me and 5 = applies a great deal. Subscale items were summed to yield a total score for each stake with higher scores reflecting greater threat.

Secondary appraisal. Secondary appraisal was assessed using three items from Conway and Terry (1992). Participants were asked to rate The extent to which they felt that they could change or do something about the situation, How much they felt they had to accept the situation, that there is nothing that they could have done to change it, and How much they felt that the outcome of the situation was beyond their control on a five-point scale (1 = not at all and 5 = a great deal). For this study, a principal component factor analysis revealed that all three items loaded on one factor, so items were summed to form a scale. The first item was reverse scored. See Appendix B for factor loadings.

Depression. The CES-D (Radloff, 1977) was also used to assess depression at Time 2.

Results

Prior to analyses, descriptive statistics and frequencies were examined to ensure accuracy of data entry and to check for missing data. Nine cases were dropped because they were missing more than 30% of the items on one of the scales used in the present study. Data were checked for linearity, normality, homoscedasticity, multicullinearity, univariate and multivariate outliers. Significance tests for skewness and kurtosis revealed that skewness and kurtosis values obtained were not significantly different from zero. Because there were no violations of assumptions, no transformations were made. Means, standard deviations, and alpha coefficients for all dependent and independent variables are reported in Table 1. Pearson product-moment correlations were calculated among appraisals, personal resources, social resources, and demographic variables and are presented in Table 2. In general, correlations between criterion and predictor variables were in the low to moderate range ($\underline{r}$s = .00 to .46) and among predictor variables in the low to moderate range ($\underline{r}$s = .00 to .61). All significant correlations were in the expected direction.

Differences Between Study 1 and Study 2 Samples

In order to determine whether there were any significant differences between the two samples, data were examined using chi-square and ANOVA analyses. A series of one-way ANOVAs were conducted in order to determine mean differences between samples on continuous demographic variables, as well as differences in mean levels for predictor and criterion variables. The samples only differed on mean levels of social support, $\underline{F}$ (1, 442) = 5.20 $\underline{p}$ < .03, with participants in Study 2 reporting higher levels of social support than participants in Study 1. Data were collapsed in order to conduct chi-square analyses to determine differences between samples on categorical demographic variables. Results indicated that the samples differed on type of organization in which they are employed, $\underline{X}^2$ (2, $\underline{N}$ = 429) = 14.74, $\underline{p}$ < .01. There were more participants working in industrial organizations in Study 1 (18% vs. 7%), whereas there were more participants working in service organizations in Study 2 (90% vs. 80%).

Resources and Appraisals

In order to examine the extent to which personal and social resources predicted stress appraisals made in response to a specific work-related stressor, HMRs were performed where the criterion was one of the six appraisal variables (appraisal of distress, importance, anticipation, self-esteem stake, work-competence stake, and secondary appraisals) and the predictors were demographics, NA, and the various personal (optimism, general self-efficacy, preventive coping, instrumentality, and expressivity) and social (general social support, co-worker support, supervisor support) resources. Demographics and NA were entered on the first step and social and personal resources were entered on the second step.

Primary appraisals. None of the regression equations predicting primary appraisals in response to a specific work-related stressor were statistically significant after controlling for NA and demographic variables. Results are presented in Table 6. The step containing demographics and NA accounted for a significant amount of the variance in four out of the six regression equations. For the regression predicting an appraisal of distress, demographics and NA accounted for 6% of the variance. Only marital status made a unique contribution ($\beta = -.16$, $\underline{p} < .05$) though there was a trend for the effect of NA ($\beta = .09$, $\underline{p} < .10$). The results suggest that those who are not married and report higher levels of NA also report greater levels of distress in response to a specific stressor. For the appraisal of importance, demographics and NA accounted for 5% of the variance. There was also a trend for the effect of age ($\beta = .13$, $\underline{p} < .09$) suggesting that younger participants appraised their work-related stressor as more important or meaningful. Although the step containing resources failed to account for a significant amount of the variance in the HMRs predicting appraisals, a few resources made unique contributions. For example, expressivity predicted an appraisal of importance ($\beta = .20$, $\underline{p} < .02$) in that those who were more expressive appraised their stressor as more important.

Demographics and NA also predicted a significant amount of variance in stake scores. For the equation predicting a threat to work competence, the step containing demographics and NA accounted for 10% of the variance in scores with both education ($\beta = -.15$, $\underline{p} < .04$) and NA making significant contributions ($\beta = .21$, $\underline{p} < .001$). The results suggest that those who are more highly educated and report higher levels of NA also report greater threat to their work competence in response to a specific work-related stressor. Though the step containing resources was not significant, optimism made a unique contribution to work-competence stake scores. There was an inverse relationship between optimism and a threat to work competence ($\beta = -.20$, $\underline{p} < .02$) in that those who reported greater levels of optimism also reported lower levels of threat to their work competence. Demographics and NA accounted for 11% of the variance in scores measuring a threat to self-esteem. Only NA made a significant contribution ($\beta = .25$, $\underline{p} < .00$) suggesting that

Table 6

HMRs Predicting Appraisals: Study 2

Criterion Variables

	Distress	Importance	Anticipation	Self-esteem	Work competence	Control
	ß	ß	ß	ß	ß	ß
Age	.09	-.13	-.04	-.08	.03	-.06
Education	-.07	-.12	.06	-.04	.15**	-.02
Marital Status	-.16**	-.11	.06	.25***	.21**	.03
NA	.09	.08	.05	.05	.04	.04
R²Δ	.06**	.05**	.01	.11****	.10****	.00
Optimism	-.15*	.05	.07	-.10	-.20**	.12
Instrumentality	.10	-.07	.03	.00	.03	.01
Expressivity	.10	.20**	-.11	-.07	.03	.06
Self-efficacy	-.03	-.12	.05	-.11	-.04	-.11
Preventive coping	-.05	.02	.06	.07	-.02	.17*
Social Support	.11	-.02	-.05	.05	.10	.01
Supervisor Support	.06	-.01	.01	-.04	-.10	.09
Peer Support	-.15*	-.05	-.13	-.06	-.08	-.03
R²Δ	.05	.06	.04	.03	.06	.06
Total R²	.11	.11	.05	.14	.16	.06
Adjusted R²	.05	.06	-.01	.08	.10	.00
F (13, 188)	1.88*	2.00**	.85	2.52**	2.85**	1.06

Note. N = 201. Entries are standardized beta coefficients. Marital status; 0 = not married, 1 = married.

* p < .10, ** p < .05, *** p < .01, **** p < .001

those who report higher levels of NA also report a greater threat to their self-esteem in response to a specific work-related stressor.

Secondary appraisals. The regression equation predicting secondary appraisals was not statistically significant with neither step (control variables or resources) making a significant contribution. The only resource approaching significance in predicting secondary appraisal was coping resources (β = -. 17, p < .06).

HMRs Predicting Depression

Main effects. To determine the extent to which appraisals predict depression after controlling for the effects of demographics, NA, Time 1 depression scores, and resources, a HMR was conducted where depression was the criterion and demographics, NA, Time 1 depression scores, resources, and appraisals were the predictors. Control variables were entered in the first step (demographic characteristics, NA, and baseline depression scores), personal and social resources in the second step, and appraisals on the third step. The regression accounted for 51% of the variance in depression scores with control variables and appraisals accounting for a statistically significant amount of the variance in depression scores. Results are summarized in Table 7. The first step, consisting of control variables, accounted for 43% of the variance with NA (β = .19, p < .02), Time 1 depressions scores (β = .34, p < .001), and age (β = -.13 p < .03) each making a unique contribution. Results suggest that younger participants, those who reported higher levels of depression at Time 1, and those high in NA, reported greater levels of depression. The second step, which included the various personal and social resources, accounted for an additional 3% of the variance in scores and was not significant. Though the step failed to reach significance, optimism made a unique contribution to depression (β = -14, p < .04) suggesting that more optimistic participants reported lower levels of depression. The last step consisting of primary and secondary appraisals accounted for an additional 5% of the variance in depression scores ($R^2\Delta$ = .05, p < .01). Only an appraisal of a threat to self-esteem (β = .16, p < .05) made a unique contribution suggesting that those who reported higher levels of threat to their self-esteem in response to a work stressor, also reported higher levels of depression.

Moderated effects of resources and appraisals. To test for moderating effects of appraisals and resources on depression, eight moderated HMRs were preformed. As with Study 1, the number of predictors in the moderated regression analyses were kept to a 1:5 ratio of predictors to subjects in order to achieve adequate power. Thus, the moderating effects of each resource was tested separately. Standardized scores for continuous control variables (Time 1 depression scores, NA, and demographic characteristics), each resource, and the six different appraisals were entered in the first step, whereas moderating effects were tested with multiplicative terms (cross-products) and were entered into the regression hierarchically after the main effects were entered. Though a number of individual interactions made

Table 7

HMR Predicting Depression: Study 2

		Depression		
	Std. Error	β	p	R²Δ
Age	.07	-.13	.03	
Education	.44	-.09	.10	
Marital Status	1.28	-.04	.50	
Depression Time 1	.08	.34	.00	
NA	.11	.19	.01	.43***
Optimism	.14	-.14	.04	
Instrumentality	.07	.07	.27	
Expressivity	.09	.07	.27	
Preventive coping	.26	.10	.11	
Self-efficacy	.05	.04	.52	
Social Support	.12	-.10	.16	
Supervisor Support	.29	.05	.42	
Peer Support	.30	-.07	.28	.03
Importance appraisal	.48	.03	.59	
Distress appraisal	.69	.11	.09	
Appraisal of anticipation	.54	-.07	.21	
Self-esteem stake	.20	.16	.03	
Work competence stake	.12	.02	.77	
Control appraisal	.19	.05	.44	.05*
Total R^2				.51
Adjusted R^2				.46
F (19, 182)				9.86***

Note. N = 201. Entries are standardized beta coefficients. Marital status 0 = not married, 1 = married

* $p < .10$, ** $p < .05$, ** $p < .01$

unique contributions to the variance in depressions scores, none of the moderated HMRs reached statistical significance. Results are summarized in Table 8.

Discussion

In Study 2, the relationship between personal resources, social resources, and stress appraisals made in response to a specific work-related stressor was examined, controlling for the effects of NA. All regressions predicting appraisals failed to reach a level of statistical significance. These findings run contrary to Lazarus and Folkman's (1984) contention that coping resources influence appraisal, as well as to Study 1 findings. Although NA was significantly associated with a number of appraisals, it attenuated the relationship between resources and appraisals in only one equation. Post hoc analyses revealed that a HMR predicting a threat to work competence was significant when NA was removed from the equation. Although the step containing resources failed to account for a significant amount of the variance in the HMRs that predicted appraisals, there were a number of individual resources that were related to appraisals. For example, expressivity was positively associated with an appraisal of importance. There was also an inverse relationship between optimism and an appraisal of a threat to work competence.

The prediction that resources would be more strongly related to secondary appraisals was not supported in Study 2. In fact, no resources were significant predictors of secondary appraisals. As with Study 1, measurement error may account for the weak relationships between secondary appraisal and resources in Study 2. Though the internal consistency of the secondary appraisal measure in Study 2 ($r = .74$) was considerably higher than it was in Study 1 ($r = .51$), it was still lower than the internal consistencies of primary appraisal measures such as stakes (Cronbach alpha's were .89 and .86 for the work competence and self-esteem stake, respectively). Thus, there was greater measurement error in the analyses involving secondary appraisals than primary appraisals making it difficult to draw any conclusions regarding the relative strength of the relationships (Schmidt & Hunter, 1996). The weak relationship between resources and secondary appraisal may also be due to the limited operationalization of the secondary appraisal construct in the present study. Whereas stakes in Study 2 were measured with two scales designed specifically for their relevance to work settings, secondary appraisal was measured with a general single three-item scale. Though some researchers have started to focus their efforts at more fully operationalizing primary appraisals (e.g., Dewe, 1993; Portello, 1996), measurement of secondary appraisal has received less attention. More accurately understanding the role of secondary appraisal in the stress process will require a reliable and valid measurement of the construct. At this point, it is difficult to determine whether the weak relationship between secondary appraisal and resources is a result of an inadequate

Table 8

Moderating Effects of Resources and Appraisals on Depression Study 2

	Depression							
	Opt	Ins	CR	Eff	Exp	SS	Sup	CoS
	B	B	B	B	B	B	B	B
R X Dis	.00	.14	.21	-.69	-.29	-.85	.70	.83
R X Imp	-.01	.45	.77	-.01	-.75	-.50	.89	1.59
R X Ant	-.42	-.45	.75	-.38	.73	1.06*	.16	-.11
R X SE	1.42*	-.31	1.05	-.69	.76	.37	.43	.97
R X WC	-.19	.31	.46	2.20**	-.33	-.85	-.37	-.30
R X Con	-1.34**	-.00	-.86	.28	-.99	.01	.76	-.77
Tot R^2	.51	.48	.50	.51	.50	.49	.49	.50
Adj. R^2	.46	.43	.46	.46	.45	.44	.44	.46
F (18, 183)	10.51***	9.60***	10.34***	10.50***	10.06***	9.95***	9.87***	10.37***
$R^2 \Delta$	.02	.00	.02	.03	.02	.01	.01	.02

Note. N = 201. Entries are unstandardized beta coefficients for final simultaneous step. Only the step containing moderated terms is presented. Main effects

were entered on the first step (age, education, marital status, resource, appraisals).). R X Dis = resource X distress appraisal; R X Imp = resource X

importance appraisals; R X Ant = resource X anticipation appraisal; R X SE = resource X self-esteem stake; R X WC = resource X work competence stake; R

X Con = resource X control appraisal; Opt = optimism; Ins = instrumentality; CR = preventive coping resources; eff = efficacy; SS = Social Support; Sup =

supervisor support; CoS = peer support.

* p < .10, ** p < .05, *** p < .01.

operationalization of secondary appraisal or contradicts Lazarus and Folkman's (1984) theoretical distinction between primary and secondary appraisal.

In Study 2, I also examined the extent to which appraisals predict depression. The results indicated that appraisals were related to depression after controlling for NA, Time 1 depression scores, demographics, and resources, and provide support for the validity of the appraisal construct and transactional approaches to stress. This result replicates findings from Study 1 and counters claims that the effects of appraisals on psycho-social outcome are primarily due to variables that give rise to appraisals (such as personal and social resources) rather than appraisals themselves (Monroe & Kelly, 1995). Results also replicate Study 1 findings in that optimism, a threat to self-esteem, and an appraisal of distress were significantly associated with depression. In both studies there was an inverse relationship between optimism and depression and a positive relationship between appraisals of distress and threat to self-esteem and depression.

None of the steps testing the moderated effects of appraisals and resources in predicting depression were statistically significant, although two individual interactions made unique contributions (optimism X secondary appraisals and self-efficacy X work competence stake). Again, the lack of statistically significant findings may be due to the combination of the low power of moderated HMRs (Champoux & Peters, 1987) and the stringency of the test (Time 1 depression scores and NA were controlled for).

A number of researchers have suggested that NA confounds the relationship between appraisals and depression (Brennan & Barnett, 1998). Results from the present study do not support this supposition as appraisals were associated with depression even after controlling for the effects of Time 1 depression scores and NA. Thus, the results are consistent with those found by Chen and Spector (1991). However, there remains considerable research that suggests that NA confounds the relationship between stress appraisals and health outcomes (e.g., Brennan & Barnett,1998; Brief et al., 1988). Future research exploring under what conditions NA confounds the relationship between appraisals and psycho-social outcome are warranted.

<div align="center">General Discussion</div>

Both antecedents (personal and social resources) and consequences (impact on psycho-social outcome) of work-stress appraisals were examined in order to gain a more thorough understanding of the appraisal construct as conceptualized by Lazarus and Folkman (1984) in their theory of transactional stress. Results provide weak to modest support for various aspects of Lazarus and Folkman's model. In regards to antecedents, results indicate that personal and social resources are associated with work-stress appraisals supporting Lazarus and Folkman's contention that

coping resources influence the appraisal process. The present study also provides evidence for the validity of the appraisal construct because in both studies appraisals were related to depression even after controlling for the effects of demographics, resources, and in the case of Study 2, NA and Time 1 depression scores. Taken together, results provide valuable and critical information about the appraisal process.

Antecedents of Appraisals

In both Study 1 and 2, I examined the extent to which resources predict appraisals made in response to a specific work-related stressor. Although there was no direct replication between the two studies, results suggest that certain personal and social resources predict stress appraisals, providing weak support for Lazarus and Folkman's contention that coping resources influence appraisals of stress. The relationship between resources and appraisals was stronger in Study 1 than in Study 2. In Study 1, the step containing resources explained a statistically significant amount of the variance (10 to 14%) in four out of the six regressions. In Study 2, the step containing resources was not statistically significant in any of the regressions, although there were individual resources that were significantly related to appraisals. For example, there was an inverse relationship between optimism and an appraisal of a threat to work competence in that those who reported high levels of optimism also reported lower levels of threat in response to a work stressor. There were also some similar trends between studies. For example, optimism predicted an appraisal of distress in both studies. Individuals who reported higher levels of optimism appraised a work-related stressor as less distressing. Although resources did not explain a substantial amount of variance in appraisals in either study, the fact that relatively stable, dispositional qualities predicted a single cognitive process warrants further research. More sophisticated research designs, such as daily diary designs, may help to uncover how antecedents of appraisals, such as coping resources, effect the appraisal process over time.

The fact that findings varied between studies may be due to the different operational definitions of appraisals in the two studies. For example, the appraisal of importance was measured in Study 1 with the item How important was the stressful experience?, and in Study 2 by the item How meaningful was the stressful experience? The only appraisal measure that was identical in the two studies was the item measuring an appraisal of distress (How upsetting was the stressful experience?). Thus, the different operationalization of appraisals between studies, as well is the unreliability of single item measures (only Study 2 stakes utilized established scales), may have accounted for the different pattern of results. Although there have been recent efforts at measuring appraisals (e.g., Dewe, 1993; Portello, 1996), appraisal measurement still lags behind that of other constructs in Lazarus and Folkman's model (Monroe & Kelly, 1996).

The lack of reliable measures of appraisal may be due, in part, to the inherent difficulty in measuring a dynamic, intrapsychic process. Lazarus has argued that in order to understand appraisals, researchers need to measure an individual's stress appraisals repeatedly in each distinct context (Lazarus, 1990). Thus, Lazarus advocates for the use of intraindividual designs for the assessment of appraisal. However, even if idiographic approaches are taken, researchers still need valid and reliable measures of appraisals that capture the depth and scope of the meaning making or appraisal process. Researchers have taken different approaches in attempts to accomplish this task. For example, Peacock and Wong (1990) have developed a measure to assess a number of different dimensions of primary and secondary appraisal (Stress Appraisal Measure; SAM). Although preliminary findings suggest their appraisal scales possess strong psychometric properties, the SAM (Peacock & Wong, 1990) has been infrequently used to date.

Another approach to the measurement of appraisal has been suggested by Weber and Laux (1990) who advocate for the use of a diary for appraisal assessment. By diary they are not referring to a structured, questionnaire format but free response descriptions of what is happening in a person's life. They argue that such an approach allows researchers to get a rich picture of an event and its individual, psychological meanings, and personal significance. Furthermore, they argue that by monitoring a participant's appraisal process for many stressful episodes day by day, researchers can develop a basis for estimating variability as well as consistency in the appraisal process. In other words, researchers can assess the extent to which some appraisals are stable and consistent across situations (e.g., an individual's self-esteem may always feel threatened in time of stress) and which ones vary from context to context (e.g., sense of control may vary from event to event).

The issue of the stability and specificity of the appraisal construct is also relevant to the varied findings between Study 1 and Study 2 in the present study. Lazarus (1991) has conceptualized appraisal as a dynamic process that depends on the unique interaction between the person and the environment. Thus, appraisals depend to a certain extent on the nature of the stressor. Varied findings between Study 1 and Study 2 may be due to the fact that clerical workers were appraising different types of stressors. In Study 1, 42% of the stressors identified by participants were interpersonal in nature, whereas in Study 2, 53% of the stressor identified were interpersonal in nature. There may be some appraisals that are more relevant to certain stressor than others. Whether appraisals vary depending on stressor type has important implications for the development of appraisal measures. If appraisal is context specific, instruments need to be designed or adapted for relevancy to the stressful event.

Findings also differed with respect to the relationship between self-efficacy and the distress appraisal. In Study 1 there was a positive relationship between self-efficacy and an appraisal of distress, whereas in Study 2 there was a

inverse relationship. The distress appraisal was operationalized in the same manner in both studies. A possible explanation for the unique Study 1 finding is that some participants may have reported high self-efficacy scores in order to self-enhance. As research indicates that women who self-enhance over-react to minor frustrations (Colvin et al., 1995) this may account for the positive relationship between self-efficacy and distress. However, as the relationship between self-efficacy and the distress appraisal was in the expected direction in Study 2, the Study 1 finding may also have been an anomalous finding.

Finally, my prediction that resources would be more strongly related to secondary appraisal was not supported in either study. Findings contradict Lazarus and Folkman's theoretical distinction between primary and secondary appraisal as well as other research examining the relations between resources and appraisals (e.g., Chan, 1998). However, it is also possible that the low reliability of the secondary appraisal measure, or the limited operationalization of the construct, may have accounted for the weak relations between resources and secondary appraisal.

Appraisals and Outcome

The present study also considered the extent to which appraisals predicted depression after controlling for demographics and resources, and in the case of Study 2, NA and Time 1 depression scores. In general, the pattern of results between studies was similar. In both studies, appraisals accounted for a statistically significant amount of the variance in depression scores beyond that accounted for by control variables and resources, providing modest support for the validity of the appraisal construct. Results support Lazarus and Folkman's (1984) supposition that appraisals are critical determinants of vulnerability to stress. Both studies also indicate that an appraisal of distress, an appraisal of a threat to self-esteem, and optimism are related to depression. Those that reported greater levels of distress and threat to their self-esteem in response to a work-related stressor reported higher levels of depression, whereas those who reported higher levels of optimism reported lower levels of depression.

Finally, both studies considered the moderating effects of appraisals and resources on depression. In general, the moderated effects failed to account for any additional variance in depression scores beyond that of main effects (the exception being the moderated effects of social support and appraisals in Study 1). However, a few individual interactions made unique contributions. The lack of significant findings may be due to the low power of the moderated HMRs in the present study as a result of the high ratio of predictors to participants (Champoux & Peters, 1987).

Implications and Limitations

The present study has important implications for counselling practice. Results indicate that coping resources are related to appraisals of stress in work contexts. Stress management programs that focus on the development and

acquisition of both personal (e.g., preventive coping strategies) and social resources (e.g., social support) may help decrease clerical workers' vulnerability to stress by reducing their negative stress appraisals. Furthermore, organizational procedures and policies that serve to increase clerical worker's coping resources (e.g., cultivating supportive work environments) may aid in stress resistance. The fact that appraisals were related to depression after controlling for resources suggests that appraisal is an important variable in determining vulnerability to stress. Interventions that target appraisals (e.g., cognitive behavioral therapies) or the meaning-making process (e.g., narrative therapies) may also help to reduce clerical workers susceptibility to the effects of stress by altering the way they appraise or make meaning of the events. Findings from Study 1 and 2 indicate that an appraisal of distress, as well as an appraisal of a threat to self-esteem, are particularly important predictors of depression. Because NA was significantly associated with the distress appraisal and the self-esteem stake (in addition to directly impacting depression), interventions that target reducing trait anxiety, an indicator of NA, may be helpful in reducing individual vulnerability to stress.

Although the present study has many strengths, such as replication of analyses on two independent data sets, there are several limitations. First, the samples consisted of predominately Caucasian volunteers who may have had a special interest in stress and coping. Thus, the generalizability of the results is limited. The exploratory nature of the study also limits generalizability, as does the fact that the data are self-report and are based on retrospective recall. Such measures may be subject to recall difficulty or response bias. The operational definitions of appraisals consist of another design limitation as most of the appraisal items were measured on single item scales, some of which were not designed for work stress. Finally, the research design employed cannot determine the direction of the relationships nor infer causality, although Study 2 did assess change in depression over the course of two-months.

The present study provides important information regarding antecedents of appraisals (coping resources), as well as support for the validity of the appraisal construct. However, despite the contribution of the present study and other research on appraisal (Dewe, 1991, 1992; Gall & Evans, 1987), there remains a dearth of knowledge about the appraisal process. This is due, in part, to the lack of valid and reliable appraisal measures, as well as limitations of current research designs. Multi-dimensional assessments of appraisals, as well as idiographic designs may help contribute to our understanding of the appraisal process. However, such approaches inevitably add incredible burden to both researcher (in terms of costs and statistical knowledge) and research participant (time and intrusiveness involved in participation). Furthermore, these approaches may fail to capture important components of the appraisal process. For example, Park and Folkman (1986) have suggested that situational appraisals are only one component of the meaning-

making process that determine vulnerability or resilience to stress. They have proposed a model that incorporates both situational meaning (appraisal) and global meaning (enduring beliefs and valued goals) in the stress and coping process. Another fruitful avenue in gaining an understanding of appraisals involves the use of qualitative research designs. A grounded theory design may help to develop constructs that elaborate on the appraisal or meaning–making process. Qualitative methodologies may also help to provide information on how the context influences the appraisal process. For example, ethnographic research (e.g., participant observation) may help to capture the influence of the social cultural context on the appraisal process.

In sum, the present study provides support for the appraisal construct as conceptualized by Lazarus and Folkman (1984). Results indicate that appraisal is associated with depression even after controlling for resources, suggesting that appraisal plays a role in determining individual susceptibility to stress. However the present study is largely exploratory and replication is needed. Considering the importance of the appraisal process, it is imperative that future research focus on appraisal in order to gain a more thorough understanding of the construct.

References

Adler, N.E., Boyce, T., Chesney, M.A., Cohen, S., Folkman, S., Kahn, R.L., & Syme, S.L. (1994). Socio-economic status and health: The challenge of the gradient. American Psychologist, 49, 15-24.

Balshem, M. (1988). The clerical worker's boss: An agent of job stress. Human Organization, 47, 361-367.

Bandura, A. (1986). Social foundations of thought and action: A Social cognitive theory. Englewoods Cliffs, NJ: Prentice-Hall.

Bem, S.L. (1981). Bem Sex Role Inventory: A professional manual. Palo Alto, CA: Consulting Psychologists Press.

Bem, S.L. (1974). The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, 42, 155-162.

Brennan, R.T., & Barnett, R.C. (1998). Negative affectivity: How serious a threat to self-report measures of psychological distress. Women's Health: Research on Gender, Behavior, and Policy, 4, 369-384.

Brief, A.P., Burke, M.J., George, J.M., Robinson, B.S., & Webster, J. (1988). Should negative affectivity remain an unmeasured variable in the study of job stress? Journal of Applied Psychology, 73, 193-198.

Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. Journal of Personality and Social Psychology, 69, 890-902.

Carver, C.S., & Gaines, J.G. (1987). Optimism, pessimism, and post-partem depression. Cognitive Therapy and Research, 11, 449-462.

Champoux, J.E., & Peters, W.S. (1987). Form, effect size and power in moderated regression analysis. Journal of Occupational Psychology, 60, 243-255.

Chan, E.C. (1998). Dispositional optimism and primary and secondary appraisal of a stressors: Controlling for confounding influences and relations to coping and psychological and physical adjustment. Journal of Personality and Social Psychology, 74, 1109-1120.

Chen, P.Y., & Spector, P.E. (1991). Negative affectivity as the underlying cause of correlations between stressors and strains. Journal of applied psychology, 76, 398-407.

Cohen, S., & McKay, G. (1984). Social support and the buffering hypothesis: A theoretical analysis. In A. Braum, S.E. Taylor, & J.E. Singer (Eds.), Handbook of Psychology and Health (pp. 253-267). Hillsdale, NJ: Lawrence Erlbaum.

Colvin, C.R., Block, J., & Funder, D.C. (1995). Overly positive self-evaluations and personality: Negative implications for health. Journal of Personality and Social Psychology, 68, 1152-1162.

Conway, V.J., & Terry, D.J. (1992). Appraised controllability as a moderator of the effectiveness of different coping strategies: A test of the goodness of fit hypothesis. Australian Journal of Psychology, 44, 1-7.

Cutrona, C.E. (1990). Stress and social support: In search of optimal matching. Journal of Social and Clinical Psychology, 9, 3-14.

Decker, P.J., & Borgen, F.H. (1993). Dimensions of work appraisal: Stress, strain, coping, job satisfaction, and negative affectivity. Journal of Counseling Psychology, 40, 470-478.

Derogatis, L.R., & Melisaratos, N. (1983). The Brief Symptom Iventory: An introductory report. Psychological Medicine, 13, 595-605.

Derogatis, L.R., & Coons, H.L. (1993). Self-report measures of stress. In L. Goldberger & S. Breznitz (Eds.), Handbook of stress (2nd edition) (pp. 200-233). New York: The Free Press.

Dewe, P.J. (1991). Primary appraisal, seconday appraisal and coping: Their role in stressful work encounters. Journal of Occupational Psychology, 64, 331-351.

Dewe, P. (1993). Measuring primary appraisal: Scale construction and directions for future research. Journal of Social Behavior and Personality, 8, 673-685.

Dunkel-Schetter, C., Folkman, S., & Lazarus, R.S. (1987). Correlates of social support receipt. Journal of Personality and Social Psychology, 53, 71-81.

Folkman, S., & Lazarus, R.S. (1980). An analysis of coping in a middle-aged community sample. Journal of Health and Social Behavior, 21, 219-239.

Folkman, S., Lazarus, R.S., 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.

Gall, T.L., & Evans, D.R. (1987). The dimentionality of cognitive appraisals and its relationship to physical psychological well-being. Journal of Psychology, 121, 539-546.

Green, L. (1992). Occupational Stress. Canadian Social Trends, Autumn, 14-17.

Hobfall, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. American Psychologist, 44, 513-524.

Hobfall, S.E., & Vaux , A. (1993). Social support: Social resources and social context. In L. Goldberger & S. Breznitz (Eds.) Handbook of stress: Theoretical and clinical aspects (pp. 685-705). New York: Free Press.

Holahan, C..J., & Moos, R.H. (1982). Social support and adjustment: Predictive benefits of social climate indices. American Journal of Community Psychology, 10, 403- 415.

House, J.W. (1981). Work stress and social support. Reading, MA: Adison-Wesley.

Lazarus, R.S. (1991). Emotion and adaptation. New York: Oxford University Press.

Lazarus, R.S., & Folkman, S. (1984). Stress, appraisal, and coping. New York: Springer.

Lazarus, R.S. (1990). Theory based stress management. Psychological Inquiry, 1, 1-13.

Lepore, S.J. (1997). Social – environmental influences on the chronic stress process. In B.H. Gottlieb (Ed.), Coping with chronic stress (pp. 133-160). New York: Plenum.

Long, B.C. (1999). (Stress and coping among female clerical workers). Unpublished raw data.

Long, B. C. (1998). Coping with workplace stress: A multiple-group comparison of female managers and clerical workers. Journal of Counseling Psychology, 45, 65-78.

Long, B.C., & Haney, C. J. (1988). Coping strategies for working women: Aerobic exercise and relaxation interventions. Behavior Therapy, 19, 75-83.

Long, B.C., Kahn, S.E., & Schutz, R.W. (1992). Causal model of stress and coping: Women in management. Journal of Counseling Psychology, 39, 227-239.

Mayes, B.T., & Barton, M.E. (1991). An exploration of the moderating effect of age on job stressor employee

strain relationships: Special Issue. Handbook on job stress. Journal of Social Behavior and Personality, 6, 289-308.

Moos, R.H. (1981). Work Environment Scale Manual. Palo Alto: Consulting Psychologist Press.

Moos, R.H., & Schaefer, J.A. (1993). Coping resources and processes: Current concepts and measures. In L. Goldberger & S. Breznitz (Eds.), Handbook of stress (2nd edition) (pp. 200-233). New York: The Free Press.

Munroe, S.M., & Kelley, J.M. (1995). Measurement of stress appraisals. In S. Cohen, R.C. Kessler, & L.U. Gordon (Eds.), Measuring Stress: A guide for health and social scientists (pp. 122-147). New York: Oxford University Press.

Park, C.L., & Folkman, S. (1996). Meaning in the context of stress and coping. Review of General Psychology, 2, 115-144.

Parkes, K.R. (1994). Personality and coping as moderators of work stress processes: Models, methods, and measures. Special issue: A healthier work environment. Work and Stress, 8, 110-129.

Parkes, K.R. (1986). Coping in stressful episodes: The role of individual differences, environmental factors, and situational factors. Journal of Personality and Social Psychology, 51, 1277-1292.

Peacock, E.J., & Wong P.T.P. (1990). The stress appraisal measure (SAM): A multidimensional approach to cognitive appraisal. Stress Medicine, 6, 227-236.

Portello, J. Y. (1996). Dimensions of managerial and professional women's stress: Interpersonal conflict and distress. Unpublished Doctoral Dissertation, UBC.

Radloff, (1977).The CESD scale: A self-report depression scale for research in general population. Applied Psychological Measurment, 1, 385-401.

Repetti, R. L. (1987). Individual and common components of the social environment at work and psychological well-being. Journal of Personality and Social Psychology, 52, 710-720.

Scheier, M.F., & Carver, C.S (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. Health Psychology, 4, 219-247.

Scheier, M.F., Carver, C.S., & Bridges (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. Journal of Personality and Social Psychology, 67, 1063-1078.

Schmidt, F. L., & Hunter, J.E. (1996). Measurement error in psychological research: Lessons from 26 research scenarios. Psychological Methods, 2, 199-223.

Schaubroeck, J., Ganster, D.C., & Fox, M.L. (1992) Dispositional affect and work-related stress. Journal of Applied Psychology, 77, 322-335.

Sherer, M., Maddux, J.E., Mercandante, G., Prentice-Dunn, S., Jacobs, B., & Rogers, R.W. (1982). The general self-efficacy scale: Construction and validation. Psychological Reports, 51, 663-671.

Silverthorn, N.A., & Gekoski, W.L. (1995). Social desirability effects on measures of adjustment to university, independence from parents, and self-efficacy. Journal of Clinical Psychology, 51, 244-251.

Snap, M.B. (1992). Occupational stress, social support, and depression among black and white professional-managerial women. Women and Health, 18, 41-79.

Spielberger, C.D. (1966). Anxiety and behavior. New York: Academic Press.

Spielberger, C.D. (1972). Anxiety: Current trends and research. New York: Academic Press.

Spreecher, S., & Sedikides, C. (1993). Gender differences in perceptions of emotionality: The case of close heterosexual relationships. Sex Roles, 28, 511-530.

Steenbarger, B.N., & Greenberg, M.A. (1990). Sex roles, stress, and distress: A study of person by situation contingency. Sex Roles, 22, 59-68.

Stone, A.A., & Neale, J.M. (1984). New measure of daily coping: Development and preliminary results. Journal of Personality and Social Psychology, 46, 892-906.

Statistics Canada (1995). Women in Canada (3rd Ed.). Ottawa: Ministry of Supply and Services. Catalogue No. 89-503E.

Turnage, J.J., & Spielberger, C.D. (1991). Job stress in managers, professional, and clerical workers. Work and Stress, 5, 165-176.

Turner, J.R., Frankel, G.B., & Levin, D.M. (1983). Social support: Conceptualization, measurement, and implications for mental health. Research in Community and Mental Health, 3, 67-111.

Truss, C.J.G. (1993). The secretarial ghetto: Myth or reality? A study of secretarial work in England, France, and Germany. Work, Employment and Society, 7, 561-584.

Weber, H. & Laux, L. (1990). Bringing the person back into stress and coping measurement. Psychological Inquiry,1, 37-40.

Wong, P.R., & Recker, G.T. (1983). Validity of the coping inventory. Paper presented at the Canadian Association on Gerontology, Moncton, New Brunswick, Canada.

Verbrugge, L.M., & Wingaurd, D.L. (1991). Sex differences in health and mortality. In L. Kramer (Ed.), The sociology of gender (pp. 447-458). New York: St Martin's.

APPENDIX A

Personal and Work Demographics for Study 1 and Study 2

Table A

Personal and Work Demographics for Study 1 and Study 2.

Variable	Study 1 ($\underline{N}$ = 215)			Study 2 ($\underline{N}$ = 201)		
	%	$\underline{M}$	$\underline{SD}$	%	$\underline{M}$	$\underline{SD}$
Age	--	39.77	9.46	--	41.31	9.46
Education[a]	--	3.11	1.06	--	3.14	1.06
Parents	53%	--	--	54%	--	--
Married	53%	--	--	59%	--	--
Caucasian	98%	--	--	88%	--	--
Household Income[b]	--	3.61	1.33	--	3.06	1.31
Years in workforce	--	17.02	10.03	--	20.59	9.20
Years with organization	--	5.94	6.07	--	8.30	6.68
Years in present position	--	4.63	5.91	--	5.62	4.70
Major industries represented						
- Service	80%	--	--	90%	--	--
- Industrial	18%	--	--	07%	--	--

Note. Dashes indicate not applicable. [a] Education, 1 = less than high school, 2= high school graduate, 3= some training beyond high school, 4 = 2 year college graduate, 5 = 4 year university degree, 6 = graduate school. [b] Income Study 1, 1 = less than $15, 000, 2 = $15,000 - $25,000, 3 = $26, 000 - $40, 000, 4 = $41, 000 - $60, 000, 5 = $61, 000 - $ 80,000, 6 = $81, 000 – 100, 000, 7 = greater than $100, 000. Income Study 2, 1 = less than $25, 000, 2 = $26,000 - $40,000, 3 = $41, 000 - $60, 000, 4 = $61, 000 - $80, 000, 5 = $81, 000 - $ 100,000, 6 = greater than 100, 000.

APPENDIX B

Factor Analyses of Control Appraisal: Study 1 and Study 2

Table B

Factor Analyses of Control Appraisal: Study 1 and Study 2

Item	Loading
Study 1[a]	
To what extent is the stressful event something that you could change or do something about?	.78
How much control did you feel you had to deal with the situation?	.76
To what extent is the stressful event something that you could accept?	.57
Study 2[b]	
How much do you feel that the outcome of the situation is beyond your control?	.86
How much do you feel that you have to accept the situation, that there is nothing you can do to change it?	.85
To what extent do you feel that you could you change or do something about the situation?	-.71

Note. Principal components analysis. [a] $N = 215$. [b] $N = 201$.

APPENDIX C

Factor Analysis of Stakes

Table C

Factor Analysis of Stakes Study 2

	Factor loadings		
Item	1	2	3
Work competence stake – factor 1			
I might appear unproductive	.90	.11	.10
I might not receive recognition in my job	.82	.00	.26
I might appear incompetent	.82	.00	.16
I might not achieve an important goal	.73	-.15	.27
I might lose status in my job	.62	-.25	.32
Self-esteem stake – factor 2			
Might lose my self-respect	.00	.93	.20
Might harm my self-esteem	.00	.88	.23
Might not believe that I am doing something important or worthwhile	.00	.79	.25
Work environment stake – factor 3			
The clarity and openness of communication within the department might be harmed	.00	.00	.81
The work atmosphere might be harmed	.17	.15	.73
I might harm my collaborative work relationship with someone	.00	.27	.69
I might not communication openly and honestly with others at work	.00	.29	.54

Note. N = 201. Maximum likelihood analysis with a varimax rotation.