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LISREL Computer Program

The potential application of the appraisal theory of emotions developed by I. Roseman and others (1990) to transactional models of stress-produced emotions in the work place was tested. Data were gathered from 231 graduate students in counseling who were asked to rate their appraisals of taking a new job and subsequent emotional reactions, as well as perceived coping resources. Structural equation modeling was used to test the theoretical predictions among study variables. The results of a LISREL model suggest that perceived levels of specific coping resources have impact on the appraised desirability of jobs and subsequent experience of positive and negative affect. Support was found for the appraisal theory in that appraisals of consistency of a new job with one's motives were related to positive emotion and inconsistency with motives to negative affect. Implications of these findings for vocational adjustment and stress-produced emotions in the work place are discussed. (Contains 2 tables, 1 figure, and 64 references.) (SLD)
RUNNING HEAD: Vocational Transition

Structural Model of Coping, Appraisals, and Emotions in Vocational Transition

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Abstract

The study tests the potential application of Roseman et al.'s (1990) appraisal theory of emotions for transactional models of stress produced emotions in the workplace. Data were gathered from 231 graduate students who were asked to rate their appraisals of taking a new job and subsequent emotional reactions, as well as perceived coping resources. The results of the LISREL model suggested that perceived levels of specific coping resources impacted the appraised desirability of jobs and subsequent experience of positive and negative affect. Implications of these findings for vocational adjustment and stress produced emotions in the workplace are discussed.
Introduction

Modern views of stress emphasize the role of subjective evaluations of events in determining whether demands become stressors (Cox, 1978; Hobfoll, 1988; Lazarus & Folkman, 1984; Folkman & Lazarus, 1988; Matheny, Aycock, Pugh, Curlette, & Canella, 1986). According to Lazarus (1991), the transactional approach to stress in the workplace requires an understanding of how external events are appraised in conjunction with estimations of one's capacity for coping. Lazarus and Folkman (1984) defined psychological stress as a process which begins with demands that may stem from self-requirements, life changes, role requirements, or hassles. In some cases, these demands represent conditioned cognitive experiences, such as is the case with phobias, which trigger the stress response without conscious awareness. Other appraisals involve more conscious awareness and are followed by an appraisal of the adequacy of one's resources. Lazarus and Folkman (1984) labelled cognitive evaluations of external events, whether reflexive or more deliberate, as primary appraisals, and appraisals of one's coping resources as secondary appraisals.

Elliott, Chartrand, and Harkins (1994) have pointed out that despite the fundamental role of cognitive appraisals in the transactional model articulated by Lazarus and Folkman (1984), studies of these processes in the work stress literature have been conspicuously absent. They speculated that this may in part be due to limitations in how cognitive appraisals have been theoretically constructed. The relationship between cognitions and emotions pervades most clinical concerns (Mandler, 1992) and
this is particularly true of the work stress literature: research in vocational development focuses on expressed and felt emotions as indicators of employee health and satisfaction (Rafaeli & Sutton, 1987) and a wide body of research has documented the emotional consequences of career-related events (Fusilier and Ganster, 1986; Moorman, 1993; O'Neill and Zeichner, 1985; Organ & Near, 1985; Stumpf, Brief, & Hartman, 1987). Theoretical models which shed more light on the relationship between specific cognitions and discrete emotional states would seem to be indicated to test transactional models of stress in the workplace.

Roseman, Spindel, and Jose (1990) have recently proposed a structural theory of emotions in which specific combinations of eight appraisal dimensions determine which of 16 discrete emotions will be experienced. The important dimensions of appraisal include whether the outcome of an event perceived as positive or negative, certain or uncertain, whether one’s motivation is appetitive (reward seeking) or aversive (punishment avoiding), whether an event is appraised as circumstance caused or person caused, and whether the self is appraised as strong or weak. The theory includes 10 specific negative emotions - disgust, distress, sadness, fear, unfriendliness, anger, frustration, shame, regret, and guilt. The six positive emotions were joy, relief, affection, pride, hope, and surprise. Specific combinations of appraisals of external events are hypothesized to result in one of the discrete emotions - for example, anger results when an event is appraised as negative and other-caused.

Roseman et al.’s (1990) appraisal model may constitute a useful conceptualization
of the primary appraisal process for stress-produced emotions in the workplace. Roseman et al.'s (1990) model, originally based on Arnold's (1960) work, was supported in several studies (Roseman, 1984; Roseman, 1991; Roseman et al., 1990) and similar models have received empirical support from other appraisal theorists (Scherer, 1982; Scherer, 1984; Smith & Ellsworth, 1985; Smith & Ellsworth, 1987). As noted, Lazarus and Folkman (1984) believed that some primary appraisals of external events are not mediated by secondary appraisals of coping resources because they are more reflexive. Zajonc (1980) and Safran and Greenberg (1982) have made similar distinctions between appraisals which seem to be automatic and appraisals that involve more conscious reflection and deliberation. Safran and Greenberg (1986) specifically refer to appraisal theorists such as Arnold (1960) when discussing such reflexive appraisal processes.

If appraisals directly affect emotional experience, what role do coping resources play? McCarthy and Brack (1993) found evidence to suggest that in the context of stressful vocational events, cognitive appraisals as conceptualized by Roseman et al. (1990) had a direct influence on stress produced emotions and hypothesized that coping resources may function as antecedents to the primary appraisal process. As suggested by Elliott et al. (1994), primary appraisals in the workplace may be spontaneous mental events, leading directly to specific types of affect, such as frustration and anger. Coping resources may not moderate this process, but instead may predispose an individual to make certain types of reflexive appraisals.

Roseman et al.'s (1990) model contains 16 emotions, and rather than attempt to
test all of these emotions, we focused our investigation on the basic dichotomy between negative and positive emotions. Zajonc, Murphy, and Inglehart (1989) have asserted that,

Despite disagreement about the taxonomic boundaries of emotion labels, there is virtual full agreement about one important fact - emotions can be discriminated from each other quite reliably according to their positive-negative hedonic polarity. (p.401)

According to Roseman et al. (1990), events appraised as motive consistent elicit positive emotions, and events appraised as motive inconsistent elicit negative emotions. That the valence of emotions comes from the extent to which an event is perceived as motive consistent is implicit or explicit in all cognitive accounts (Clore, Schwartz, & Conway, 1994).

The specific type of event investigated was taking a new job. While attention has been paid to the emotional consequences of job loss (Prussia, Kinicki, & Bracker, 1993), there is a paucity of literature which guides clinicians in helping their clients adjust emotionally to new work situations. This seems surprising, as there are many potentially stressful aspects to this event. For example, periods of prolonged unemployment before taking a new job may impact one's sense of well-being (Amundson & Borgen, 1987; Payne & Jones, 1987). Once beginning new employment, there are a variety of expectations that typically have to be met, such as taking on new roles, working informal overtime, and lack of knowledge about the workplace (Oldfield & Ayers, 1986). The
development of new social networks seems particularly important to success at a new job (Nelson, 1990).

The framework that guided the selection of variables in this study consists of (a) the antecedent variable of coping, as measured by six specific types of coping resources, (b) the appraisal dimension of situational state, hypothesized by Roseman et al. (1990) to differentiate positive from negative emotions, and (c) the outcome variables of positive and negative emotions. The model we tested extends Folkman and Lazarus’s (1984) theory in that the role of appraisals of coping resources in impacting evaluations of events was investigated. If support were found for this model, it may suggest that attention be paid to the coping resources of clients involved in activities such as job searches and beginning new employment because estimations of one’s coping resources may have a direct effect on perceptions of the desirability of a job.

Methods

Participants: The participants in this study were 231 masters-level counseling students enrolled in a large, southeastern university. The mean age of participants was 32, with a range from 22 to 56 years of age. Participants were 85% female and 15% male; 92% of the participants were caucasian, 4% African-American, and 4% represented other racial/ethnic backgrounds.

Instrumentation

The event used in this study, taking a new job, was found to be the most often occurring stressor in a study using this same population of participants by Zucker,
McCarthy, Orenstein, & Brack (1992) and was experienced by 45% of participants within the year prior to taking the survey.

**Cognitive appraisals:** Cognitive appraisals about taking a new job were measured using a questionnaire adapted from Roseman et al. (1990). Participants were next asked to identify the emotions associated with the last time a new job was taken. Participants were provided with all 16 of the emotions which are a part of Roseman et al.'s (1990) model, and asked to rate the intensity with which they experienced each emotion on a 10 point Likert scale from 0 ("not at all") to 9 ("very intense"). Participants were next asked to "tell the story of what happened when you took the new job." This parallels Roseman et al.'s (1990) procedure, except that the particular event of taking a new job was specified. Participants were then asked, "What was it in the situation you just described that directly caused you to feel the emotion(s) you indicated?" Participants next completed a 17-item inventory designed to measure appraisals. Questions were ordered randomly on the questionnaire. In this study, only the items measuring consistency with motives were used. Roseman et al. (1990) found the internal consistency reliability of this scale to be 0.86. Cronbach's alpha for this study of the situational state appraisal dimension was 0.77. One example of an item on the situational state appraisal dimensions is, "At the time, did you think of this event as consistent with what you wanted, or inconsistent with what you wanted?".

**Coping Resources Inventory for Stress**

The Coping Resources Inventory for Stress (CRIS) (Matheny et al., 1987) was
developed as a 280 item battery for measuring coping resources which contribute to the successful management of stress. Support has been found for the convergent and divergent validity of the CRIS (Matheny, Curlette, Aycock, & Junker, 1993). Based on McCarthy and Brack's (1993) findings, the particular scales used in this study were Cognitive Restructuring, Functional Beliefs, Social Ease, Social Support, Confidence, and Structuring. Confidence measures one's faith in their ability to cope successfully with stressful life situations (similar to Bandura's (1986) concept of self-efficacy); Self-Directedness measures the degree to which one respects his/her judgement and wisdom as a guide to behavior; Financial Freedom assesses the extent to which a person is free from stress related to financial difficulties; Tension Control measures the ability to lower arousal through relaxation procedures and thought control; Structuring is the ability to organize and manage resources such as time and energy; and Social Ease measures the degree of comfort one experiences in the presence of others. These scales were selected because of their relationship to the other variables under investigation, namely cognitive appraisals and the emotions produced by stressful events (McCarthy & Brack, 1993). The overall Coping Resources Effectiveness scale (CRE) has a coefficient alpha of .97 and its test-retest reliability over a four-week period for college students is .95 (Curlette, Aycock, Matheny, Pugh, & Taylor, 1990). The coefficient alphas for the scales used in this study range from .91 to .87 and the test-retest reliabilities range from .91 to .76 (Curlette et al., 1990).
**Statistical Analyses**

Structural equation modelling was used to test the theoretical predictions among variables used in this study. Development of the measurement model involves specifying which observed variables will make up each construct (Anderson & Gerbing, 1988). Hypothesized structural models are supported if the overall fit of the model to the observed data is adequate and if the relevant structural coefficients between latent variables are statistically significant and in the predicted direction (Bollen, 1989).

**Procedures**

The survey instruments were distributed to students in classroom settings. Participants first responded to a demographics questionnaire asking about their age, ethnic group, and marital status. They then completed the questionnaire measuring cognitive appraisals and emotions about taking a new job adapted from Roseman et al. (1990) for each of the two negative emotions to which they were assigned. Finally, participants were asked to complete the CRIS.

**Results**

**Descriptive and Correlational Data**

Table 1 presents the means, standard deviations, and ranges of the variables used in the structural model. As can be seen from the table, respondents on average reported levels of coping resources in excess of the average score of 50 on the CRIS (Curlette et al., 1990). The overall average on the situational state variable (\( M = 7.32 \)) may indicate that in general respondents viewed the event of taking a new job as fairly consistent with
their goals, as the scaling on that variable ranged from 1 (not at all consistent with motives) to 9 (very consistent with motives). The average intensity ratings for the positive emotions were higher than for the negative emotions, which also supports the notion that this was a positive event for many.

The correlation matrix of all variables used in the structural model is presented in Table 2. Correlation coefficients with absolute values greater than .18 are significant at $p < .01$; coefficients with values between .17 and .13 are significant at $p < .05$; coefficients less than .13 are non-significant. Positive intercorrelations were found for the CRIS subscales used in the study, which was also reported by Curlette et al. (1990). The correlations between positive emotions and coping resources were generally positive and the correlations between negative emotions and coping resources were generally negative, which indicates that higher levels of coping resources were associated with greater levels of positive affect and lower levels of coping resources were associated with negative affect. As predicted by Roseman et al. (1990), the higher ratings of consistency with motives for taking the new job (situational state) were positively associated with positive feelings and negatively associated with negative feelings.
Structural Model

Data analysis was conducted with the computer programs PRELIS and LISREL 8 (Joreskog, & Sorbom, 1993). The measurement model to be used in the structural model was based on previous research and theory. Six coping resources were hypothesized to measure the construct of coping by McCarthy and Brack (1993): Self-directedness, Confidence, Financial Freedom, Tension Control, Structuring, and Social Ease. The appraisal dimension of situational state differentiates positive from negative affect in Roseman et al.’s (1990) model, and thus this construct was tested in the path model with the three appraisal items from Roseman et al’s (1990) questionnaire. The constructs of positive affect and negative affect were measured with emotions hypothesized by Roseman et al. (1990). McCarthy (1995) found that Roseman et al.’s (1990) hypothesized emotions could be reduced, using factor analysis, to two factors: positive and negative emotion. The following emotions from that factor analysis were used in this study to measure positive affect: joy, relief, pride, and hope and the following emotions measured negative affect: distress, sadness, fear, frustration, and regret. All coefficients in the measurement model were significant ($t > 4.0, p < .01$).

Figure 1 depicts the structural model. The correlation matrix was analyzed in the LISREL analysis and a maximum likelihood solution was used. The following goodness-of-fit and structural relations indices for the final structural model were found: $X^2 (129, N = 231) = 187.47, p < .01, X^2/df = 1.45$ (Carmines and McIver 1981 have suggested using ratios of less than 2); goodness of fit = 0.92. The LISREL GFI is influenced by
sample size and it is difficult to set evaluations standards for its interpretation. However, values above .90 are considered good. Bollen (1989) points out that several indices should be used in evaluating such models as all goodness of fit indices have drawbacks. The following fit information was found: adjusted goodness of fit = 0.89; normed fit index = 0.88; non-normed goodness of fit index = 0.95; root mean square residual = 0.067; root mean square error of approximation = 0.05. The overall pattern of fit information would appear to suggest an acceptable model.

The coefficients reported for observed and latent variables in Figure 1 are the LISREL completely standardized estimates. The observed variable with the highest loading on coping was confidence, followed by self-directedness, tension control, social ease, structuring, and financial freedom. The constructs of positive affect and negative affect were measured with the emotions hypothesized by Roseman et al. (1990). The four positive emotions which loaded significantly on the construct of positive emotion were, in order of their contribution to the construct, joy, pride, relief, and hope. The five negative emotions which loaded on the construct of negative emotion were, in order of their contribution to the construct, frustration, sadness, regret, distress, and fear. All three situational state questionnaire items from Roseman et al. (1990) loaded on the construct of situational state.

The model specified above, with a path from the construct of coping to positive and negative affect, mediated by the construct of appraisals of situational state, was supported in the structural equation model (see Figure 1). The standardized path
coefficient from coping to cognitive appraisals of situational state (0.57) was significant ($t = 4.13, p < .01$). Squaring the values of standardized path coefficient yields the amount of variance accounted for, and in this case would indicate that perceived levels of coping resources accounted for approximately 25% of the variance in appraised desirability of taking the new job. The path from the situational state appraisal dimension to positive affect (0.38) was significant ($t = 5.62, p < .01$); and the path from situational state to negative affect (-0.39) was significant ($t = 6.19, p < .01$). This supports Roseman et al.'s (1990) hypothesis that appraised consistency of events with one's motives produces positive affect and appraised inconsistency with motives produces negative affect.

Discussion

Lazarus (1991) has argued that occupational stress cannot be understood apart from the subjective evaluations that individuals make. The results of this study support some of the basic tenets of transactional models of stress as well as the potential usefulness of Roseman et al.'s (1990) appraisal model of emotions in specifying more precisely how evaluations of external events result in specific emotional experiences. However, this study suggests that coping resources may play a role in influencing primary appraisals of the desirability of a new job.

Due to restrictions in the measures, methods, and population used several
cautions should be observed in generalizing the results of this study. First, the sample was relatively homogenous with respect to gender, race, and educational background. The sample was comprised of graduate counseling students, and it should not be inferred that their vocational experiences necessarily reflect those of the population at large. A more diverse sample would be necessary to generalize the results of this study. In addition, only the event of taking a new job was investigated in this study, and other types of vocational events would need to be studied to further investigate the applicability of this model to vocational development. Although what we believe to be the most fundamental aspect of Roseman et al.'s (1990) model was tested (differentiation of positive and negative affect), other appraisals dimensions and some emotions were not included in the model. This may explain why the standardized path coefficients from situational state to positive and negative affect were relatively low (absolute values of standardized path coefficients of .38 and .39 respectively) when compared to the path from coping to situational state (.57): other appraisal dimensions hypothesized to account for variance in emotional experience were not included. It should also be noted that caution is warranted in the use of self-report methodology and in inferring causal relations from correlation-based studies.

Support was found for Roseman et al.'s (1990) appraisal theory in that appraisals of consistency of a new job with one's motives were related to positive emotion and inconsistency with motives to negative affect. Coping resources were not found to moderate the relationships between appraisals and emotions, but instead were found to
impact initial appraisals of desirability. One potential explanation for the direct connection between appraisals and affect found in this study may be the use of discrete emotions as outcomes measures. Morris (1992) defines emotions as resulting from appraisals of external circumstances as opposed to moods, which concerns states of internal resources. Frijda (1986) and Schartz and Clore (1988) discuss emotions as having a specific focus, whereas moods are nonspecific. Clore, Ortony, Dienes, and Fujita (1993) have stated that a consequence of this viewpoint is that cognitive causes are essential for emotions, but not for moods. Thus, a person could be despondent at a new job simply because of their biochemistry and not because they appraised the job as unrewarding. Clore et al. (1994) summarize the distinction between emotions and moods as follows,

The basic cognitive model is that emotions result from ongoing, automatic, but implicit appraisals of situations with respect to whether they are positive for one's goals and concerns (e.g. Arnold, 1960). (p. 326-327)

This may suggest that vocational researchers be very precise about outcome measures when testing transactional models of stress. The results of this study may suggest that when specific emotional states are measured, cognitive appraisals of external events have a direct impact on emotional experience. Other studies of transactional models of stress which have found support for coping resources as mediators of emotional response have used outcome measures which are closer to mood, such as anxiety and depression (Long, Kahn & Schutz, 1992). It is possible that individuals are
predisposed, partially as a function of perceived coping resources, to appraise vocational events in specific ways which in turn lead to specific emotional experiences. These feelings can then be understood in terms of appraisals models such as that suggested by Roseman et al. (1990).

A potential application of structural models of emotions to vocational adjustment may be their potential for specifying how specific types of appraisals lead to specific emotions. Working with a model such as that proposed by Roseman et al. (1990), a vocational counselor could help clients understand the specific types of appraisals they are making and the relationship of these thoughts to their feelings. Or conversely, given a presenting emotion, such as frustration about a new job, a vocational counselor could help a client uncover the specific appraisals which maintain this emotion. In the long term, chronic experience of negative affect may lead to problematic mood states such as depression and anxiety which are no longer governed specifically by the particulars of a situation (Clore et al., 1994). This would seem to suggest that early interventions aimed at uncovering appraisal sets which are causing negative affect would be in the best interests of employees.

The results of this study might suggest that highly resourced individuals are more likely to perceive taking a new job in positive terms. The finding that coping resources impact initial evaluations of the desirability of a job suggests that instead of only seeing coping resources as potential sources of strength, available to a client if needed but otherwise dormant, vocational counselors might benefit from expanding their view of
coping resources to include their possible role in subjective evaluations of external events. Some support for this is provided by Nelson and Sutton's (1990) finding that choice of a specific coping strategy failed to account for distress symptoms among 91 organizational newcomers. In light of the present study, such results might be interpreted to mean that coping resources only indirectly influence specific emotions in the workplace, and that appraisals of external events must be taken into account.

We do not intend to suggest that vocational counselors attempt to turn their clients into workforce Pollyannas who remain stubbornly optimistic despite all evidence to the contrary. Bridges (1991) has stressed the importance in vocational counseling of clients being able to evaluate potential advantages and drawbacks to vocational events. Instead, as suggested by Sturner (1990), self-assessment of one's resources before beginning a new job may be important in emotional outcome. Clients with higher levels of coping resources may be better able to find positive aspect to new jobs and may be less likely to be deterred by the negatives.

Two specific coping resources, which were found to be most important in impacting cognitive appraisals, seem closely tied to previous findings in the vocational literature. The observed variable which contributed most to the latent construct of coping was confidence (.66), which is closely associated with Bandura's (1982; 1986) concept of self-efficacy (Curlette et al., 1990). Considerable evidence exists that faith in one's ability to handle life demands is predictive of successful work transition (Betz & Hackett, 1986; Hackett & Betz, 1981; Heppner, Cook, Strozier, & Heppner, 1991; Lent,
Brown, & Hackett, 1994, Mallinckrodt, 1990; McAuliffe, 1992). In particular, Betz & Hackett (1986) have suggested that Bandura's views on self-efficacy be incorporated into career services by using interventions which will increase client's self-efficacy expectations. Relatedly, the coping resource of self-directedness, or one's faith in their ability to make judgements, decisions, and shape the course of their own lives, was the variable with the second strongest relationship to the construct of coping (.43). This seems to fit the extensive body of literature on decision-making in career development (Gelatt, 1962; Harren, 1979; Miller-Tiedeman & Tiedeman, 1990; Slovic, 1975; Zakay & Barak, 1984).

Beginning a new job is a common and important experience for many individuals. Several authors (Bruce & Scott, 1994; Elliott et al., 1994) have underscored the potential disruption and distress experienced by those who view such experiences as threats instead of opportunities. Although steps can certainly be taken to reduce stress in the workplace after it has occurred (Colapietro & Rockwell, 1985), the results of this study suggest that individuals who perceive themselves as highly resourced are more likely to find new work situations desirable at the outset. We would suggest that further attention to the factors which help in this process would benefit career counselors and their clients.
REFERENCES


Table 1

**Means, Standard Deviations, and Ranges of Variables in the Final Model**

<table>
<thead>
<tr>
<th>Observed Variable</th>
<th>M</th>
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<td><strong>Coping Resources</strong></td>
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<tr>
<td>self-directedness</td>
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<td>68.50</td>
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<td>64.10</td>
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<td>social ease</td>
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<tr>
<td><strong>Appraisal</strong></td>
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<tr>
<td>situational state</td>
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<td><strong>Emotions</strong></td>
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*Note: N = 231*
Table 2: Correlations Among all Variables in Final Model

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Note. Decimals in correlations have been omitted. SDI = self-directedness; CON = confidence; FIF = financial freedom; TEN = tension control; STR = structuring; SOC = social ease; SIT = situational state; JOY = joy; REL = relief; PRI = pride; HOP = hope; DIS = distress; SAD = sadness; FER = fear; FRS = frustration; REG = regret. Higher scores on coping resources indicate greater consistency with motives; higher scores on emotion scores represent greater reported intensities of that emotion.
Figure 1

Structural Model of Coping Resources, Appraisals, and Emotions for Taking a New Job

Note. All paths shown are significant; standardized LISREL estimates are indicated. SDI = self-directedness; CON = confidence; FIF = financial freedom; TEN = tension control; STR = structuring; SOC = social ease; COP = coping; SIT = situational state; SS1, SS2, & SS3 = appraisal items from Roseman et al.'s (1990) questionnaire; POS = positive emotion; JOY = joy; REL = relief; PRI = pride; HOP = hope; NEG = negative emotion; DIS = distress; SAD = sadness; FER = fear; FRS = frustration; REG = regret.
# Structural Model of Coping, Appraisals, and Emotions in Vocational Transition

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**Author(s):** Christopher J. McCarthy, Greg Brack, Richard Lambert  
**Corporate Source:** N/A  
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