
Effects of Self-Statements and Coping Strategies on Adaptational Outcomes of Stress

Max R. Uhlemann and Sharon A. Plater

University of Victoria

Abstract

There were three connected purposes of this study. One purpose was to examine the mediating role of self-statements in the stress-symptomatology relationship. The second was to assess the degree to which coping strategies discriminate between adaptive and maladaptive stress reactions. The third was to determine if a relationship exists between self-statements and coping strategies. Sixty-two female subjects completed the Life Experiences Survey, Hassles Scale, Hopkins Symptom Checklist, and Physical Concerns Scale. In addition, journal entries of stressful incidents, self-talk patterns and coping strategies were obtained. Results indicated that self-statements did not discriminate significantly between individuals who effectively or ineffectively handled stressful encounters. Only the information-seeking coping strategy showed a trend toward a significant effect on the stress-symptomatology relationship. Several categories of self-statements and coping strategies were significantly related. Implications of the findings are discussed.

Résumé

Il y avait trois buts interreliés dans cette étude. Le premier but était d'examiner le rôle médiateur des auto-motivants dans la relation stress-symptôme. Le second but était d'évaluer le degré de discrimination des stratégies d'auto-motivation et "coping" entre des réactions de stress adaptatives et non-adaptatives. Le troisième but était de déterminer si une relation existe entre les stratégies d'auto-motivation et "coping." Soixante-deux femmes ont complétées le "Life Experiences Survey," "Hassles Scale," "Hopkins Symptom Checklist," et le "Physical Concerns Scale." En plus, il y avait des entrées dans un journal personnel d'incidents stressants, le modèle des voix internes et des stratégies de "coping" ont été obtenus. Les résultats ont indiqués que les auto-motivants ne se discriminent pas significativement entre les individus qui contrôlent efficacement ou inefficacement les rencontres stressantes. Seulement l'information qui focalisait sur la stratégies de "coping" démontrait un lien dans la relation stress-symptôme. Plusieurs catégories d'auto-motivation et des stratégies de "coping" étaient significativement reliées. Les implications de ces résultats sont discutées.

Although the volume of research about stress has increased dramatically over the past decade, our general understanding of the phenomenon has not developed at the same pace. While evidence supports the existence of a relationship between stress and adaptational outcomes (e.g., Rabkin & Struening, 1976; Theorell, 1974; Vinokur & Selzer, 1975), the factors influencing this relationship are still largely undefined. In an attempt to account for some of the variance in the stress-symptomatology relationship, investigators have recently focused attention on a broad spectrum of possible contributing forces (e.g., Folkman, 1984; Kanner, Coyne, Schaefer, & Lazarus, 1981; Kobasa, Hilker, & Maddi, 1979; Smith, Boaz, & Denney, 1984). One potentially powerful set of factors under study are cognitive mediating variables (Johnson & Sarason, 1979).

Cognitive theorists have long asserted that the manner in which individuals perceive, appraise, categorize, and think about a situation influences their subsequent emotional and behavioural reaction to the event (Beck & Emery 1985; Goldfried & Goldfried, 1975; Meichenbaum, 1985). The relationship of cognitive processes to human functioning has been explored extensively on a theoretical level and to a lesser degree empirically (e.g., Borkovec, Robinson, Prezinsky, & DePree, 1983; La Pointe & Harrell, 1978; Sewitch & Kirsch, 1984; Velton, 1968). The results, however, have been inconsistent. In addition, differences of opinion exist as to whether the empirical data support or discount the basic elements of cognitive theory (Lazarus, 1981; Rogers & Craighead, 1977).

Theory and research offer tentative support for the mediating role of cognitive processes. However, the mechanisms by which they operate remain obscure (Eisdorfer, 1977). Until the operational mechanisms influencing the stress-illness relationship are better understood, little can be done in the way of prevention or rehabilitation to enhance the general population's encounter with stressful experiences.

Attempts to understand the role that cognitive processes play have progressed in two main areas. The first area has focused on assessing how individuals process their environment or how they determine, (a) "What's going on here?" and (b) "What can I do about this situation?" Lazarus (1981) refers to these processes as "primary appraisal" and "secondary appraisal," respectively. The most efficient means of accessing this information is by monitoring self-talk patterns. Research on the relationship between self-talk and emotional-behavioural outcomes has been contradictory (e.g., Bartlett, 1980; Bruch, Juster, & Kaflowitz, 1983; Galassi, Frierson, & Siegel, 1984; Harrell, Chambless, & Calhoun, 1981; Hollon & Kendall, 1980). Several reasons can be postulated for the inconsistent nature of these results. Often only the valence of the statements is noted, while the content or object of the thought goes largely unnoticed. Most of the studies use one-time, standardized, non-personal, and experimenter generated stimuli to infer generalized real-life reaction patterns. Due to the diverse range of stimuli and administration/measurement procedures used, no basis for comparison exists.

Assessing coping strategies employed by individuals is the second area in which the functional dynamics of cognitive processes have been examined. Coping refers to the cognitive or behavioural processes individuals use to dispel internal or external demands that are appraised as draining or surpassing their resources (Lazarus & Folkman, 1984). Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen (1986) contend that coping is a potentially powerful mediating vari-

able in stress reactions. However, the limited amount of research, focusing directly on the impact of the coping strategy, has generated findings of a contradictory nature (Andrews, Tennant, Hewson, & Vaillant, 1978; Girodo & Stein, 1978; Vaillant, 1976). Andrews et al. (1978) speculated that the role of coping in stress responses may be hard to determine due to the difficulties inherent in measuring a variable as complex as coping.

The present study was designed to (a) examine the mediating role that self-statements play in the stress-symptomatology relationship, (b) assess the degree to which coping strategies discriminate between adaptive and maladaptive reactions to stress, and (c) determine if a relationship exists between self-statements and coping strategies. To enhance the clarity of information gathered in this study, an ipsative format was used to assess subjects' response patterns to real life situations, and dual measures of stress level were employed. This framework enhanced the potential for developing a deeper understanding of the interplay between various facets of the stress-reaction process.

METHOD

Subjects

Seventy-five women, age 17 to 60, who were affiliated with one of five community organizations, served as subjects. Of the original 75 participants, 62 completed all aspects of the study, and were included in the final analysis.

Instruments and Scoring Procedures

Questionnaires as well as written descriptions of actual life events were used in this study.

Questionnaires. An indication of the amount of stress occurring in a subject's life was obtained through the use of two self-report questionnaires. The Life Experiences Survey (Sarason, Johnson, & Siegel, 1978), a self-report inventory of 47 items, provided information regarding major changes in life circumstances. Each item in the survey represents a specific concrete life event. Subjects check those items they have experienced within the previous year and rate the degree to which each event affected their lives. The responses are recorded on a 7-point Likert Scale which ranges from -3 (extremely negative) to +3 (extremely positive). Scores for positive change, negative change and total change are obtained from the data. In two investigations, Sarason et al. (1978) noted test-retest reliabilities of 0.19 and 0.53 for positive change, 0.56 and 0.88 for negative change, and 0.63 and 0.64 for total change.

The second instrument used for assessing stress was the Hassles Scale (Kanner et al., 1981) which examines minor everyday irritations. The scale consists of 117 items assembled in a self-report format. Each item represents a distinct life experience. Responses are recorded on a 3-point scale, ranging from 1 (somewhat severe) to 3 (extremely severe). Scores pertaining to frequency, cumulated severity and intensity are derived from the data. Research by Kanner et al. (1981) revealed average test-retest reliability coefficients of 0.79 for frequency and 0.48 for intensity.

The Hopkins Symptom (HSCL) (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) was used to gather data pertaining to psychological functioning. The HSCL checklist is a 58-item self-report checklist where each item represents one specific feeling, thought or behaviour. Subjects indicate on a 4-point scale, ranging from 1 (not at all) to 4 (extreme distress), the degree of distress experienced when such events occurred during the previous two weeks. The HSCL yields five subscales: isomatization, obsessive-compulsive, interpersonal sensitivity, depression, and anxiety. Test-retest and interrater reliabilities have been found fairly stable, at 0.75 to 0.85 and 0.65 to 0.80, respectively (Derogatis et al., 1974).

Physical well-being was assessed using a Physical Concerns Scale (Plater, 1982). The material for this scale was compiled by a medical professional on the basis of common ailments recorded in medical records. Thirty items were presented in a self-report format. Each item refers to one or a group of physical complaints categorized into ten sections (eight major body systems, common diseases and illnesses). Using a 4-point scale, subjects rate each symptom on three dimensions: frequency, duration and intensity. A pilot study revealed mean test-retest reliabilities of 0.82 for frequency, 0.80 for duration, and 0.88 for intensity.

Structured Descriptive Exercise. During the week following the administration of the questionnaires, subjects were instructed to record two stressful events in a booklet provided. Subjects were asked to describe each event in detail, and to list any self-statements that were present during or shortly after the experience. They were also asked to outline the coping strategy employed and to evaluate the effectiveness of this strategy.

Content analysis scoring systems were designed to summarize the self-statement and coping strategy data obtained from the descriptive reports. Self-statements were sorted into one of five categories: thoughts about self, thoughts about the interaction, thoughts about other individuals(s) involved, irrelevant thoughts (Merluzzi, Cacioppo, & Glass, 1979) and planning self-talk. The data was summed by calculating the total number of statements per category, per subject

for each of the two stressful situations. The five categories were further broken down to indicate three levels of self-statement valence; positive, neutral or negative. Pilot work revealed interrater reliability of 79% for category consistency and 80% for valence.

Coping strategies were sorted into five dimensions: information seeking, direct action, inhibition of action and intrapsychic modes (Lazarus & Launier, 1978), and a category covering all irrelevant and indiscernible responses. For each of the stressful situations, the total number of responses per category, per subject were calculated using content analysis. Interrater reliability indicated that 94% of the coping responses were rated in a consistent manner. To assess the effectiveness of the coping strategies employed, subjects were asked to address the question, "Do you feel the coping strategy used in this situation resulted in a positive outcome?" Space was provided for a simple yes or no response as well as explanatory comments.

Procedure

A brief description of the study was presented to members of five community organizations at their regular meeting or through notices in the newsletters and on bulletin boards. Interested individuals who contacted the researcher were given a more detailed description, and if still interested they were invited to a small group meeting. During the initial session subjects were required to complete four randomly ordered questionnaires. In addition, they were given instructions regarding the structured descriptive exercise which comprised the final, at-home portion of the study. Subjects returned completed material to the researcher at a designated location.

RESULTS

Three sets of comparisons were drawn from the data: self-statements with adaptational outcomes, coping strategies with adaptational outcomes, and self-statements with coping strategies.

To facilitate the analysis of the role of self-statements in the stress-symptomatology relationship, four subject groups were developed: high stress/high illness, high stress/low illness; low stress/high illness, and low stress/low illness. Assignment of subjects of one of the four groups was based on scores obtained on The Life Experience Survey, The Hassles Scale, The Physical Concerns Scale and the Hopkins Symptom Checklist. To simplify subject placement, The Life Experiences Survey and Hassles Scale measures were combined using the following formula to form one measure of stress.

$$\begin{aligned} & (\text{Hassles frequency} \times \text{hassles intensity}) \\ & + \text{Life Experience 0-12 months negative score} \end{aligned}$$

Measures obtained from the Physical Concerns Scale and Hopkins Symptom Checklist were similarly reduced using the following procedure:

(somatization + obsessive-compulsive
 + interpersonal + depressive + anxiety)
 + (Physical concerns overall frequency
 + physical concerns overall duration
 + physical concerns overall intensity)
 × physical concerns cumulative total

The differentiating point between high and low scores was calculated by inserting the mean scores attained on the stress and symptomatology measures into the above formulas. Each subject was then grouped according to how they deviated from these derived means: stress $M = 49.60$, symptomatology $M = 60.5$. Data was analyzed using a one-way multivariate analysis of variance.

In general, the results revealed that the self-statement categories failed to discriminate between the four stress-symptomatology groups, $F(21,322) = 1.470$, $p > 0.05$. A visual comparison of means showed that the low stress/high illness group reported fewer negative thoughts and thoughts about others than the high stress/low illness group ($M = 8.4$ and 11.5 vs. $M = 5.30$ and 8.12 , respectively).

The role of coping strategies in the stress-symptomatology relationship was examined using an identical procedure to that outlined above for self-statements. The multivariate procedure did not indicate a significant treatment effect, $F(21,322) = 1.236$, $p > 0.05$, however, a significant univariate ANOVA for the information seeking coping strategy was found, $F(3,58) = 3.167$, $p < 0.05$. While the absence of significant multivariate effect requires the univariate statistic to be considered spuriously high, the means for this coping strategy present an interesting trend and are valuable for their connection to other findings obtained. Visual comparison of the information seeking means revealed that the high stress/low illness group used information seeking as a coping skill more often than the high stress/high illness group ($M = 0.50$ vs. 0.09 , respectively), and the low stress/high illness group ($M = 0.50$ vs. 0.00 , respectively).

Coping was further assessed by using the Chi square of proportionality to determine the degree to which the four strategies were perceived as effective. Dimensions of the Chi square were the four coping strategies and a "yes" or "no" response to effectiveness. Results indicated that direct action was the only coping strategy significantly related to perceived effectiveness, $\chi^2(18) = 35.62$, $p < 0.01$.

The Chi square of porportionality was also used to assess the relationship between the type of self-statement emitted and coping strategies used. Numerical values indicating the number of times each dimension appeared formed the basis of comparison. Thoughts about the interaction, both total (negative and positive) and negative alone, were found to be significantly related to the direct action coping strategy, $X^2(100) = 136.837, p < 0.01$ and $X^2(6) = 81.019, p < 0.05$, respectively. Negative thoughts about the interaction were also significantly related to information seeking, $X^2(12) = 31.699, p < 0.01$. In addition, self-statements of a planning nature were significantly related to the information seeking coping strategy, $X^2(14) = 25.510, p < 0.05$. A significant relationship was found between positive self-statements, and intrapsychic coping processes, $X^2(36) = 51.291, p < 0.05$. Finally, a significant relationship was found between neutral self-statements and information seeking, $X^2(16) = 28.675, p > 0.05$.

DISCUSSION

The results indicate the complexity of issues involved in the appraisal/coping process. The findings indicated that self-statements did not serve as a mediating variable in the stress-symptomatology relationship. Minimal support was found for the mediating role that coping responses play in the relationship between stress and adaptational outcomes. And finally, partial confirmation was found for a relationship between self-statements and coping strategy. Each set of comparisons is discussed below.

Mediating Role of Self Statements

The finding that neither self-statement type nor valence exerted a significant effect on the relationship between stress and adaptational outcomes provides both positive and negative support for previous research (Folkman et al., 1986; Harrell et al., 1981; Hollan et al., 1980; La Pointe & Harrell, 1978). The discrepancy which exists among the findings may stem from the fact that replications confirming initial studies relating to the role of self-statements and cognitive processes are virtually non-existent. Rather than substantiating the original evidence, researchers have moved forward, examining the many other pieces of the puzzle. At this point it would seem productive also to do as in the current study, and take a step backwards. This means focusing on substantiating the theoretical base associated with self-referent speech before moving on to more remote topics.

The manner in which negative thoughts discriminated between high stress/low illness and low stress/high illness groups contradicts findings reported by Bartlett (1980) and Merluzzi et al., (1979). Cognitive-behaviourists have long asserted that irrational beliefs

(Ellis, 1962) and negative self-talk (Beck, 1976; Meichenbaum, 1974) are linked with maladaptive emotional and behavioural responses. However, until recently the amount of empirical evidence supporting this theoretical position has been small. The information obtained in the current study suggests that the detrimental effects associated with negative self-statements may not be as all-encompassing as originally believed.

This information is important for practitioners who attempt to improve clients' level of functioning by altering their attitudes, self-perceptions or patterns of internal dialogue. If, as in the current study, a greater number of negative self-statements is associated with an increased ability to effectively handle stressful encounters, then decreasing their occurrence is not an effective method of altering clients' reactive processes. For example, if an individual's blood pressure rises rapidly to a dangerous level, the professional will want to be sure that the intervention strategies used will not further deplete the individual's already limited coping resources. This speculation is contrary to current theory and practice and requires rigorous research examination.

Support for the finding that thoughts about others differentiated between the stress-symptomatology groups was provided by Merluzzi, et al. (1979), who noted that highly socially anxious subjects thought less about the interaction and other individuals than lower socially anxious subjects. Those individuals who think less about themselves and more about the others involved may be less apt to become involved in a perpetual self-praising or self-negating cycle that may be unrealistic in view of the circumstances at hand. In addition, individuals focusing mainly on other people may be attempting to gain an understanding of what happened, of how the other person was reacting, and what is of value to them regarding this examination. In the latter instance an opportunity exists for the individual to develop a creative analysis and approach to the situation. For example, an inward-oriented individual may interpret a boss's comments as meaning he or she is incompetent, which might lead to a high level of energy directed to defeating this inaccurate assessment. An outward-oriented individual, on the other hand, may realize that the boss is overloaded. As a result, this person might attempt to be of assistance or objectively re-evaluate personal performance, acknowledging weaknesses, and developing methods of improvement. Counsellors could help this process by first ascertaining the object of a client's thoughts and, if necessary, refocusing them to more appropriate topics. Additional research is needed to provide affirmation or negation of the observed trend.

Mediating Role of Coping Strategies

The trend toward a significant relationship between the information-seeking coping strategy and low levels of symptomatology merits discussion and finds mixed support in the literature (Andrews et al., 1978; Felton, Revenson, & Hinrichsen, 1984; Stewart & Brown, 1981). Andrews et al. (1978) reported that coping ability did not serve a mediating role between life event stress and psychological impairment. In a study relating disease and accident occurrence to stress level and coping ability, Stewart and Brown (1981) found that the association between coping ability and disease prevalence was non-significant. On the other hand, studies that focused on specific concerns such as post-operative recovery, terminal illness and hypertension, have found that the type of coping strategy employed exerts a significant effect on final outcome (Aldrich & Mendkoff, 1963; Cohen & Lazarus, 1973; and Weisman & Worden, 1976).

One reason that information-seeking tends to differentiate between those who reach physically and emotionally to stress may be due to the fact that the process creates a time lapse between the reception of the stimulus and the output of the response. Asking for further information increases the prospect that the initial impression may be altered on the basis of the new input. It also allows the individual to slow down, regain a foothold, and process the data. In other words, it may afford the individual a much needed breathing space. Dollard and Miller (1950) indicate that the first stage of reasoning is to "stop and think." They feel that an individual who responds immediately when presented with a problem may not have sufficient time to formulate an effective course of action. This position is supported empirically by Bloom and Broder (1950). Practitioners could formulate more useful and consistent interventions if they were confident that providing clients with increased information or a short time-out is the operative mechanism in the significant information-seeking effect. This information might be particularly useful when working with violent clients. If a parent is continually reacting to a child in an abusive manner, it is crucial that the intervention used is specific, manageable and effective. Time-out may be beneficial in the short term but break down over time unless coupled with other strategies such as obtaining increased information about abusive patterns.

The lack of agreement in the literature about the role of coping is possibly a side-effect of the complexity of the construct under consideration. Coping can be divided into two distinct processes, emotion-based coping (White, 1974) and problem-focused coping (Janis & Mann, 1977). Emotion-based coping refers to taking a palliative

approach, while problem-solving is more solution oriented. The degree to which either of these processes will be effective depends on the requirements of the situation at the time. As the dynamics change, so must the coping strategies if they are to produce optimal results. For instance, after the death of a close relative or friend, emotion-based coping strategies are often predominantly used at first. As time passes, however, more problem-focused strategies must be used to deal with ongoing changes and demands. Folkman and Lazarus (1980) found that the context of an event and how it is appraised are the two factors which exert the most powerful effect on the type of coping strategy chosen. Their data revealed that in situations where little option for change existed, emotion-based coping was more often the chosen course of action. Often neither of these processes works well on its own, but becomes productive in conjunction with each other. For this reason, a simplistic analysis of coping process tends to produce information of limited utility. In future studies analysis of the source of stress and whether or not an option for change is perceived to exist would clarify additional relationships between coping style and stress-symptomology relationships.

Relationships of Self-Statement and Coping Strategies

According to Lazarus (1981) appraisal (how a situation is evaluated) and coping (the response made to this appraisal) function in a mutually influential fashion. Findings in the study showed mixed support for this claim.

An interaction between self-statement content and valence factors may have produced the significant relationship between negative thoughts about the interaction and direct action. Negative information, whether self or other generated, is generally less comforting to live with than positive input (Schneider, 1976). When negative thoughts are experienced, a greater push may be exerted to reduce the associated level of discomfort than when positive statements prevail. In addition, if it is feasible to alter the object of the thought, then the likelihood of an attempt to alleviate the negative aspects will be increased. For example, attempting to change another's behaviour can often be a very unproductive expenditure of energy. However, an orientation toward altering a situation or one's own behaviour permits a much greater chance of success. A classic example of this situation involves interactions with an addictive personality. Often women, in particular, fall into the trap of trying to save, rescue or cure an alcoholic. Not until they are able to alter their own reactions to the individual does the situation present any potential for change.

The fact that negative thoughts about the interaction are related to information seeking seems to logically follow from the previous discussion. If direct action is going to be instigated, then it seems feasible that one of the first steps might be to gain more data regarding the situation. In this way a more appropriate plan of action can then be initiated. In light of this, it would be expected that both direct action and information seeking would exert a similar effect on adaptational outcomes to stress. However, as previously mentioned, only information-seeking discriminates significantly between those who do or do not succumb to stress. This discrepancy may have roots in the separate connections these two coping strategies have with other types of self-statement. The present analysis looked at variables in isolation from each other, a condition which rarely exists in reality. Research that considers the intertwining nature of these variables could provide valuable information regarding sequencing, patterns and relative weights of the appraisal and coping processes.

The significant relationship between planning thoughts and information-seeking is readily incorporated within a problem-solving format. If an individual is carrying on an internal dialogue that emphasizes planning, then it seems reasonable to assume that a search for and development of a suitable response is under way. If so, then problem-solving is taking place. Regardless of what the first problem-solving stage is labelled, its primary function is one of accumulating an extensive bank of data regarding the situation at hand (Goldfried & Davison, 1976; Weinstein, Hardin & Weinstein, 1976). In addition, information in the form of feedback is an integral part of the whole problem-solving process.

Under some circumstances an individual's health can be dependent on how well planning and information-seeking are combined in a problem-solving process. A diet-controlled diabetic for example, needs to gather information about daily calorie intake, appropriate food consumption, etc. In addition the individual must plan menus and do on-the-spot assessments and develop alternate plans when dining out in a restaurant or at the home of a friend. Regular feedback from the medical practitioner lets the individual know whether current methods of responding are having the desired effects. This information allows modification of behaviour as needed. Engaging in a systematic approach can greatly reduce the individual's anxiety and increase the likelihood of successfully maintaining a healthy diet.

While planning thoughts were not significantly related to positive adaptational outcomes, information-seeking was. On this basis it can be speculated that teaching individuals to view situations from a planning perspective and to seek out additional information would

increase their ability to handle stressful events successfully. As noted before, in-depth knowledge of this kind of progression would enhance practitioner effectiveness.

Several limitations in the present study should be acknowledged. These include the examination of a relatively small number of stressful events over a short time span, use of one method for monitoring self-statements and coping strategies, and lack of attention to contextual variables and interactive effects of variables under study. It is suggested that researchers conduct longitudinal studies incorporating a larger sample size and multiple measures of the appraisal and coping processes. This would permit examination of how an individual responds to a variety of situations over an extended period of time. This methodology would allow direct assessment of issues related to contextual and personality variables, the interaction between various forms of appraisal and coping, and immediate and long term outcomes.

At the present time an overall picture of coping response to stress is still lacking. While many facets of the appraisal/coping process have been explored, an integration of these component parts has not occurred. Rather than continuing to microscopically analyze selected aspects of appraisal/coping, future research would benefit from a focus on the variables influencing coping effectiveness and the interactive effects of the process.

References

- Aldrich, C. K., & Mendkoff, E. (1963). Relocation of the aged and disabled: A mortality study. *Journal of the American Geriatrics Society, 11*, 401-408.
- Andrews, G., Tennant, C., Hewson, D. M., & Vaillant, G. E. (1978). Life event stress, social support, coping style and risk of psychological impairment. *The Journal of Nervous and Mental Disease, 166*(5), 307-316.
- Bartlett, J. C. (1980). *Coping with stress: An analysis of the correlation between cognitive appraisal variables and stress reaction measures*. Unpublished doctoral dissertation, Ohio State University.
- Beck, A. T., & Emery, G. (1985). *Cognitive therapy of anxiety and phobias*. New York: Basic Books.
- . (1976). *Cognitive therapy and the emotional disorders*. New York: International Universities Press.
- Bloom, B. S., & Broder, L. J. (1950). *Problem-solving processes in college students*. Chicago: University of Chicago Press.
- Borkovec, T., Robinson, G., Prezinsky, T., & DePree, J. (1983). Preliminary exploration of worry: Some characteristics and processes. *Behavior Research and Therapy, 21*, 9-16.
- Bruch, M. A., Juster, H. R., & Kaflowitz, N. G. (1983). Relationship of cognitive components of test anxiety to text performance. *Journal of Counseling Psychology, 3*, 527-536.
- Cohen, F., & Lazarus, R. S. (1973). Active coping processes, coping dispositions, and recovery from surgery. *Psychosomatic Medicine, 35*, 375-389.
- Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A measure of primary symptom dimensions.

- In P. Pichot (Ed.), *Psychological Measurements of Psychopharmacology: Modern problems in pharmacopsychiatry*, (vol. 7, pp. 79-110). Paris: Karger, Basel.
- Dollard, J., & Miller, N. E. (1950). *Personality and psychotherapy*. New York: McGraw-Hill.
- Eisdorfer, C. (1977). Stress, disease and cognitive change in the aged. In C. Eisdorfer & R. O. Friedel (Eds.), *Cognitive and emotional disturbance in the elderly: Clinical issues* (pp. 27-44). Chicago, Ill.: Yearbook Medical Publishers.
- Ellis, A. (1962). *Reason and emotion in psychotherapy*. New York: Lyle Stewart.
- Felton, B. J., Revenson, T. A., & Hinrichsen, G. A. (1984). Coping and adjustment in chronically ill adults. *Social Science and Medicine*, 18, 889-898.
- Folkman, S. (1984). Personal control and stress and coping-processes: A theoretical analysis. *Journal of Personality and Social Psychology*, 46, 839-852.
- , & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Behavior*, 21, 219-239.
- , ———, 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(5), 992-1003.
- Galassi, J. P., Frierson, H. T., & Siegel, R. G. (1984). Cognitions, test anxiety and test performance: A closer look. *Journal of Consulting and Clinical Psychology*, 52, 319-320.
- Girodo, M., & Stein, S. T. (1978). Self-talk and the work of worrying in confronting a stressor. *Cognitive Therapy and Research*, 2(3), 305-307.
- Goldfried, M. R., & Davison, G. C. (1976). *Clinical Behavior Therapy*. New York: Holt, Rinehart and Winston.
- , & Goldfried, A. P. (1975). Cognitive change methods. In F. H. Kanfer and A. P. Goldstein (Eds.), *Helping people change*. New York: Pergamon.
- Harrell, T. H., Chambless, D. L., & Calhoun, J. F. (1981). Correlational relationships between self-statements and affective states. *Cognitive Therapy and Research*, 5(2), 159-174.
- Hollon, S. D., & Kendall, C. K. (1980). Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. *Cognitive Therapy and Research*, 4(4), 383-395.
- Janis, I., & Mann, L. (1977). *Decision making*. New York: Free Press.
- Johnson, J. H., & Sarason, G. (1979). Recent developments in research on life stress. In V. Hamilton & D. M. Warburton (Eds.), *Stress and cognition: An information processing approach* (pp. 205-233). Toronto: Wiley and Sons.
- Kanner, A. D., Coyne, J. C., Schaefer, C., & Lazarus, R. S. (1981). Comparison of two modes of stress measurement: Daily hassles and uplifts versus major life events. *Journal of Behavioral Medicine*, 4, 1-39.
- Kobasa, S. C., Hilker, R., & Maddi, S. R. (1979). Who stays healthy under stress? *Journal of Occupational Medicine*, 21(9), 595-598.
- La Pointe, K., & Harrell, T. (1978). Thoughts and feelings: Correlation relationships and cross-situational consistency. *Cognitive Therapy and Research*, 2, 311-322.
- Lazarus, R. S. (1981). Psychological stress and coping in adaptation and illness. In Z. J. Lipowski, D. R. Lipsett, & P. C. Uhybrow (Eds.), *Psychosomatic medicine: Current trends and clinical applications* (pp. 173-209). New York: Spectrum.
- , & Folkman, S. (1984). Coping and adaptation. In W. D. Gentry (Ed.), *The handbook of behavioral medicine* (pp. 282-325). New York: Guilford.
- , & Launier, R. (1978). Stress-related transactions between person and environment. In L. Pervin & M. Lewis, (Eds.), *Perspectives in interactional psychology* (pp. 287-327). New York: Plenum.
- Meichenbaum, D. (1985). *Stress inoculation training*. New York: Pergamon Press.
- (1974). *Cognitive behavior modification*. Morristown, New Jersey: General Learning Press.
- Merluzzi, T. V., Cacioppo, J. T., & Glass, C. R. (1979). *Cognitive responses and attentional factors in high and low socially anxious males*. Unpublished manuscript, University of Notre Dame.

- Plater, S. A. (1982). *Effects of self-statements and coping strategies on adaptational outcomes to stress*. Unpublished master's thesis, University of Victoria, Victoria, British Columbia, Canada.
- Rabkin, J. G., & Struening, E. L. (1976). Life events, stress and illness. *Science*, *194*, 1013-1020.
- Rogers, T., & Craighead, W. E. (1977). Physiological responses to self-statements: The effects of statement valence and discrepancy. *Cognitive Therapy and Research*, *1*(2), 99-119.
- Sarason, I. G., Johnson, J. H., & Siegel, J. M. (1978). Assessing the impact of life changes: Development of the life experience survey. *Journal of Consulting and Clinical Psychology*, *46*(5), 932-946.
- Schneider, D. (1976). *Social psychology*. Reading, Mass.: Addison-Wesley Publishing Company.
- Sewitch, T., & Kirsch, L. (1984). The cognitive content of anxiety: Naturalistic evidence for the predominance of threat-related thoughts. *Cognitive Therapy and Research*, *8*, 49-58.
- Smith, T. W., Boaz, T. L., & Denney, D. R. (1984). Endorsement of irrational beliefs as a moderator of the effects of stressful life events. *Cognitive Therapy and Research*, *8*, 363-370.
- Stewart, S. C., & Brown, B. M. (1981). The relationship of stress and coping ability to incidence of diseases and accidents. *Journal of Psychosomatic Research*, *25*(4), 225-260.
- Theorell, T. (1974). Life events before and after the onset of premature myocardial infarction. In B. S. Dohrenwend & B. P. Dohrenwend (Eds.), *Stressful life events: Their nature and effects* (pp. 101-117). New York: Wiley and Sons.
- Vaillant, G. E. (1976). Natural history of male psychological health. The relation of choice of ego mechanisms of defense to adult adjustment. *Archives of General Psychiatry*, *33*, 535-545.
- Velten, E. (1968). A laboratory task for induction of mood states. *Behavior Research and Therapy*, *6*, 473-482.
- Vinokur, A., & Selzer, M. L. (1975). Desirable versus undesirable life events: Their relationship to stress and mental distress. *Journal of Personality and Social Psychology*, *32*, 329-337.
- Weinstein, G., Hardin, J., & Weinstein, J. (1976). *Education of self*. Mandala: Amherst, Mass.
- Weisman, A., & Worden, J. W. (1976). The existential plight in cancer: Significance of the first 100 days. *International Journal of Psychiatry in Medicine*, *7*(1), 1-15.
- White, R. (1974). Strategies of adaptation: An attempt in systematic description. In G. V. Coelho, D. A. Hamburg & J. E. Adams (Eds.), *Coping and adaptation* (pp. 133-172). New York: Basic Books.

Note: The data for this study was collected by the second author in partial fulfillment of the M.A. requirements.

About the Authors

Sharon Plater is a doctoral candidate in the Department of Psychological Foundations in Education at the University of Victoria. Her current research interests include the connection between women, work, and stress. She is currently employed at Shoreline/Spectrum Employment Project.

Dr. Max R. Uhlemann is an Associate Professor in the Department of Psychological Foundations at the University of Victoria. His research interests include examining the stress process, the role of verbal and nonverbal behaviour in the counselling relationship, and the cognitive process of the client during counselling.

Address correspondence to Max R. Uhlemann, Department of Psychological Foundations in Education, Faculty of Education, University of Victoria, Victoria, B.C., V8W 2Y2.