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Dynamics of a Stressful Encounter: Cognitive Appraisal, Coping, and Encounter Outcomes

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Despite the importance that is attributed to coping as a factor in psychological and somatic health outcomes, little is known about actual coping processes, the variables that influence them, and their relation to the outcomes of the stressful encounters people experience in their day-to-day lives. This study uses an intraindividual analysis of the interrelations among primary appraisal (what was at stake in the encounter), secondary appraisal (coping options), eight forms of problem- and emotion-focused coping, and encounter outcomes in a sample of community-residing adults. Coping was strongly related to cognitive appraisal; the forms of coping that were used varied depending on what was at stake and the options for coping. Coping was also differentially related to satisfactory and unsatisfactory encounter outcomes. The findings clarify the functional relations among appraisal and coping variables and the outcomes of stressful encounters.

The recent burgeoning of research on coping is indicative of a growing conviction that coping is a major factor in the relation between stressful events and adaptational outcomes such as depression, psychological symptoms, and somatic illness (e.g., Andrews, Tennant, Hewson, & Vaillant, 1978; Baum, Fleming, & Singer, 1983; Billings & Moos, 1981, 1984; Collins, Baum, & Singer, 1983; Coyne, Aldwin, & Lazarus, 1981; Felton, Revenson, & Hinrichsen, 1984; Menaghan, 1982; Mitchell, Cronkite, & Moos, 1983; Pearlin & Schooler, 1978; Schaefer, 1983; Shinn, Rosario, Mørch, & Chestnut, 1984; Taylor, Wood, & Lichtman, 1983; Vaillant, 1977). This new body of research is characterized by an interest in the actual coping processes that people use to manage the demands of stressful events, as distinct from trait-oriented research, which focuses on personality dispositions from which coping processes are usually inferred, but not actually studied (e.g., Byrne, Steinberg, & Schwartz, 1968; Gaines, Smith, & Skolnick, 1977; Kobasa, Maddi, & Courington, 1981; Kobasa, Maddi, & Kahn, 1982).

A critical difference between the trait-oriented and the process-oriented approaches is the significance given to the psychological and environmental context in which coping takes place. In the trait-oriented approach, it is assumed that coping is primarily a property of the person, and variations in the stressful situation are of little importance. In contrast, the context is critical in the process-oriented approach because coping is assessed as a response to the psychological and environmental demands of specific stressful encounters. However, although coping processes are usually assessed contextually, with few exceptions (e.g., McCrae, 1984; Menaghan, 1982; Pearlin & Schooler, 1978; Stone & Neale, 1984), their impact tends to be evaluated without regard to their context. As a result, despite the increased attention that has been given to coping processes, there remains a lack of information about the contextual variables that influence them, and the relation between coping processes and the outcomes of the specific stressful encounters in which they occur. This information is a prerequisite for understanding variations in coping processes and the mechanisms through which coping processes affect long-term outcomes.

This article reports an intraindividual approach to the problem in which each person's coping processes are examined across a variety of stressful encounters. Drawing on the cognitive-phenomenological theory of stress and coping described later, we have measured cognitive appraisal, coping, and encounter outcomes in order to understand the functional relations among these variables. The single stressful encounter and its immediate outcome is the focus of the analysis. Two other levels of analysis are examined in other reports. One report (Folkman, Lazarus, Gruen, & DeLongis, 1986) examined the relations among generalized person characteristics, appraisal and coping processes that are aggregated across encounters, and long-term outcomes. The other report will focus on the couple as the unit of analysis and will examine stress and coping processes within the dyad.

Stress and Coping Theory

This study is based on a theory of psychological stress and coping developed by Lazarus and his colleagues over a number of years (e.g., Coyne & Lazarus, 1980; Lazarus, 1966, 1981; Lazarus, Averill, & Opton, 1970; Lazarus & DeLongis, 1983; Lazarus & Folkman, 1984a, 1984b; Lazarus, Kanner, & Folkman, 1980). The theory identifies two processes, cognitive appraisal and coping, as critical mediators of stressful person-environment relations and their immediate and long-range outcomes.

Cognitive appraisal is a process through which the person evaluates whether a particular encounter with the environment is relevant to his or her well-being, and if so, in what ways. In

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primary appraisal, the person evaluates whether he or she has anything at stake in this encounter. For example, Is there potential harm or benefit with respect to commitments, values, or goals? Is the health or well-being of a loved one at risk? Is there potential harm or benefit to self-esteem? In *secondary appraisal,* the person evaluates what if anything can be done to overcome or prevent harm or to improve the prospects for benefit. Various coping options are evaluated, such as altering the situation, accepting it, seeking more information, or holding back from acting impulsively and in a counterproductive way. Primary and secondary appraisals converge to determine whether the person-environment transaction is regarded as significant for well-being, and if so, whether it is primarily threatening (containing the possibility of harm or loss), or challenging (holding the possibility of mastery or benefit).

Coping is defined as the person's constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the person's resources (Lazarus & Folkman, 1984b). There are three key features of this definition. First, it is *process oriented,* meaning that it focuses on what the person actually thinks and does in a specific stressful encounter, and how this changes as the encounter unfolds. Our concern with the process of coping contrasts with trait approaches, which are concerned with what the person usually does, and hence emphasize stability rather than change. Second, we view coping as *contextual,* that is, influenced by the person's appraisal of the actual demands in the encounter and resources for managing them. The emphasis on context means that particular person and situation variables together shape coping efforts. Third, we make no a priori assumptions about what constitutes good or bad coping; coping is defined simply as a person's efforts to manage demands, whether or not the efforts are successful. This feature contrasts with animal models in which coping is defined as instrumental acts that control an aversive environment and, therefore, reduce arousal (cf. Ursin, 1980). It also contrasts with traditional ego-psychology conceptualizations that consider certain strategies inherently less desirable than others (e.g., Menninger, 1963) or that label a strategy as "coping" as opposed to defense only if it satisfies certain criteria such as adhering to reality (cf. Haan, 1977). Conceptualizations that define coping in terms of a value or outcome tend to create a tautology, whereby the coping process is confounded with the outcomes it is used to explain (see Folkman & Lazarus, 1980, 1985; Lazarus & Folkman, 1984a, 1984b).

Coping has two widely recognized major functions: regulating stressful emotions (emotion-focused coping) and altering the troubled person-environment relation causing the distress (problem-focused coping). Two previous studies have provided strong empirical support for the idea that coping usually includes both functions. Both forms of coping were represented in over 98% of the stressful encounters reported by middle-aged men and women (Folkman & Lazarus, 1980) and in an average of 96% of the self-reports of how college students coped with a stressful examination (Folkman & Lazarus, 1985).

The *immediate outcome* of an encounter refers to the person's judgment of the extent to which the encounter was resolved successfully. The overall judgment is based on the individual's values and goals, and his or her expectations concerning various aspects of the stressful encounter. For example, even though there has not been a resolution of the problem causing distress, an outcome can be evaluated favorably if the person feels that the demands of the encounter were managed as well as could be expected. Or, even though the problem causing distress may have been resolved, an outcome can be judged unfavorable if the resolution is inconsistent with other values and goals, less than what the person thought could be achieved, or creates additional conflicts in the person's social context.

Goals of This Study

The primary purpose of this study is to examine the functional relations among cognitive appraisal and coping processes and their short-term outcomes within stressful encounters. We use an intraindividual approach in order to compare the same person with himself or herself across five stressful encounters. This approach allows us to investigate how shifts away from the individual's typical style of appraisal and coping are related to each other and to the outcome of the stressful encounter. Most research on stress and coping addresses the different although related issue of the cumulative effects of particular styles of appraising and coping on indicators of psychological or somatic well-being. The latter calls for interindividual comparisons using scores that are aggregated over measurement occasions, or single scores that are assumed to represent a stable property of the person's appraisal and coping processes.

Intraindividual and interindividual comparisons address different questions and can lead to different conclusions about the same processes. A study of the effects of daily pleasant and unpleasant events on mood (Rehm, 1978) illustrates this possibility. Rehm found that there were no significant relations between the cumulative frequency of events and mood across 2 weeks when the subjects were compared to each other. However, when within-subjects comparisons were made, it was found that changes in both pleasant and unpleasant events were highly related to fluctuations in daily mood. What mattered was not the individual's overall level of stress compared to other individuals, but rather whether the individual had more or less stress than on previous days. It is possible that the apparent relations between appraisal and coping processes will likewise differ depending on whether they are examined within or across persons.

The present study addresses four specific questions. The first two concern the relations between primary and secondary appraisal and coping. In a previous study of coping in a community-residing sample (Folkman & Lazarus, 1980), we examined the relation between secondary appraisal and coping. Overall, problem-focused forms of coping were used more often in encounters that were appraised as changeable, and emotion-focused forms of coping in encounters appraised as unchangeable. However, we did not evaluate the relation between primary appraisal and coping. Our theory predicts a relation between primary appraisal and coping, but it does not make specific predictions about the relations between particular stakes and particular forms of problem- and emotion-focused coping.

A third question concerns the relation between coping and the short-term outcomes of stressful encounters. Our premise is that coping always involves multiple thoughts and acts, some of them oriented toward regulating emotional distress and others toward problem solving. However, our theory makes no specific

predictions about the relations between problem- and emotion-focused coping and encounter outcomes.

Finally, if we ask about the relation between appraisal and coping, and coping and encounter outcomes, we must address the subsidiary question of whether appraisal processes are also directly related to encounter outcomes. For example, encounters that involve threats to self-esteem or other personal vulnerabilities may be more difficult to resolve successfully than encounters in which the threat is less personal, such as when a goal at work is involved. And encounters that are appraised as unchangeable may be more difficult to resolve favorably than those appraised as changeable.

Method

Sample

The sample consisted of 85 married couples living in Contra Costa County with at least one child at home. The sample was restricted to women between the ages of 35 and 45; their husbands, whose ages were not a criterion for eligiblity, were between the ages of 26 and 54. In order to provide comparability with our previous community-residing sample (Folkman & Lazarus, 1980), the people selected for the study were Caucasian, primarily Protestant or Catholic, and had at least an 8th-grade education, an above-marginal family income ($18,000 for a family of four in 1981), and were not bedridden.

Qualified couples were identifed through random-digit dialing. Prospective subjects received a letter explaining the study, then a telephone call from a project interviewer who answered questions and requested a home interview. Forty-six percent of the qualified couples who received letters agreed to be in the study. The acceptance rate was comparable to that of our previous field study, and not unexpected given that both members of the couple had to be willing to participate for 6 months. The mean age of the women was 39.6, and the mean age for men was 41.4. The mean number of years of education was 15.5, and the median family income was $45,000. Eighty-four percent of the men and 57% of the women were employed for pay. People who refused to be in the study were compared on all the above dimensions and differed significantly from those who participated only in years of education (M = 14.3). Ten couples dropped out of the study, an attrition rate of 11.8%. These couples were excluded from the analysis, yielding a final sample of 75 couples. Interviews were conducted in two 6-month waves from September 1981 through August 1982.

Procedures

Subjects were interviewed once a month for 6 months. Interviews were conducted at their homes, and husbands and wives were interviewed separately by different interviewers on the same day, and if possible, at the same time. The data reported here were gathered during the second through sixth interviews.

Measures

The data were gathered with a structured protocol used by the interviewer to elicit self-report information about the most stressful encounter the subject had experienced during the previous week. This study is based on the self-report interview data concerning primary appraisal, secondary appraisal, coping processes, and the outcome of the encounter.

Primary appraisal, which in this study refers to appraisals of what was at stake in a stressful encounter, was assessed with 13 items that described various stakes. The items were selected on the basis of a review of subjects' responses to open-ended questions in a previous study (cf. Folkman & Lazarus, 1980) and a review of the literature. Subjects indicated on a 5-point Likert scale (1 = *does not apply;* 5 = *applies a great deal*) the extent to which each stake was involved in the stressful encounter he or she was reporting.

The primary appraisal items were submitted to a principal factor analysis with oblique rotation. Five administrations for each of 150 subjects were entered, so that 750 observations were used in the factor analysis. Two factors were comprised of items that cohered both empirically and conceptually, and four additional items did not load on either factor. The first factor included items involving threats to self-esteem: the possiblity of "losing the affection of someone important to you," "losing your self-respect," "appearing to be an uncaring person," "appearing unethical," "losing the approval or respect of someone important to you," and "appearing incompetent." The mean coefficient alpha of the five administrations for the self-esteem appraisal stakes was .78.

The second primary appraisal factor included items involving threats to a loved one's well-being: "harm to a loved one's health, safety, or physical well-being"; "a loved one having difficulty getting along in the world"; and "harm to a loved one's emotional well-being." The mean coefficient alpha for this scale for each of the five administrations was .76. The remaining items were the threat of "not achieving an important goal at your job or in your work"; "harm to your own health, safety, or physical well-being"; "a strain on your financial resources"; and "losing respect for someone else." These items were used individually in analysis, and results based on them should be interpreted cautiously because of this. The intercorrelations among the stakes indices are shown in Table 1.

Secondary appraisal was assessed with four items that describe coping options. The items were originally developed in accord with the theoretical model (Lazarus & Launier, 1978), and they were used with a yes–no response format in a previous study (Folkman & Lazarus, 1980). Subjects indicated on a 5-point Likert scale the extent to which the situation was one "that you could change or do something about," "that you had to accept," "in which you needed to know more before you could act," and "in which you had to hold yourself back from doing what you wanted to do." The intercorrelations among the indices of coping options are shown in Table 2.

Coping was assessed with a revised version of the Ways of Coping (Folkman & Lazarus, 1985). The instrument contains 67 items that describe a broad range of cognitive and behavioral strategies people use to manage internal and/or external demands in specific stressful encounters. The strategies were originally drawn in part from a diverse literature (e.g., Mechanic, 1962; Sidle, Moos, Adams, & Cady, 1969; Weisman & Worden, 1976–1977) and constructed from our own theoretical framework (e.g., Lazarus & Launier, 1978). The original Ways of Coping (Folkman & Lazarus, 1980) contained 68 items that the subject indicated were or were not used in a specific stressful encounter. The revised version differs from the original in that redundant and unclear items were deleted or reworded; several items that were suggested by subjects in previous research were added (e.g., "I prayed," "I jogged or exercised," "I reminded myself how much worse things could be"); and the response format was changed from yes–no to a 4-point Likert scale (0 = *does not apply and/or not used;* 1 = *used somewhat;* 2 = *used quite a bit;* 3 = *used a great deal*).

As noted earlier, in the present study each subject was interviewed five times (months 2–6) about the most stressful encounter that had occurred during the 7 days prior to the interview. As a part of this interview, each subject filled out the revised Ways of Coping. The instructions were "Please read each item below and indicate, by circling the appropriate category, to what extent you used it *in the situation you have just described.*"

The Ways of Coping items were analyzed using alpha and principal factoring with oblique rotation. Oblique rotation was chosen because, from a theoretical perspective, we expect people to choose from a vast array of coping strategies rather than to use one set of strategies to the exclusion of others. Past research on coping supports this model (Folkman & Lazarus, 1980). Three separate factor analyses were completed using different strategies for combining person occasions, or observations. First,

analyses were conducted on the entire 750 observations, 5 from each of 150 subjects, where each of the 5 concerned a different stressful encounter. Second, one stressful encounter per subject (n = 150) was randomly selected from the 750, equally representing each of the 5 time points. An additional sample of 150 stressful encounters was also randomly selected from the 750 total encounters without replacement of the prior 150 encounters, again equally representing each of the 5 time points.

The three factor analyses (using alpha and principal factoring) yielded very similar factor patterns. Thirty-seven items consistently loaded high on the same factor across all 3 analyses. Twenty-two items loaded on the same factor fairly consistently; 8 of these were eliminated on the basis of marginal factor loadings or lack of conceptual coherence with their scale. Seven items did not consistently load on any factor and were therefore eliminated. Because multiple factorings had been conducted, we had several estimates of each item's factor loading. A final principal factor analysis, calling for eight factors, was therefore performed on the 750 observations with the final 51 items in order to get an estimate of each item's factor loading.

The coping scales derived from the factor analytic procedures just described, their alphas, and factor loadings for the items are shown in Table 3. The eight scales accounted for 46.2% of the variance.

Confrontive coping (Scale 1) describes aggressive efforts to alter the situation (e.g., "stood my ground and fought for what I wanted," "tried to get the person responsible to change his or her mind"). It also suggests a degree of hostility (e.g., "I expressed anger to the person(s) who caused the problem") and risk-taking (e.g., "took a big chance or did something very risky," "I did something which I didn't think would work, but at least I was doing something").

Distancing (Scale 2) describes efforts to detach oneself (e.g., "didn't let it get to me—refused to think about it too much," "tried to forget the whole thing"). Another theme concerns creating a positive outlook (e.g., "made light of the situation; refused to get too serious about it," "looked for the silver lining—tried to look on the bright side of things").

Self-control (Scale 3) describes efforts to regulate one's own feelings (e.g., "I tried to keep my feelings to myself," "kept others from knowing how bad things were") and actions (e.g., "tried not to burn my bridges, but leave things open somewhat," "I tried not to act too hastily or follow my first hunch").

Seeking social support (Scale 4) describes efforts to seek informational support (e.g., "talked to someone to find out more about the situation"), tangible support (e.g., "talked to someone who could do something concrete about the problem"), and emotional support (e.g., "accepted sympathy and understanding from someone").

Accepting responsibility (Scale 5) acknowledges one's own role in the problem (e.g., "criticized or lectured myself," "realized I brought the problem on myself") with a concomitant theme of trying to put things right (e.g., "I apologized or did something to make up," "I made a promise to myself that things would be different next time").

Escape–Avoidance (Scale 6) describes wishful thinking (e.g., "wished that the situation would go away or somehow be over with") and behavioral efforts to escape or avoid (e.g., "tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc."; "avoided being with people in general"; "slept more than usual"). These items, which suggest escape and avoidance, contrast with the items on the distancing scale, which suggest detachment.

Table 1
Stakes Indices: Intercorrelations Averaged Over Five Occasions

Stakes	Index 1	2	3	4	5	6
1. Own physical well-being	—	.14	.05	.13	.06	.22
2. Self-esteem		—	.23	.03	.29	.20
3. Goal at work			—	.31	.15	−.17
4. Financial strain				—	.12	.13
5. Lose respect for other					—	.11
6. Loved one's well-being						—

Table 2
Coping Options Indices: Intercorrelations Averaged Over Five Occasions

Coping options	Index 1	2	3	4
1. Could change	—	−.49	.14	−.10
2. Had to accept		—	.00	.01
3. Needed to know more			—	.09
4. Had to hold back				—

Planful problem-solving (Scale 7) describes deliberate problem-focused efforts to alter the situation (e.g., "I knew what had to be done, so I doubled my efforts to make things work") coupled with an analytic approach to solving the problem (e.g., "I made a plan of action and followed it," "came up with a couple of different solutions to the problem").

Positive reappraisal (Scale 8) describes efforts to create positive meaning by focusing on personal growth (e.g., "changed or grew as a person in a good way," "I came out of the experience better than I went in") It also has a religious tone (e.g., "found new faith," "I prayed").

Scores were calculated by summing the ratings for each scale on each occasion. The average intercorrelations of the eight coping scales are shown in Table 4.

Five of the eight scales developed in this study are similar in content to those found in the analysis of our two previous data sets (Aldwin, Folkman, Schaefer, Coyne, & Lazarus, 1980; Folkman & Lazarus, 1985). Each of those analyses had a problem-focused scale that resembled planful problem-solving and confrontive coping, an escape–avoidance scale, an accepting responsibility scale (self-blame), a seeking social support scale, and a positive reappraisal scale. The emergence of similar coping scales in all three studies is especially noteworthy because there were substantial differences in populations and methods. In the Aldwin et al. (1980) analysis, for example, the sample was one hundred 45–64 year olds who indicated with a yes–no response (the original Ways of Coping) how they coped with a wide range of encounters they experienced in daily life. The sample for the Folkman and Lazarus (1985) study consisted of 108 students who completed the revised version of the Ways of Coping (used in the present study) with respect to one specific stressor, a midterm exam.

Each of the three studies also produced several unique factors. In the present study, for example, we identified a form of emotion-focused coping, self-control, that was not defined in our previous research. In addition, the present analyses revealed a differentiation between two forms of problem-focused coping that was not apparent in the previous studies: confrontive coping, an aggressive form of problem-focused coping that is largely interpersonal; and planful problem-solving, which includes cool, deliberate strategies that are largely not interpersonal.

Outcomes were assessed only for those encounters the subject said were concluded as opposed to ongoing. Subjects were asked to select the item that best described the encounter outcome. Encounters that the subject said were "unresolved and worse," "not changed," or "resolved, but not to your satisfaction" were defined as having unsatisfactory outcomes. Satisfactory outcomes were defined as "unresolved but improved," or "resolved to your satisfaction."[1]

[1] The distinction between ongoing encounters and concluded encounters that were unresolved concerned the time frame of the encounter. For example, one subject reported a continuing conversation with her husband

Table 3
Coping Scales

Scale	Factor loading
Scale 1: Confrontive coping (α = .70)	
46. Stood my ground and fought for what I wanted.	.70
7. Tried to get the person responsible to change his or her mind.	.62
17. I expressed anger to the person(s) who caused the problem.	.61
28. I let my feelings out somehow.	.58
34. Took a big chance or did something very risky.	.32
6. I did something which I didn't think would work, but at least I was doing something.	.30
Scale 2: Distancing (α = .61)	
44. Made light of the situation; refused to get too serious about it.	.55
13. Went on as if nothing had happened.	.54
41. Didn't let it get to me; refused to think about it too much.	.50
21. Tried to forget the whole thing.	.49
15. Looked for the silver lining, so to speak; tried to look on the bright side of things.	.34
12. Went along with fate; sometimes I just have bad luck.	.25
Scale 3: Self-controlling (α = .70)	
14. I tried to keep my feelings to myself.	.55
43. Kept others from knowing how bad things were.	.46
10. Tried not to burn my bridges, but leave things open somewhat.	.40
35. I tried not to act too hastily or follow my first hunch.	.40
54. I tried to keep my feelings from interfering with other things too much.	.37
62. I went over in my mind what I would say or do.	.37
63. I thought about how a person I would admire would handle the situation and used that as a model.	.28
Scale 4: Seeking social support (α = .76)	
8. Talked to someone to find out more about the situation.	.73
31. Talked to someone who could do something concrete about the problem.	.68
42. I asked a relative or friend I respected for advice.	.58
45. Talked to someone about how I was feeling.	.57
18. Accepted sympathy and understanding from someone.	.56
22. I got professional help.	.45
Scale 5: Accepting responsibility (α = .66)	
9. Criticized or lectured myself.	.71
29. Realized I brought the problem on myself.	.68
51. I made a promise to myself that things would be different next time.	.49
25. I apologized or did something to make up.	.39
Scale 6: Escape–Avoidance (α = .72)	
58. Wished that the situation would go away or somehow be over with.	.66
11. Hoped a miracle would happen.	.55
59. Had fantasies about how things might turn out.	.54
33. Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, and so forth.	.49
40. Avoided being with people in general.	.46
50. Refused to believe that it had happened.	.42
47. Took it out on other people.	.40
16. Slept more than usual.	.36
Scale 7: Planful problem-solving (α = .68)	
49. I knew what had to be done, so I doubled my efforts to make things work.	.71
26. I made a plan of action and followed it.	.61
1. Just concentrated on what I had to do next—the next step.	.45
39. Changed something so things would turn out all right.	.44
48. Drew on my past experiences; I was in a similar position before.	.40
52. Came up with a couple of different solutions to the problem.	.38
Scale 8: Positive reappraisal (α = .79)	
23. Changed or grew as a person in a good way.	.79
30. I came out of the experience better than when I went in.	.67
36. Found new faith.	.64
38. Rediscovered what is important in life.	.64
60. I prayed.	.56
56. I changed something about myself.	.55
20. I was inspired to do something creative.	.43

Results

The results are presented in three sections. In the first section, we report the results of the analyses of the relations between appraisal and coping; in the second, the relation between coping and encounter outcomes; and in the third, the relation between appraisal and encounter outcomes.

about the insecurity of his job. She labeled this as an ongoing stressful encounter. Another subject's stressful encounter concerned waiting for the results of his wife's laboratory tests following her recent hospitalization. The specific encounter was concluded when the results were reported to him, but the issue remained unresolved because no treatment was found for his wife's symptoms.

Appraisal and Coping

Primary appraisal and coping. The relation between the primary appraisal of stakes and coping was examined with six intraindividual multivariate analyses for repeated measures, one for each stake that was assessed. In each analysis the independent variable (the primary appraisal of one stake) was formed by aggregating the five encounters a subject reported into two groups according to whether they were above or below his or her own mean on that particular stake. The dependent variables consisted of the subject's mean score on each coping scale for those encounters that were above the mean on that particular stake, and mean coping scores for those that were below the mean. A multivariate analysis of variance for repeated measures was used to

Table 4
Eight Coping Scales: Intercorrelations Averaged Over Five Occasions

Coping scale	Scale							
	1	2	3	4	5	6	7	8
1. Confrontive coping	—	.01	.36	.27	.26	.27	.28	.26
2. Distancing		—	.36	−.04	.27	.32	.09	.13
3. Self-controlling			—	.24	.30	.36	.37	.39
4. Seeking social support				—	.09	.23	.30	.32
5. Accepting responsibility					—	.39	.13	.18
6. Escape–Avoidance						—	.10	.23
7. Effortful, planful problemsolving							—	.39
8. Positive reappraisal								—

compare the coping scores in encounters that were above the mean on a particular stake with those that were below the mean.[2,3] The *N*s in the analysis varied according to whether or not a subject rated a stake as applicable in at least one encounter. The results of the six analyses are shown in Table 5.

All six multivariate tests were significant. Relations between the two major primary appraisal indices, threat to self-esteem and threat to a loved one's well-being, and coping scores, can be summarized as follows:

When threat to self-esteem was high, subjects used more confrontive coping, self-control coping, accepted more responsibility, and used more escape–avoidance compared to when threat to self-esteem was low; they also sought less social support. When a "loved one's well-being" was at stake, subjects used more confrontive and escape–avoidance coping, and less planful problem-solving and distancing than when a loved one's well-being was not at stake.

The four single-item stakes not falling within the two factors just mentioned also had significant coping correlates. When "loss of respect for someone else" was threatened, confrontive coping and self-control were used more. In encounters involving a "goal at work," self-control and planful problem-solving were used more; when the stake was a strain on "financial resources," the dominant coping responses were confrontive coping and seeking social support. Finally, threats to "one's own physical health" were associated with more seeking of social support and escape–avoidance.

Whereas the results indicate a degree of specificity with regard to the relation between various stakes and coping, there were also some general trends. Although the majority of comparisons were nonsignificant, three strategies tended to be used more in high-stake conditions regardless of the stake involved: self-control, escape–avoidance, and seeking social support. In addition, one form of coping, positive reappraisal, was not related to any of the assessed stakes.

Secondary appraisal and coping. The relation between secondary appraisal of coping options and coping processes was examined with four intraindividual multivariate analyses for repeated measures, one for each coping option. Using the same procedure described earlier, the independent variable (the secondary appraisal of one coping option) was formed by aggregating the five encounters a subject reported into two groups according to whether they were above or below his or her own mean on that particular coping option. The dependent variables consisted of the individual's means on each of the eight coping scales that were aggregated within each group. The results of the four analyses are shown in Table 6.

Subjects accepted more responsibility and used more confrontive coping, planful problem-solving, and positive reappraisal in encounters they appraised as changeable, and more distancing and escape–avoidance in encounters they appraised as having to be accepted. In encounters subjects appraised as requiring more information before they could act, they sought more social support, and used more self-control and planful problem-solving; and in encounters that subjects appraised as requiring that they hold back from doing what they wanted, they used more confrontive coping, self-control, and escape–avoidance.

Coping and Encounter Outcomes

The concluded stressful encounters reported by each subject were grouped according to whether the outcome of each encounter was unsatisfactory or satisfactory. The mean for each of the eight coping scales was calculated within each of the two outcome groups, and a multivariate analysis of variance for repeated measures was used to determine whether there was a significant difference in coping between the two groups. The results are shown in Table 7.

The multivariate *F* statistic was significant. Satisfactory outcomes were characterized by higher levels of planful problem-solving ($p < .01$) and positive reappraisal ($p < .01$), and unsat-

[2] For purposes of statistical analysis we treated our subjects as independent of their spouses. In so doing we may have overestimated the available degrees of freedom in those analyses that included both members of a couple. To examine this possibility, we adjusted the degrees of freedom to reflect the *N* of couples in each analysis rather than the *N* of individuals. In no case did a relation that was previously significant ($p < .05$) become nonsignificant.

[3] A parallel set of analyses was conducted in which encounters were divided on the basis of the group mean rather than the individual's own mean. The findings were generally similar. All the multivariate *F* statistics remained significant at virtually the same level as in the analyses using the intraindividual mean. Of the 34 univariate comparisons that were significant using the intraindividual mean, 31 remained significant using the group mean. This suggests that as a whole, the sample was relatively homogeneous regarding the independent variables.

isfactory outcomes by higher levels of confrontive coping ($p < .10$) and distancing ($p < .10$).

Appraisal and Encounter Outcomes

As in the previous analysis, the independent variable was formed by aggregating each subject's concluded encounters into two groups according to whether the encounter had an unsatisfactory or satisfactory outcome. The relation between primary appraisal and encounter outcomes was examined by calculating a mean score for each of the six stakes indices within the two outcome groups, and testing whether there was a significant difference between the means of the two groups.

The multivariate F statistic was significant, indicating that there was a difference in stakes in encounters with unsatisfactory and satisfactory outcomes, $F(6, 77) = 2.74$, $p = .018$. The univariate tests revealed that the difference between the groups was due to a single stake, losing respect for someone else. Encounters with unsatisfactory outcomes were associated with more loss of respect than encounters with satisfactory outcomes ($M = 2.28$, 1.72, for unsatisfactory and satisfactory outcomes, respectively, $p < .001$). There were no significant differences in any other stake between encounters with unsatisfactory and satisfactory outcomes.

The relation between secondary appraisal and encounter outcomes was examined by calculating scores for each of the four indices of coping options within the two outcome groups, and testing whether there was a significant difference between the means of the two groups. The multivariate F statistic was significant, indicating that there was a difference in the appraisal of coping options in encounters with satisfactory and unsatisfactory outcomes, $F(4, 80) = 5.65$, $p < .001$. The univariate tests indicated that the difference between the groups was due to two coping options. Compared with unsatisfactory encounter outcomes, satisfactory encounter outcomes were associated with

Table 5
Relation Between Primary Appraisal and Coping; Intraindividual Analysis

	Coping scale							
Univariate test	1	2	3	4	5	6	7	8
Self-esteem stakes: Multivariate $F(8, 135) = 12.14$, $p < .0001$								
M Low	3.61	3.01	5.30	5.73	1.46	2.95	7.43	3.42
M High	4.56	3.08	6.60	4.85	2.58	3.67	7.26	3.81
F	16.81	.19	26.59	9.27	44.69	10.77	.37	3.16
p	.000	.659	.000	.003	.000	.001	.544	.078
Concern for loved one's well-being: Multivariate $F(8, 136) = 6.91$, $p < .001$								
M Low	3.68	3.31	5.86	5.37	1.81	2.81	7.67	3.40
M High	4.42	2.91	6.00	5.89	2.14	3.89	6.81	3.86
F	7.22	3.82	.28	2.21	3.80	20.04	9.95	2.89
p	.008	.053	.598	.139	.053	.000	.002	.091
Loss of respect for someone else: Multivariate $F(8, 125) = 11.49$, $p < .001$								
M Low	3.31	3.09	5.43	5.34	1.99	3.14	7.28	3.69
M High	5.32	2.85	6.60	5.78	1.72	3.49	7.27	3.50
F	54.60	1.50	20.34	1.56	2.53	1.80	.01	.49
p	.000	.222	.000	.214	.114	.182	.741	.486
Goal at work: Multivariate $F(8, 108) = 5.78$, $p < .001$								
M Low	3.84	2.99	5.55	5.21	2.01	3.44	6.88	3.77
M High	3.90	3.33	6.49	5.52	1.84	3.40	8.51	3.66
F	.04	1.94	10.39	.75	.85	.02	35.57	.14
p	.841	.167	.002	.388	.360	.893	.000	.707
Strain on finances: Mutivariate $F(8, 95) = 4.74$, $p < .001$								
M Low	4.18	3.25	5.92	5.05	1.95	3.33	7.28	3.72
M High	3.43	2.94	6.19	6.34	2.15	3.78	7.82	3.69
F	5.88	2.39	.70	10.40	.80	2.89	2.61	.01
p	.023	.125	.404	.002	.375	.092	.109	.918
Harm to own physical health: Multivariate $F(8, 86) = 3.83$, $p = .001$								
M Low	4.16	2.86	5.53	5.17	1.66	3.03	7.12	3.41
M High	3.97	3.25	5.77	6.17	1.96	4.35	7.55	3.64
F	.30	2.33	.46	6.35	2.77	21.14	1.65	.47
p	.585	.130	.499	.013	.100	.000	.202	.493

Note. 1 = confrontive coping; 2 = distancing; 3 = self-controlling; 4 = seeking social support; 5 = accepting responsibility; 6 = escape–avoidance; 7 = planful problem solving; 8 = positive reappraisal.

Table 6
Relation Between Secondary Appraisal and Coping: Intraindividual Analysis

Univariate test	Coping scale 1	2	3	4	5	6	7	8
Could change: Multivariate $F(8, 134) = 10.17$, $p < .0001$								
M Low	3.72	3.18	5.61	5.14	1.53	3.39	6.55	3.03
M High	4.39	2.94	5.84	5.53	2.36	2.86	8.07	3.93
F	5.88	1.87	.89	1.59	25.51	6.14	27.79	12.55
p	.017	.173	.346	.209	.000	.014	.000	.001
Had to accept: Multivariate $F(8, 133) = 5.60$, $p < .000$								
M Low	4.56	2.74	5.62	5.05	2.21	2.90	7.35	3.57
M High	3.53	3.22	5.73	5.56	1.64	3.44	7.16	3.51
F	12.68	5.49	.16	2.55	11.48	5.16	.43	.04
p	.001	.021	.685	.112	.001	.025	.512	.846
Need more information: Multivariate $F(8, 131) = 8.56$, $p < .0001$								
M Low	3.99	3.35	5.44	4.58	1.80	3.23	6.92	3.44
M High	4.00	2.71	6.30	6.69	2.09	3.30	7.78	3.67
F	.00	10.44	10.60	39.49	2.56	.09	9.27	.68
p	.977	.002	.001	<.0001	.112	.758	.003	.410
Had to hold back: Multivariate $F(8, 135) = 9.78$, $p < .001$								
M Low	3.16	3.20	5.03	5.21	1.91	2.78	7.13	3.65
M High	4.66	2.96	6.48	5.43	1.95	3.62	7.17	3.47
F	38.43	1.81	33.89	.47	.08	10.47	.02	.47
p	<.0001	.181	.000	.492	.778	.002	.885	.495

Note. 1 = confrontative coping; 2 = distancing; 3 = self-controlling; 4 = seeking social support; 5 = accepting responsibility; 6 = escape–avoidance; 7 = planful problem solving; 8 = positive reappraisal.

higher levels of changeability ($M = 1.20$, 1.68, for unsatisfactory and satisfactory outcomes, respectively, $p = .006$) and lower levels of the need to hold back from doing what one wanted to ($M = 2.07$, 1.41, for unsatisfactory and satisfactory outcomes, respectively, $p < .001$). There was no relation between the remaining two coping options ("had to accept the situation" and "needed more information before acting") and encounter outcomes.

Discussion

The results of this intraindividual analysis indicate that the variables identified in our theoretical formulation play an important role in coping. Specifically, variability in coping is at least partially a function of people's judgments about what is at stake (primary appraisal) in specific stressful encounters and what they view as the options for coping (secondary appraisal). Further, the analysis points up important relations among appraisal, coping, and the outcomes of the stressful encounters in which these processes take place.

In assessing primary appraisal our goal was to tap physical, psychological, social, financial, and occupational stakes that people might have in encounters that are relevant to their well-being. The results indicate that these stakes have a reasonable relation with the ways people cope.

Encounters that involved the two most reliably measured stakes—self-esteem and concern for a loved one's well being—resulted in coping patterns that overlapped to a degree. The overlap is due to the use of more confrontive coping and escape–avoidance in encounters that involved these stakes. These seemingly contradictory forms of coping suggest that people might engage in a heated exchange and simultaneously wish they were somewhere else. Another possibility is that during the course of a stressful encounter, people might alternate the use of confrontive coping with escape–avoidance in a pattern of engagement, disengagement, and reengagement. As to differences in the patterns, people sought less social support in encounters that involved a threat to self-esteem than they did in encounters in which this stake was minimally involved, and they used significantly less planful problem-solving and distancing in encounters that involved a loved one's well-being than they did when this concern was low.

That people sought less social support in encounters that involved their self-esteem may have been due to shame or embarrassment. This possiblity is consistent with Sarnoff and Zimbardo's (1961) finding that when threatened by the prospects of engaging in embarrassing behavior, subjects prefer to be alone rather than in the company of others. As for the lack of planful problem-solving and distancing in encounters that involved a loved one's well-being, it may be that such encounters are not amenable to rational problem-solving, and that when a loved one is involved, people cannot or do not wish to be emotionally detached.

The findings involving the four single-item measures of primary appraisal also contained interesting coping combinations. For example, people used more planful problem-solving and self-control in encounters that involved a goal at work. The use of

Table 7
Relation Between Coping and Encounter Outcomes: Intraindividual Analysis

Univariate tests	Unsatisfactory outcomes (M)	Satisfactory outcomes (M)	F	p
Coping scale				
1. Confrontive coping	3.98	3.31	3.34	.071
2. Distancing	3.35	2.78	3.38	.069
3. Self-controlling	5.98	5.36	2.53	.115
4. Seeking social support	4.71	5.16	1.22	.281
5. Accepting responsibility	1.92	1.65	1.10	.298
6. Escape-avoidance	2.86	2.64	.50	.482
7. Planful problem-solving	6.33	7.59	8.67	.004
8. Positive reappraisal	2.70	3.90	9.67	.003

Note. Multivariate $F(8, 76) = 4.64$, $p < .001$.

planful problem-solving is consistent with our previous finding (Folkman & Lazarus, 1980) that problem-focused coping strategies are often used to deal with work-related stress. We speculated that emotional self-control might facilitate problem-solving, especially in work settings, where the culture emphasizes such control.

In addition, our subjects used more confrontive coping and self-control in encounters that threatened loss of respect for someone else. These forms of coping suggest that for some people, along with an impulse to confront, there is the simultaneous impulse to regulate assaultive statements and hostile feelings so that the situation does not get out of hand. The use of coping strategies that appear to have opposite purposes, as illustrated by the coping processes associated with threats to self-esteem, a loved one's well-being, and respect for another, helps explain the moderate bivariate correlations among these coping variables, and highlights the need to consider the possibility that seemingly contradictory forms of coping can be mutually facilitative, depending on the nature of the threats and the manner in which an encounter unfolds over time. These findings highlight the need for microanalyses of coping processes (e.g., Folkman & Lazarus, 1985) in order to observe their interplay as a stressful encounter unfolds.

Based on our previous research on the relation between secondary appraisal (consisting of evaluations of coping resources, constraints, and options) and coping (Coyne et al., 1981; Folkman & Lazarus, 1980, 1985), we expected subjects to use more problem-focused forms of coping in encounters they appraised as changeable, and more emotion-focused forms of coping in situations where they saw few if any options for affecting the outcome. The findings from the present study are consistent with this expectation, and provide important elaboration concerning various forms of problem- and emotion-focused coping.

Four forms of coping were dominant in changeable encounters: confrontive coping, accepting responsibility, planful problem-solving, and positive reappraisal. The use of confrontive coping and planful problem-solving in changeable encounters is consistent with our two earlier sets of findings with community-residing adults (Folkman & Lazarus, 1980) and students (Folkman & Lazarus, 1985). In the latter study, problem-focused forms of coping were used more during the period of anticipation, when there was intensive preparation for a course examination, than during the waiting period after the exam and before grades were announced, when nothing could be done to change the outcome. Similarly, Bachrach (1983), who used a modified version of the Ways of Coping in a study of the ways community residents coped with the threat of a hazardous waste facility, found that people who thought something could be done about the situation used more problem-focused coping than people who appraised it as beyond their control.

Accepting responsibility and positive reappraisal were also used in changeable encounters. The items in the accepting responsibility coping scale include "criticized or lectured myself," "I made a promise to myself that things would be different next time," and "realized I brought the problem on myself." These items describe what Janoff-Bulman (1979) calls behavioral self-blame. Based on the findings of the present study, one might go a step further, and suggest that behavioral self-blame may even promote problem-focused efforts. For example, in Bulman and Wortman's (1977) study of victims of spinal and cord injury, self-blame was correlated with effective adjustment. Bulman and Wortman suggested that if one accepts blame for bringing about stress, one may also know more clearly what to do about it, which may be the mechanism through which accepting blame (in our terms, accepting responsibility) sometimes promotes problem-focused coping.

In previous studies (Aldwin et al., 1980, Folkman & Lazarus, 1985), we found that problem-focused forms of coping and positive reappraisal were highly correlated. The consistency with which these forms of coping appear in combination across studies suggests that positive reappraisal may facilitate problem-focused forms of coping, or that there is something about the encounters in which people use problem-focused coping (such as a potential for being changed in a positive direction) that also elicits positive reappraisal.

The pattern of coping in encounters that subjects appraised as having to be accepted was strikingly different from the pattern in encounters that they appraised as changeable. In changeable encounters, subjects used coping strategies that kept them focused on the situation: they confronted, did planful problem-solving, accepted responsibility, and selectively attended to the positive aspects of the encounter. In contrast, when subjects appraised encounters as having to be accepted, they turned to distancing and escape–avoidance, which are forms of coping that allow the person not to focus on the troubling situation.

The appraisals that involved delaying or inhibiting action—

needing more information before acting and having to hold back from acting—were both associated with efforts to exercise self-control. However, the use of self-control may serve different functions in the two kinds of encounters. In encounters where the subject needed more information, self-control seemed to facilitate problem-focused coping in that it was accompanied by seeking social support (which includes seeking advice) and planful problem-solving; in encounters where the subject had to hold back, self-control was accompanied by confrontive coping and escape–avoidance, which suggests that in these encounters self-control was used in an attempt to keep things from getting out of hand. Perhaps self-control processes are multidimensional and can be refined in future studies.

The assessment of encounter outcomes in this study included the subject's evaluation of whether there had been an improvement, no change, or a worsening of the problem, and whether or not he or she was satisfied with what had happened. These evaluations were collapsed into a dichotomous (satisfactory/unsatisfactory) variable. With few exceptions (e.g., Pearlin & Schooler, 1978), researchers have largely bypassed the question of short-term encounter outcomes in favor of long-term outcomes such as depression and somatic health status.

The assessment of encounter outcomes poses a number of difficult questions. For example, along what dimensions should encounter outcomes be assessed? We selected two dimensions, the problem causing distress and the subject's satisfaction with the outcome, which parallel the concepts of problem- and emotion-focused coping. Behavioral and psychophysiological dimensions could also be evaluated. Further, regardless of the dimension being evaluated, a retrospective account of an encounter's outcome may influence the report of appraisal and coping processes. It is clear that the development of a suitable approach to assessing encounter outcomes remains an unresolved and important measurement issue.

The overall relation between primary appraisal of stakes and encounter outcomes was weak. Encounters with unsatisfactory and satisfactory outcomes were distinguished by only one of the six stakes (losing respect for another).

The relation between secondary appraisal and encounter outcomes was stronger in that two of the four coping options (appraisals of changeability and having to hold back from acting) were related to encounter outcome. The results of this portion of the analysis bring up an intriguing question. How can it be that appraising a situation as changeable is associated with whether or not an encounter will have a satisfactory outcome, whereas appraising a situation as unchangeable, that is, as having to be accepted, is not? One possibility is that the appraisals of changeability and having to accept the situation may refer to different facets of a complex encounter (cf. Folkman, 1984), with the changeable facet mattering more in terms of the encounter's immediate outcome. Consider, for example, a disagreement between an employee and a supervisor. The employee may be able to change the supervisor's mind about an important decision, but not the supervisor's general decision-making style.

Encounters with unsatisfactory and satisfactory outcomes were also distinguished by coping. Unsatisfactory outcomes tended to be associated with confrontive coping, a form of problem-focused coping that includes strategies such as "stood my ground and fought for what I wanted" and "I expressed anger to the person(s) who caused the problem." These strategies may exacerbate rather than improve the situation. Satisfactory outcomes were associated with planful problem-solving, which includes strategies such as "I knew what had to be done, so I doubled my efforts to make things work," and "I made a plan of action and followed it." However, it is important not to assume that confrontive coping will always lead to unsatisfactory outcomes and that planful problem-solving will always lead to satisfactory ones. Whether or not a coping strategy results in positive outcomes depends on the demands and constraints of the context in which it is being used and the skill with which it is applied. In this study, the association between confrontive coping and unsatisfactory encounter outcomes may be due in part to the nature of the items on the confrontive coping scale, which may be biased in favor of unskillful forms of confrontation.

Distancing and positive reappraisal were emotion-focused forms of coping associated with unsatisfactory and satisfactory outcomes, respectively. These forms of coping could either be a cause or an effect of encounter outcomes. Distancing could cause an unfavorable outcome, for example, if people were to use this form of coping when they should instead be attending to the problem (e.g., Katz, Weiner, Gallagher, & Hellman, 1970). On the other hand, distancing may be an adaptive response to an outcome that is seen in negative and unalterable (e.g., Collins et al., 1983). Similarly, positive reappraisal could facilitate problem-focused coping, as noted earlier, but it could also represent the reappraisal of a situation in which problem-focused coping has already been effective in producing a favorable outcome. This point is also made by Shinn et al. (1984), who point out in their study of job stress that palliative strategies, such as focusing on activities outside the job, may be reactions to high levels of stress and strain rather than their causes.

Conclusions

Four major issues are raised by this study concerning the relations among appraisal, coping, and encounter outcomes. The first issue concerns causality. It is tempting to infer that in general appraisal influences coping, and coping in turn influences encounter outcomes, which is what our theory suggests. However, the cross-sectional, retrospective design of this study does not allow us to evaluate these causal inferences. It is even possible that some of the obtained effects operate in the opposite direction. More likely, bidirectional relations exist among the variables. In addition to appraisal influencing coping, coping may influence the person's reappraisal of what is at stake and what the coping options are. Similarly, it is possible that certain forms of coping, such as positive reappraisal, may be influenced by the outcome of an encounter rather than vice versa. Questions about causality are especially important for deciding how to intervene in maladaptive appraisal-coping-encounter outcome sequences. This issue can only be addressed with a prospective design.

A second issue concerns microanalytic versus macroanalytic assessment techniques. For example, the measure of primary appraisal included relatively global items, such as concern with one's own physical well-being and a goal at work. The former could have involved very different threats, such as a threat to appearance, physical functioning, or even life. And a goal at work could have involved threats that ranged from problems

with meeting an immediate deadline to being reviewed for a major promotion. Similarly, the coping items, especially the problem-focused items, were somewhat general rather than highly situation-specific so that they would apply to a variety of situations. A nurse may have strategies for coping with work-related encounters that are very different from those of a salesman, and it is possible that these strategies are not captured in the items on the Ways of Coping. The choice in measurement is between having items that can be used with a variety of people in a variety of settings versus those that are richer in descriptive power, but limited to specific people in specific contexts (Folkman & Lazarus, 1981).

A third issue concerns method. In our research to date on appraisal and coping, we have used the method of self-report to learn what subjects did, thought, and felt in the context of a particular stressful encounter. As we have pointed out (Folkman & Lazarus, 1985), the problem is not that self-report is inherently more fallible than other methods of inquiry—in fact, for certain kinds of psychological processes it may be the only way to obtain certain information—but rather that it ultimately requires verification by other methods such as observation of direct behavior and physiological assessment.

Finally, the results of this study support the importance of intraindividual analyses as a method of understanding the relations between the contextual features of specific stressful encounters and coping processes and the relations between these variables and short-term encounter outcomes. However, an understanding of the relations between coping processes and long-term adaptational outcomes, which is a major goal of stress and coping research, also requires an interindividual approach in which people are compared with each other with respect to the ways they cope with diverse stressful encounters over time (e.g., Folkman et al., 1986). Both intraindividual and interindividual approaches are needed to understand coping processes and the mechanisms through which they come to affect people's well-being over the long term.

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