

Long-Term Adjustment to Physical Disability: The Role of Social Support, Perceived Control, and Self-Blame

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One hundred middle-aged and elderly spinal-cord-injured persons were interviewed an average of 20 years after the disability occurred. Respondents answered questions concerning perceived control, attributions of blame, and the nature of the social comparisons they made. Three existing standardized instruments were used to measure adjustment: Index of Psychological Well-Being, Life Satisfaction Index, and the Center for Epidemiologic Studies Depression Scale. For all three outcome measures, respondents reported levels of well-being only slightly lower than population means of nondisabled persons of similar age. Controlling for health status and current income, we found that persons who have high levels of social support, who are satisfied with their social contacts, and who feel they have high levels of perceived control report high levels of well-being. Self-blame and the perceived avoidability of the cause of the disability correlated only moderately with the three measures of adjustment, suggesting that there are important differences between coping successfully immediately after a traumatic event has occurred and coping successfully many years later.

One of the mainstays of social psychological research in the last two decades has been the investigation of individuals' reactions and adjustment to stressful or unpleasant events.

This topic has been pursued both in the laboratory and in the field (see Silver & Wortman, 1980, for a comprehensive review), and the results of these efforts have yielded important theoretical insights as well as an improved understanding of practical problems faced by individuals confronted with major catastrophic events.

The types of events investigated have ranged from laboratory stressors, such as electric shock and failure on a variety of problem-solving tasks, to major life events, such as rape, job loss, and physical disease (e.g., cancer, spinal cord injury, heart disease). The theoretical perspective brought to bear on these topics include learned-helplessness theory (Abramson, Seligman, & Teasdale, 1978; Seligman, 1975; Wortman & Brehm, 1975),

just-world theory (Lerner, 1971), and several attribution-based approaches (Harvey & Weary, 1981; Kelley, 1971; Shaver, 1970; Taylor, Lichtman, & Wood, 1984; Walster, 1966). More recently, social comparison processes (Taylor, Wood, & Lichtman, 1983; Wills, 1983) and social support (Cobb, 1976; Cohen & Syme, 1985; Fleming, Baum, Gisriel, & Gatchel, 1982; Gore, 1981) as mediators of stress-related outcomes have captured the interest of social psychologists.

Because the major interest among researchers in this area has been on the *process* of coping with undesirable life events, data collection efforts have been focused on that period of time immediately following the event. As a result, we have learned a great deal about individuals' attitudes, feelings, and the coping mechanisms they use during the period of time when the level of experienced stress is likely to be high. A good example of this approach is Bulman and Wortman's (1977) study, in which 29 spinal-cord-injured victims were interviewed within 12 months of the occurrence of the injury. Bulman and Wortman found that victims who "blamed themselves and who did not feel that they could have avoided the accident were more

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likely to be good copers than poor copers," whereas the reverse was true for those who "placed little blame on themselves and felt that they could have avoided the accident" (p. 357). Taylor's (1983) recent work on the cognitive adaptation of cancer patients similarly focused on individuals' efforts to cope with cancer shortly after they receive the diagnosis. These studies do not tell us, though, whether short-term coping mechanisms are effective in the long run—say, years after the event has occurred.

From both theoretical and practical points of view, it is important to know whether correlates of successful coping at one time are the same as correlates of coping years after the tragedy has occurred (Monat & Lazarus, 1977). For example, issues of blame may be important in the short run when the event is salient but irrelevant 10 or 20 years later. One could best answer these questions by following longitudinally a population of victims for several years after the crisis event has occurred. However, such a study would be very expensive and time consuming. One alternative to the longitudinal approach would be to investigate cross-sectionally the correlates of coping in populations exposed to the same crisis event but who vary in the temporal distance from that event.

Our study is based on data collected from 100 middle-aged and elderly spinal-cord-injured persons who were interviewed an average of 20 years after the injury occurred. In order to compare the responses of our subjects with the data reported by Bulman and Wortman (1977), and by Taylor et al. (1984), some of the questions used in their studies were administered in this one. In addition, we asked a large number of questions relevant to the theoretical domains of perceived control, social comparison theory, and social support. We assessed adjustment in our population by administering three standardized instruments measuring levels of psychological well-being, life satisfaction, and depression. The following specific questions and hypotheses were addressed in this study:

1. How important are perceived control, the nature of inter- and intraindividual comparisons, and social support as determinants of psychological well-being, life satisfaction, and depression among middle-aged and el-

derly spinal-cord-injured persons? We hypothesized that reported well-being and life satisfaction are highest and depression is lowest among persons who report high levels of perceived control, make positive social comparisons, and have high levels of social support.

2. How are self-blame and the perceived avoidability of the spinal cord injury related to adjustment in this population? According to Bulman and Wortman (1977), individuals who blame themselves cope better than those who do not; on the other hand, Taylor et al. (1984) found little support for this relation in their sample of breast cancer patients. The authors of both studies suggested that this relation may be mediated by time, occurring relatively late in the adjustment process. Because our sample was interviewed at least 5 years after the injury, we predicted a positive relation between self-blame and adjustment.

3. How do levels of life satisfaction, well-being, and depression among spinal-cord-injured persons compare with levels reported by noninjured populations of similar age? One of the recurring challenges of doing research on individuals who undergo non-normative life crises (Schulz & Rau, 1985) concerns the definition and measurement of adjustment. For example, neither Bulman and Wortman (1977) nor Taylor et al. (1984) were able to identify appropriate control groups against which the functioning of spinal-cord-injured victims or of cancer victims can be compared. As a result, evaluations of adjustment are often based on the assessment of health care professionals who work with these individuals. One of the advantages of using standardized instruments to assess adjustment is that we are able to compare the responses of the spinal-cord-injured to existing data for noninjured populations of similar age. On the basis of the literature concerning elderly individuals' ability to adapt to adverse life circumstances (Schulz, 1982), we predict little difference in reported well-being between disabled and nondisabled populations.

Method

Respondents

The sample consisted of 100 spinal-cord-injured persons living in noninstitutional community settings. Criteria

for inclusion in the study were the presence of paraplegia or quadriplegia, an age of 40 or over, the absence of a progressively deteriorating disease state, and agreement to participate. We located respondents through agencies and institutions working with spinal-cord-injured persons, namely, the Portland Veterans Administration Medical Center, the Oregon Paralyzed Veterans Association, and the Oregon Trail Chapter of the National Spinal Cord Injury Association. Locating respondents proved to be time consuming and difficult, requiring approximately 9 months. A total of 106 individuals were approached as possible participants in the study. Four persons declined participation because they were not interested, and two persons were excluded because they had multiple sclerosis. In the judgment of agency staff who work with spinal cord patients, the sample of respondents in this study represents the large majority of community-residing spinal-cord-injured persons living in the Portland, Oregon, metropolitan area.

Respondents in the sample were all Caucasian and predominantly (90%) male. Their ages ranged from 40 to 73 with mean and median ages of 56 and 56.5, respectively. The majority of respondents were married (72%) or living as married (1%) and had at least one child (84%). The age at time of injury ranged from 12 to 68 years; mean and median ages of injury were 35 and 33 years, respectively. The injuries sustained by this group resulted in paraplegia (40 incomplete and 27 complete) and quadriplegia (29 incomplete and 4 complete). The causes of spinal cord injury correspond closely to national statistics on causes of injury (Trieschmann, 1980); the leading cause was vehicular accidents, followed by polio, other accidents including falls and participation in sports, medical problems other than polio, and penetrating wounds.

Procedure

Names and addresses of potential subjects were obtained from Veterans Administration hospital files and from organizations that work with spinal-cord-injured persons. After names were obtained, letters explaining the nature of the research project were sent to prospective subjects requesting their participation. A few days after the letters arrived, prospective participants were called and arrangements were made to carry out the interview in the location of their choice. Forty-one interviews were carried out in the subjects' homes, 5 in other locations such as the work place, and 54 by telephone.¹

Because researchers were concerned with the possibility that asking people to discuss problematic situations would evoke a certain amount of anxiety, the research instrument used was first pretested with a population of patients in the rehabilitation ward of the Veterans Administration hospital. All questions were evaluated for clarity and for their potential in arousing anxiety, and were eliminated or altered when appropriate. Two female psychiatric nurses with extensive clinical experience in working with disabled patients carried out the interviews. The interview experience from the respondent's point of view is in part reflected by the fact that 97 respondents said they would participate again in a similar study if asked.

Research Instrument²

Six major categories of data were collected for this study: demographic, health status, social network/support, social comparisons, control/attribution, and subjective well-being. The last category constituted the primary outcome measure of the study and included three standardized instruments used to assess psychological well-being, depression, and life satisfaction. To avoid duplication, detailed descriptions of the instruments and questions used in this study are presented in the Results section.

Results

Descriptive Analysis

Demographic Variables

We collected information regarding age, sex, race, marital status, number of children, education, religion, employment status, income, and residential characteristics. A typical demographic profile of a subject in this sample is a 56-year-old Caucasian male, married with two children. He is a veteran, has a high-school diploma, is currently unemployed, perceives himself as moderately religious, and claims a Protestant affiliation. His income is approximately \$10,000 a year, drawn primarily from Social Security and other disability insurance. He is moderately satisfied with his income and lives in his own well-maintained home in an urban setting with his spouse.

Health Status

In addition to reporting the information summarized earlier concerning the level and completeness of the spinal cord injury and the cause of the injury, subjects were asked to (a) rate their health status on a Likert-type scale, (b) indicate whether they had any chronic health problems, (c) report hospitalizations in the last year, and (d) answer a standardized questionnaire regarding their need for assistance with activities of daily living (ADL)—that is, dressing, bathing, eating, cooking, toileting, driving a car, shopping, doing laundry, and house cleaning.

¹ T-test comparisons were carried out to test differences between face-to-face and telephone interviews. All relevant comparisons were not significantly different from each other.

² A copy of the instrument is available from the first author.

When asked to rate their health status on a 5-point Likert-type scale, the greatest percentage (34%) of subjects described their current health status as *moderate* (3); 7% perceived their health as *poor* (1), 18% as *fair* (2), 30% as *good* (4), and 11% as *excellent* (5). Fifty-seven percent of the subjects indicated they had no chronic health problems other than their spinal cord injury. Among the chronic health problems identified by the remaining 43% were the following: hypertension, kidney infection and disease, hypotension, diabetes, arthritis, emphysema, and a variety of cardiovascular problems. Many of the chronic health problems identified are typically associated with spinal cord injury, particularly renal disease and related hypertension (Gunby, 1981). Thirty-five percent of the respondents had been hospitalized in the last year for periods of time ranging from less than a week to slightly over a month.

We constructed an index that was based on the 9 items indicating the degree of assistance required in the activities of daily living. A reliability analysis of subjects' responses to these items showed them to have a high level of internal consistency (Cronbach's $\alpha = .94$). As expected, the relation between level of spinal cord injury and ADL was significant ($r = .51$).

Social Network/Support

The mean number of support persons identified was 2.3, the mode 1. Spouses and children were the most important sources of support. Of the 231 support persons identified by the sample, only 11 were disabled. Contact with support persons was very frequent; 84% reported that contact occurred "several times a week or daily."

To quantify perceived social support, we asked each subject to name up to five persons who were important sources of help, support, and guidance. After identifying these persons, subjects were asked to indicate on 11 Likert-type scales how much each person helped them. The 11 scales were designed to measure instrumental, affective, and cognitive support (Schaefer, Coyne, & Lazarus, 1981). For example, one of the items measuring instrumental support required subjects to indicate on a 5-point scale from 1 (*not at all*) to 5

(*frequently*) whether a particular support person "assists with things such as cleaning, shopping, transportation, repairs or loaning money." We obtained a total social support score by adding the ratings on the 11 items for each of the individuals identified. This score could range from 0 (*no support*) to 275 (*very frequent support*) from five persons on all 11 items. Cronbach's alphas were calculated for the total social support scale ($\alpha = .90$), and for the subscales measuring instrumental support ($\alpha = .81$), affective support ($\alpha = .96$), and cognitive support ($\alpha = .95$). Because the intercorrelations among the subscales were all very high ($r_s > .80$), the total score was used in the multiple regression analysis to be reported. The total social support scores for this sample ranged from 0 to 247, with a mean of 92.

Finally, respondents were asked how satisfied they were with their relationships with support persons, and a large majority (90%) reported feeling extremely satisfied. Subjects were also asked how satisfied they were with the amount and quality of the social contact they had with others in general. For both questions, approximately 70% indicated high satisfaction, 20% moderate satisfaction, and 10% low satisfaction. The correlation between the total social support score and the questions assessing the amount ($r = .22$) and quality ($r = .25$) of social contact with others were only moderate. This is not surprising, given the fact that the total social support score is based on a few specifically named individuals, whereas the social contact questions are based on a broader range of relationships.

Social Comparisons

Subjects were also asked with whom they compared themselves "to decide how good their life situation was." Respondents had difficulty responding to this question, stating that they did not compare themselves with other people. The interviewer then explained that "we all compare ourselves with others even though we're not always aware of it" and repeated the question. On the basis of Taylor's (1983) recent analysis, we expected that respondents would report downward comparisons, but this was not the case. Only 25% of the respondents said that they com-

pared themselves with other disabled persons. Sixteen percent said they compared themselves with nondisabled persons, and 59% said they didn't compare themselves with any particular group of persons, "just people in general." Moreover, choice of comparison person was not significantly related to any of the well-being measures.

To assess the favorable/unfavorable nature of the inter- and intrapersonal comparisons made by this group, we constructed an index consisting of five Likert-type items. Respondents rated how good their current life situation was in comparison with those of "most people," "others the same age," and "others with a similar disability," and in comparison with "their life before the disability" and with what it "would be like without their disability." The internal consistency of these items was high ($\alpha = .80$). The possible range of scores for this index was between 5 and 25, with higher scores indicating more favorable comparisons. The mean and median scores for this sample were 14.9 and 14.7, respectively. For the three items requiring comparisons with other persons, the mean response was on the favorable side of the midpoint. For responses based on intrapersonal comparisons, the mean response was on the unfavorable side of the midpoint.

Control/Attributions

We constructed an index consisting of five Likert-type items to measure perceived control over various life circumstances. Using a scale ranging from 1 (*not at all*) to 5 (*completely*), subjects indicated the degree of control they had to "achieve or obtain what is important to you," "make your interactions with others end up the way you expect them to," "cope successfully when stressed," "solve problems," and "view the good things that happen to you as a result of your own actions." Reliability analysis of the responses to this scale resulted in a Cronbach's alpha of .81. The possible range of scores was between 0 and 25. The mean score for this group was 19.7, indicating generally high levels of perceived control.

Subjects were also asked whether they felt they could have avoided incurring the disability and what factor(s) they blamed for

causing the disability. The majority (57%) of persons in this study did not blame themselves at all for causing their disability; 4% blamed themselves only slightly, 9% moderately, 9% somewhat, and 21% very much. Those who did blame themselves gave examples such as carelessness resulting in a vehicular accident or failure to take a polio vaccine.

Only 19% felt they could have completely avoided the disability; the majority (56%) felt there was nothing they could have done to avoid the disability. As would be expected, those who blamed themselves tended to be those who felt they could have avoided the disability ($r = .72$).

Respondents were also asked, "Considering the best and worst things that could happen to you in your lifetime, where does your disability fit?" On a scale ranging from 1 (*worst that could happen*) to 5 (*best that could happen*), the mean response was 2.2. This question was followed by a similar one, asking if there had been "any purpose or positive meaning that your disability has had in your life?" Sixty-four percent of the subjects responded yes. The most frequently mentioned types of meaning were those related to personal growth such as "increased awareness of self," "becoming a better person," "value change," and "seeing other people as more important." Less frequently mentioned responses included statements concerning "patience and tolerance," "being more careful," "using my head versus brawn," "increased importance of God," and "acquiring new skills and hobbies."

Subjective Well-Being

Index of Psychological Well-Being (IPWB). This is one of three measures of adjustment used in this study. Developed by Berkman (1971), this 8-item self-report scale was designed to measure mental health in adult populations. The scale comprises both negative and positive feeling-state items and yields a score describing the relative strength of an individual's positive and negative feelings. The items in this scale were taken from a larger instrument used by Bradburn and Caplovits (1965) to measure psychological well-being in their studies of happiness. The criterion validity of the scale is supported by

data reported by Berkman; he reported high correlations between IPWB scores and mental health/life stress ratings by psychiatrists who evaluated participants of the Midtown Study (Langner & Michael, 1963). For the purpose of this study, one item on the index, "so restless you couldn't sit long in a chair," was changed to "so restless you had to move about."

The IPWB yields a score ranging from 1 to 7; 1 indicates a high level of psychological well-being. Using a probability sample of 6,928 adults from a general population, Berkman (1971) reported a mean score of 3.77 for his sample. The mean for the spinal-cord-injured population was slightly higher at 4.04. The distribution of scores in the Berkman study are compared in Table 1 with the distribution obtained in this study. Inspection of this table shows remarkable similarity between the two samples.

Life Satisfaction Index-A (LSIA-A). This is an 18-item self-report scale designed to measure subjective psychological well-being. The LSIA-A is a multidimensional scale, composed of three factors interpreted as mood tone, zest for life, and congruence between desired and achieved goals, and a fourth (unnamed) dimension. Adams (1969) suggested that this fourth dimension represents a combination of resolution/fortitude and congruence between desired and achieved goals. High cor-

Table 2

Mean Scores on the LSIA and the LSIA-A of Selected Samples

Study	Age of subjects ^a	Mean score	Median score	Mode
LSIA: Adams (1969) ^b	65+	12.5	—	—
LSIA-A: Harris & Associates (1975) ^c				
Younger sample	18-64	13.35	14.15	—
Older sample	65+	12.2	13.0	—
Total sample	—	13.2	14.0	—
LSIA-A: Spinal cord injury study	40+	10.76	10.88	9.0

Note. LSIA = Life Satisfaction Index; LSIA-A is derived from the LSIA.

^a In years. ^b Scores can range from 0 to 20. ^c Scores can range from 0 to 18. High scores indicate high levels of life satisfaction.

relations have been reported ($r > .75$) between LSIA-A scores and other measures of life satisfaction (e.g., the Philadelphia Geriatric Center Morale Scale; Lohman, 1977). Analysis of responses to this scale in our study resulted in a Cronbach's alpha of .76 for the total scale and values considerably lower than this for the subscales measuring the four factors. As a result, the total score was used in subsequent analysis.

The LSIA-A yields scores ranging from 0 to 18, with higher scores indicating greater life satisfaction. The mean for this sample was 10.76, which is slightly lower than means reported for several other samples (see Table 2). Over 50% of the spinal-cord-injured persons in this study indicated dissatisfaction on 5 of the 18 items on the LSIA-A. Sixty-six percent indicated that they were not as happy now as when they were younger, 73% indicated that these were not the best years of their lives, 78% indicated that their lives could be happier than they are now, 63% indicated that they would change their past if they could, and 51% indicated that the lot of the average person is getting worse, not better. The reasons subjects gave for some of these responses were related to their disability; for example, several persons volunteered the information that the part of their past they would change would be their injury.

Table 1
Comparative Distribution of Scores for Two Samples on the Index of Psychological Well-Being

Scale score	Percentage of sample	
	Berkman (1971)	Spinal cord injury study
1 ^a	6.9	3
2	14.9	7
3	22.5	23
4	22.3	31
5	20.5	25
6	9.4	8
7 ^b	3.5	3
Total	100.0	100
<i>M</i>	3.77	4.04
Mode	3.00	4.00
<i>Mod</i>	—	4.05

^a High well-being. ^b Low well-being.

Table 3
Mean Scores on the CES-D of Selected Samples

Study	Mean score	% scores ≥ 16
Radloff (1977)		
General population (18+)	9.25	19
Inpatient psychiatric	24.42	70
Outpatient psychiatric	39.11	100
Spinal-cord-injured study	9.74	22

Note. Scores can range from 0 to 60. High scores indicate high levels of depression.

Center for Epidemiologic Studies—Depression Scale (CES-D). This is a 20-item self-report scale designed to measure symptoms of depression in the general population. The items were selected from previously validated scales (Beck Depression Inventory [Beck, 1967]; Zung's [1965] Self-Rating Scale; Minnesota Multiphasic Personality Inventory Depression scale). The CES-D scale was designed to avoid the problem, characteristic of some depression scales, of placing too much emphasis on somatic items that frequently characterize nondepressed older or disabled persons. Radloff (1977) reported that the internal consistency, test-retest reliability, and validity of the scale are high and correlations between the CES-D and age, social class, and sex are minimal. Reliability analysis for our sample yielded a Cronbach's alpha of .83, indicating high internal consistency.

The CES-D yields scores ranging from 0 to 60; a higher score indicates greater depression. Scores for this sample ranged from 0 to 37, with a mean of 9.74. This mean compares favorably with general population means reported by Radloff (1977). Mean scores for several samples are presented in Table 3. As expected, the scores of a sample of 70 inpatient psychiatric patients and for a sample of 35 persons admitted to outpatient treatment for severe depression were substantially higher than those in our study. The similarity in scores between the spinal-cord-injured group and the general population suggests that the disabled group is not particularly at risk of depression. However, three of the spinal-cord-injured persons scored in the 30s, not far below the mean of the severely depressed outpatient sample in Radloff's study. Of these

three persons, one was a paraplegic and reported having no support person. He appeared bitter and suspicious to the interviewer. The other two persons with high depression scores were quadriplegic and were married. One required complete assistance with activities of daily living, was in constant pain, frequently cried during the interview, and asked the interviewer to get a gun and kill him. The third person also required complete assistance with activities of daily living. He stated that he constantly had to come up with things to occupy his mind; otherwise he would dwell on his physical condition and want to kill himself.

Correlational Analysis

The purpose of this phase of the analysis was to identify the correlates of well-being in this population. Both Pearson correlation techniques and multiple linear regression methods were used to achieve this.

The first question to be answered concerns the correlations among the three measures of well-being. As expected, these correlations are moderately high: for IPWB with LSIA-A,

Table 4
Major Correlates of Three Measures of Subjective Well-Being

Variable	<i>r</i>
IPWB	
Satisfaction with quality of social contact	-.49
Perceived control	-.49
Perceived health	-.43
Satisfaction with amount of social contact	-.43
Social support	-.42
LSIA-A	
Perceived control	.52
Satisfaction with amount of social contact	.51
Perceived health	.47
Cognitive support subscale	.46
Social support	.45
Satisfaction with quality of social contact	.42
Perception of disability	.40
Assistance with ADL	-.35
CES-D	
Perceived control	-.56
Perceived health	-.49
Satisfaction with amount of social contact	-.45
Satisfaction with quality of social contact	-.44

Note. IPWB = Index of Psychological Well-Being; LSIA-A = Life Satisfaction Index-A; ADL = Activities of Daily Living; CES-D = Center for Epidemiologic Studies—Depression Scale. $p < .001$ for all correlations.

$r = -.73$; for IPWB with CES-D, $r = .62$; and for LSIA-A with CES-D, $r = -.69$. The major correlates of each of these measures of well-being are presented in Table 4. These correlations are consistent with our predictions and with much of social psychological theory concerning the importance of perceived control and social support. Variables related to these constructs consistently appear near the top of the list for each of the well-being measures.

Multiple linear regression analyses were carried out for each of the three measures of subjective well-being. Because there exists a large literature indicating that health status and income are the major predictors of well-being in middle-aged and older populations (Schulz, 1982), these variables were entered first in the regression analysis in order to control for their contribution to reported well-being. On the basis of both the correlations reported earlier and our theoretical interests, the following variables were entered in the third step of the regression analysis: control, social support, satisfaction with the

amount and quality of social contact, and perception of the disability. As illustrated in Table 5, the combination of all variables entered accounted for 49% of the variance in scores on the IPWB, 58% of the variance in scores on the LSIA-A, and 50% of the variance in scores on the CES-D.

The major predictors of scores on the IPWB were self-reported health status, perceived control, social support, and satisfaction with social contacts. A similar pattern of results emerged when we used the LSIA-A as an outcome measure. In addition to the variables identified for the IPWB, perception of the disability emerged as a significant predictor of the score on the LSIA-A. The major predictors of depression (CES-D) were health status, perceived control, social support, and satisfaction with social contacts.

The final analysis was aimed at examining the relation of the three measures of well-being to current age, age at which the disability occurred, self-blame for the disability, and the perceived avoidability of the disability. The correlations for this analysis are presented

Table 5
Multiple Linear Regression of Three Outcome Variables on Predictor Variables

Predictor variables	R^2 total	R^2 change	F	df
IPWB				
Perceived Health	.18	.18	8.53**	2, 91
Income	.21	.02	0.17	2, 91
Perceived Control	.33	.13	5.40**	6, 91
Perception of Disability ^a	.37	.03	3.27*	6, 91
Social Support	.44	.07	10.39**	6, 91
Satisfaction with Quality and Quantity of Social Contacts	.49	.05	9.98**	6, 91
LSIA-A				
Perceived Health	.22	.22	13.38**	2, 91
Income	.23	.01	0.04	2, 91
Perceived Control	.44	.11	5.88**	6, 91
Perception of Disability ^a	.33	.10	10.88**	6, 91
Social Support	.53	.09	16.20**	6, 91
Satisfaction with Quality and Quantity of Social Contacts	.58	.05	10.19**	6, 91
CES-D				
Perceived Health	.25	.25	14.67**	2, 91
Income	.25	.00	2.27	2, 91
Perception of Disability ^a	.27	.01	0.03	6, 91
Perceived Control	.41	.16	12.54**	6, 91
Social Support	.45	.03	4.12*	6, 91
Satisfaction with Quality and Quantity of Social Contacts	.50	.06	10.19**	6, 91

Note. IPWB = Index of Psychological Well-Being; LSIA-A = Life Satisfaction Index-A; CES-D = Center for Epidemiologic Studies-Depression Scale.

^a "Considering the best and worst things that could happen to you in your lifetime, where does your disability fit?" (Responses ranged from 1 = *worst that could happen* to 5 = *best that could happen*.)

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

in Table 6. The data indicate that there is a tendency for persons to report higher levels of well-being if they are currently younger in age, incurred their disability at a younger age, blame themselves for their disability, and feel that they could have avoided the disability. The findings regarding self-blame and the perceived avoidability of the disability are interesting in light of Bulman and Wortman's (1977) results, which indicate that victims who coped best blamed themselves but felt the injury was unavoidable. In this study, the better copers blamed themselves and felt the disability was avoidable. Indeed, self-blame and perceived avoidability were highly correlated ($r = .72$).

Discussion

Despite the presence of a major disability, the subjects in this study reported a mean degree of well-being that was only slightly lower than that of other nondisabled adult populations. This is remarkable, given the magnitude of the disabilities involved, but not inconsistent with other data suggesting that most elderly individuals have an extraordinary ability to adapt to extremely adverse circumstances (Schulz, 1982). Moreover, the data collected in this study suggest mechanisms through which this may be achieved. Persons who had high levels of social support, were satisfied with their social contacts, and felt that they had high levels of control reported high levels of well-being. It is important to appreciate that these variables are predic-

tive of adjustment after health and income are controlled. Although findings are highly consistent with current social-psychological perspectives on the importance of perceived control (Schulz & Hanusa, 1980) and social support (Cohen & Syme, 1985) as mediators of subjective well-being, it is unfortunately not possible to derive causal conclusions from these cross-sectional data.

A second feature of these data is that self-blame and the perceived avoidability of the disability play a relatively minor role as determinants of well-being. Whereas the correlations between self-blame and coping were relatively high ($r = .65$) in the Bulman and Wortman (1977) study, they were of much smaller magnitude in this study (e.g., $r = .23$ for self-blame and life satisfaction). Moreover, self-blame and perceived avoidability were correlated moderately at best in the Bulman and Wortman study, but were highly positively correlated in this study. There are several possible reasons for these differences.

The first and most salient distinction between the two studies is the age differences between the two samples of respondents. Subjects in the Bulman and Wortman (1977) study were relatively young and had incurred their injury within 12 months before the interview. Subjects in this study were middle-aged and older and had lived with their disability for many years. It would not be surprising to find, as our data suggest, that the circumstances surrounding the occurrence of the disability become less important 10 and 20 years later; what does matter is the immediate situation, the friends one has, and the resources one can command. The passage of time may substantially blur the relations among blame, avoidability, and well-being.

The two studies also differed in three other important ways. The causes of the spinal cord injury were accidents for all subjects in the Bulman and Wortman (1977) study, whereas some of our subjects were the victims of diseases such as polio. The outcome measures differed as well. Bulman and Wortman used a coping scale that was based on subjects' attitude toward their injury and their motivation to participate in physical therapy. Such an instrument was obviously inappropriate for our population, and we therefore used standardized instruments designed to assess

Table 6
Pearson Correlation Coefficients for Four Variables and Three Measures of Well-Being

Variable	IPWB		LSIA-A		CES-D	
	<i>r</i>	<i>p</i> <	<i>r</i>	<i>p</i> <	<i>r</i>	<i>p</i> <
Current age	.18	.04	-.21	.02	.18	.03
Age at injury	.18	.04	-.25	.006	.14	.09
Blaming self	-.13	.10	.23	.01	-.25	.006
Avoidability of disability	-.17	.05	.23	.01	-.22	.02

Note. IPWB = Index of Psychological Well-Being; LSIA-A = Life Satisfaction Index-A; CES-D = Center for Epidemiologic Studies—Depression Scale.

well-being and depression. The advantage of the latter approach is that data for our subjects could be compared with existing population norms. Finally, there are substantial differences in the sample sizes used in the two studies. Bulman and Wortman interviewed 29 subjects in their study and we interviewed 100; our group, however, was undoubtedly less homogeneous than theirs. Any one or a combination of these differences may account for the lack of similarity in the outcomes.

The Phenomenology of Coping

Taylor and her colleagues (Taylor et al., 1983) identified five selective evaluation mechanisms used by victims to cope with their tragedy. On the basis of data collected from cancer victims, they found that victims (a) make social comparisons with less fortunate others, (b) selectively focus on attributes that make them appear advantaged, (c) create hypothetical worse worlds, (d) construe benefit from the victimizing event, and (e) manufacture normative standards of adjustment that make their own adjustment appear exceptional. Our data are consistent with only some of these hypothetical mechanisms. First, our respondents made favorable social comparisons but not necessarily with less fortunate others. In fact, they saw themselves as better off than most nondisabled persons. They achieved this partly by selectively focusing on attributes that make them appear advantaged (e.g., brain is more important than brawn). They did not create hypothetical worse worlds; indeed, they could readily imagine hypothetical better worlds, worlds in which they are not disabled. They did attach meaning to the victimizing event, and many felt that they benefited from the event. Finally, their standards of adjustment were more likely to be based on attributes at which they could excel, such as the nature of their relationships, their sensitivity to others' needs, and their intellectual abilities.

The inconsistencies between our data and those reported by Taylor et al. (1983) are not particularly surprising because their focus is on the process of adaptation, whereas ours is on the adapted individual. What is missing at this point are data linking short-term

adaptation processes with data describing the successfully long-term adapted individual. Finding this link should be a high priority in future research in this area.

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- Cross-Cultural Differences in Children's Use of Decision Rules: A comparison between Japan and Australia. Leon Mann (School of Social Sciences, Flinders University of South Australia, Bedford Park, South Australia 5042), M. Radford, and C. Kanagawa.
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