

Long-Term Effects of Losing a Spouse or Child in a Motor Vehicle Crash

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In this article we examine the long-term effects of the sudden, unexpected loss of a spouse or child. In the spouse study, interviews were conducted with 39 individuals who had lost a spouse in a motor vehicle crash 4 to 7 years ago and with 39 matched controls. In the parent study, interviews were conducted with 41 parents who had lost a child in a crash and with 41 matched controls. Control respondents were matched to bereaved respondents case-by-case on the basis of sex, age, income, education, and number and ages of children. Significant differences between bereaved spouses and controls were revealed on several indicators of general functioning, including depression and other psychiatric symptoms, social functioning, psychological well-being, reactivity to good events, and future worries and concerns. For the most part, these differences persisted when variables such as present family income and present marital status were statistically controlled. Comparisons between bereaved and control parents also revealed significant differences on some measures of general functioning (especially depression), but these were not as pervasive as the differences obtained in the spouse study. Responses to questions about current thoughts and feelings suggest that the deceased continued to occupy the thoughts and conversations of bereaved spouses and parents. Moreover, a large percentage of respondents (from 30% to 85%, depending on the question), continued to ruminate about the accident or what might have been done to prevent it, and they appeared to be unable to accept, resolve, or find any meaning in the loss. Taken together, the data provide little support for traditional notions of recovery from the sudden, unexpected loss of a spouse or child.

The death of a spouse or child is one of the most stressful events that a person can experience during the course of his or her life. A question of major significance concerns the issue of recovery from such a loss. Some early studies of bereavement suggested that its psychological impact is relatively transient. On the basis of psychiatric interviews with relatives of victims of the Coconut Grove fire and with other bereaved individuals, Lindemann (1944) attempted to delineate the symptoms of normal grief. Although his investigation focused on acute grief only, he painted an optimistic picture of the recovery process, noting that with appropriate psychiatric intervention, it was ordinarily possible to settle an uncomplicated grief reaction in 4 to 6 weeks (p. 144).

A similar conclusion was reached by Clayton and her associates (Bornstein & Clayton, 1972; Clayton, Halikas, & Maurice,

1972), who interviewed 109 widows and widowers at 1 and 13 months following the death of their spouse. Clayton et al. (1972) concluded that only 17% of their sample were definitely or probably depressed at the final interview and that most were better at 4 to 6 months. In another study (Clayton, Desmarais, & Winokur, 1968), respondents who had lost a spouse, child, grandchild, or parent were interviewed twice within the first few months of the loss. The majority of respondents showed improvement from the first to second interview, although a sizable minority (27% to 37%) continued to experience a variety of symptoms, including sleep disturbance, difficulty concentrating, anxiety attacks, anorexia, and fatigue. Nonetheless, the authors concluded from their data that "bereavement is a relatively mild reaction for most subjects" (p. 72).

A thorough review of the research in this area, however, does not substantiate this view of the grieving process. Although symptoms decline with time, many investigators have reported that a significant number of the bereaved continue to show marked symptoms after 6 months (Parkes, 1964), 1 year (Maddison & Viola, 1968; Maddison & Walker, 1967; Parkes & Brown, 1972), 2 years (Vachon, Rogers, et al., 1982; Vachon, Sheldon, et al., 1982), and 2 to 4 years (Marris, 1958; Parkes & Weiss, 1983). For example, Vachon (1979) found that 38% of the bereaved widows she studied were experiencing a high level of distress after 1 year (also see Vachon, Rogers, et al., 1982; Vachon, Sheldon, et al., 1982). In a longitudinal study of bereaved widows and widowers conducted by Parkes and his associates (Glick, Weiss, & Parkes, 1974; Parkes, 1975; Parkes & Brown, 1972; Parkes & Weiss, 1983), respondents were interviewed 2 to 4 years after the loss. More than 40% of the sample were rated by trained interviewers as showing moderate to se-

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were anxiety at that time. In most studies, the emotional distress experienced among the bereaved is significantly greater than among matched controls (Clayton, 1979; Parkes & Brown, 1972). As a result of these and other studies (e.g., Carey, 1977; Maddison & Viola, 1968), many researchers now suspect that the grieving process is longer and more complex than Lindemann (1944) and Clayton and associates (1968, 1972) had suggested (Parkes, 1970, p. 103; also see Caplan, 1974).

Although some investigators have suggested that the impact of bereavement may be long-lasting, there is surprisingly little empirical data on the effects of such a loss beyond 1 to 2 years. Only one study, the "Harvard Bereavement Project," conducted by Parkes and his associates, has carefully examined the impact of bereavement from 2 to 4 years after the loss. To our knowledge, there have been no methodologically rigorous studies that have examined reactions to bereavement beyond the 2- to 4-year period. As a number of investigators have noted, a major aspect of grief about which little is known is its duration (S. Rubin, 1981). According to Parkes and Weiss (1983), "further studies are needed to discover how long the effects of bereavement are likely to persist" (p. 9).

Available evidence suggests that bereavement is particularly likely to have a long-lasting impact if the loss is untimely or unexpected. In the case of conjugal loss, younger widows and widowers generally experience more pronounced distress than those who lose their spouse at a later age (see, e.g., Ball, 1977; Maddison & Walker, 1967; Morgan, 1976; Silverman, 1972; Vachon et al., 1977; Vachon, Rogers, et al., 1982; van Rooijen, 1979). Similarly, although the data are not entirely consistent (Bornstein, Clayton, Halikas, Maurice, & Robins, 1973; Maddison & Walker, 1967; Sanders, 1980), most evidence suggests that the effects of bereavement are more severe in those cases where the bereaved has had little forewarning about the loss (see, e.g., Ball, 1977; Carey, 1977; Glick et al., 1974; Lehrman, 1956; Lindemann, 1944; Parkes, 1971, 1975; Parkes & Brown, 1972; Rees & Lutkins, 1967; Silverman, 1972; Vachon, Formo, Freedman, Lyall, & Freeman, 1976; Vachon, Sheldon, et al., 1982; Volkan, 1970). For example, Parkes and Weiss (1983) compared the reactions of those who had "brief or no" forewarning of their spouse's death with those who had longer than 2 weeks to prepare themselves for the bereavement. At 13 months after the loss, only 9% of respondents in the brief forewarning group were rated by the interviewers, on a combined assessment, as having a "good outcome." Of those with longer forewarning, 56% were rated as having a good outcome. Two to 4 years after the loss, only 1 of the 18 respondents who had brief forewarning (6%) was rated as doing well or very well; 63% of the 41 respondents with long forewarning were judged as doing well. Although this study involved a relatively small sample of bereaved individuals who had brief forewarning, the results suggest that the sudden and unexpected loss of one's spouse can have effects that are severe and long lasting. On the basis of these findings, Parkes and Weiss (1983) concluded that such a loss "injures functioning so severely that uncomplicated recovery can no longer be expected" (p. 94).

Like Parkes and Weiss (1983), most of the studies in the bereavement literature have compared the effects of *short* or *brief* forewarning with those of *long* forewarning. For example, Vachon, Rogers, et al. (1982) found that the shorter, final illness of

the husband was associated with higher distress at 2 years than was the longer, final illness of the husband. In that study, respondents were obtained from Toronto hospitals, and all emergency room and dead-on-arrival cases were excluded. Thus, virtually all of the respondents had at least some forewarning of the loss. We might expect those whose spouse or child dies suddenly, with no forewarning whatsoever, to have the greatest difficulty in coming to terms with the loss. Unfortunately, past studies provide little information about how individuals cope with the loss of a loved one when they have no forewarning at all.

In the United States, sudden, accidental death is the number one killer of persons between the ages of 1 and 44 (Osterweis, Solomon, & Green, 1984). Although approximately 150,000 people die from sudden, traumatic deaths each year, the impact of such losses on family members remains largely unexamined. For example, only one study on how people cope with the loss of a child in a motor vehicle crash was available (L. R. Rubin, 1982). Data from qualitative interviews with nine families suggested that respondents suffered psychological distress that was intense and long lasting. To our knowledge, no studies have examined the psychological impact associated with the sudden and unanticipated loss of a spouse.

The purpose of this study was to examine long-term adjustment to the sudden, traumatic loss of a loved one. A decision was made to focus on loss from motor vehicle crashes, because this represents the largest single cause of traumatic deaths in the United States today (Baker, O'Neill, & Karpf, 1984). Because few prior studies have examined the impact of loss beyond 3 years, this investigation studied reactions to losses that occurred from 4 to 7 years prior to the interview. Two types of significant loss were examined in this study: loss of a spouse and loss of a child. Conjugal bereavement was included because it is experienced by many people and because prior research (Parkes & Weiss, 1983) has suggested that the unexpected loss of a spouse poses serious problems for recovery. Loss of a child has received less attention in the literature, although some investigators have speculated that this is "the most significant" and traumatic loss that can be experienced (Clayton, 1979; Paykel, Myers, Dienelt, & Klerman, 1969; Sanders, 1980). By including both spouse and parent bereaved respondents in the same investigation, this study affords the opportunity to compare the two types of loss on the nature and extent of long-term recovery.

Many previous studies on the impact of bereavement have not included control or comparison groups in the design (Bornstein et al., 1973; Clayton et al., 1968; Marris, 1958; Vachon, Rogers, et al., 1982; Vachon, Sheldon, et al., 1982). These studies have attempted to demonstrate the impact of bereavement by indicating the percentage of bereaved individuals who continue to experience particular symptoms, such as anxiety, depression, or sleep disturbances, at particular points in time. Without a control or comparison group, however, such data are difficult to interpret. For this reason, each bereaved respondent in the present investigation was matched with a control respondent who was similar (at the time of the crash) on several demographic variables but who had not lost a loved one in a motor vehicle crash.

The matching process helped to ensure that any differences between bereaved and control individuals were attributable to

the impact of the loss, and not to any unique characteristics possessed by the bereaved sample. To further ensure that individuals in the bereaved sample would be comparable to those in the control sample, except for having experienced the loss, the study was limited to people whose deceased spouses or children were innocent victims (e.g., occupants of automobiles in multiple-vehicle crashes in which the driver of their motor vehicle, whether the victim or someone else, was not at fault). This was done because at-fault drivers in fatal motor vehicle crashes (and possibly their spouses, parents, children, and other associates) are more likely to have backgrounds of social deviance and psychopathology (Baker, Robertson, & Spitz, 1971). Because some of the outcome measures tap areas of psychopathology and social functioning, it was deemed best to eliminate potential cases in which the driver, on the basis of his or her involvement in the crash, was more likely to have these characteristics prior to the crash.

Several different outcome variables were used to assess the long-term impact of the loss, including mental health, feelings of well-being, perceived health status, as well as performance, satisfaction, and strain in marital, parental, work, and social roles. In selecting measures, particular attention was paid to issues of reliability and validity. Where possible, scales or portions of scales that had been validated in previous research were used. These scales were supplemented with open-ended questions designed to assess the respondent's present life. In addition, bereaved respondents were asked a series of questions about current memories, conversations, and thoughts about the loss. These questions were designed to determine the extent to which respondents were still dealing actively with the loss, and the extent to which they had accepted or come to terms with the loss.

Method

Respondents

The present analyses are based on two sets of interviews conducted with (a) 39 individuals who had lost a spouse in a motor vehicle crash 4 to 7 years ago and 39 matched controls (spouse study), and (b) 41 parents who had lost a child in such a crash and 41 matched controls (parent study). Thus, the total sample included 160 individuals.

The bereaved respondents were randomly selected from a microfilm file that contains a record of every motor vehicle fatality that occurred in the state of Michigan between 1976 and 1979. The sample was restricted to crashes that took place in Wayne County, Michigan, and that resulted in the death of a southeastern Michigan resident. The intent was to identify a sample that was diverse in terms of socioeconomic characteristics but was located in relatively close proximity to the interviewing staff. However, all randomly selected potential respondents included in the sample (in both the bereaved and control groups) were tracked, and an effort was made to interview each one regardless of where they presently lived in the United States. In the spouse study, the age range of the deceased was restricted somewhat (21 to 65 years) to reduce the heterogeneity of the sample. In the parent study, a decision was made to focus on the impact of losing a child still living at home. For this reason, the sample was restricted to those cases in which the deceased child was less than 18 years of age. In both studies, the sample was restricted to individuals who were married and who had been living together at the time of the crash. In the parent study, an attempt was made to interview both parents of the deceased child.

All of the deceased in the spouse study were motor vehicle occupants. Records from the state of Michigan were used to screen all crashes and select as respondents only those people whose spouse or child was an innocent victim (i.e., had died in a crash in which the driver of their motor vehicle was not responsible). Police records for each crash were examined, and with the use of criteria developed by Haddon (1963), determinations of probable responsibility or fault were made on the basis of movements of the vehicles prior to the crash. In this scheme, the driver/vehicle initiating the crash was identified as responsible (e.g., a car crosses the center lane and collides with an oncoming car). The classifications were based on information from the diagram and narrative description of the crash recorded by the investigating police officer. Responsibility, as determined by this scheme, does not necessarily indicate driver culpability or legal responsibility. However, in none of the cases included in the sample was the driver of the vehicle occupied by the deceased cited for a violation.

Because there were not enough fatalities that met the study criteria in which children were motor vehicle occupants, some children who died as pedestrians ($N = 13$) and bicyclists ($N = 11$) were included in the parent study sample. These cases were also drawn from the microfilm file of motor vehicle fatalities. An effort was made to eliminate those cases in which primary blame for the fatality was placed on the child.

Control respondents for both the spouse and parent studies were selected from a 1976 study of 7,581 Michigan residents who had been randomly selected as they came into state offices to renew their licenses (Lee, 1980). This large computerized data base allowed control respondents to be matched to bereaved individuals more precisely than had been possible in previous research. The control sample was limited to those respondents who, in 1976, were living in Wayne County, Michigan, between the ages of 18 and 65, and married. Controls were matched on a case-by-case basis to bereaved respondents on the following variables: sex, age, income (family income in 1976), education level, and number and ages of children. Following each interview with a bereaved respondent, the necessary matching information was compiled from the case and a control match was selected.

Procedure

All respondents were initially contacted by a letter that described the study. Bereaved respondents were told that the study would focus on the consequences of serious motor vehicle accidents and that its purpose was to increase our understanding of how such accidents affect people's lives. However, it seemed inappropriate to inform control respondents that they were matched to someone who had lost a spouse or child in a motor vehicle crash. For this reason, the letter mailed to control respondents merely explained that we were conducting a study on Michigan residents' views of their quality of life. In all of the letters, respondents were informed that an interviewer would be contacting them in the near future to attempt to set up an appointment. If the respondent agreed to participate, the interviewer arranged a date and time for the interview to be conducted in the respondent's home. Before the interview began, the importance of open and honest responses was highlighted and the confidentiality of responses was assured. Respondents were asked for permission to tape-record the interviews (none of the respondents refused). At the conclusion of the interview, appreciation was expressed to respondents for their participation, and they were paid \$15 for their time.

Interviews were conducted by members of the Institute for Social Research Survey Research Center's Field Office at the University of Michigan. The 20 female interviewers were mature (median age of 50), well educated (an average of 15.2 years of education), and experienced (average of 4 years on the staff).

Tracking Lost Respondents

In most cases, only the potential respondent's name, 1976 to 1979 address, and, in some cases, a phone number were known. Using this limited information as a starting point, an attempt was made to obtain a current address and phone number from Directory Assistance. If this attempt was unsuccessful, a letter was sent to the old address. In addition, each particular residence was visited and inquiries were made of neighbors. Many other methods of tracking "lost" respondents were also attempted in this study: (a) the initial letter to each respondent was mailed with "Address Correction Requested" stamped on the envelope; (b) \$1 was sent with each bad address to the particular local post office with the hope of receiving an old forwarding address from their archives; (c) Directory Assistance was called and numbers were requested for all those people in the area with the same last name as the potential respondent in order to locate a relative who might know his or her whereabouts; (d) *Bresser's Criss-Cross Directory* was consulted in an attempt to obtain neighbors' telephone numbers; (e) several school districts were called in an attempt to locate parents with unpublished phone numbers; (f) a special computerized search of drivers' addresses (with the same first and last names as our lost respondents) was conducted by the Michigan Department of State in an attempt to locate respondents. All of these methods were used for every lost case. Nonetheless, many potential bereaved respondents were not located.

Response Rates

Our goal was to interview 40 people who had lost a spouse, one or both parents of 40 fatally injured children, and a matched control respondent for each bereaved respondent. The data for the spouse study were based on interviews with 39 matched pairs. Contact was attempted with 69 people who had lost a spouse. Of these 69 people, 40 were interviewed, 9 (13%) refused to participate, 3 (4%) had died, and 17 (25%) were not located. Thus, the response rate for the spouse bereaved sample (excluding those who had died) was 61%. To obtain the sample of matched controls, 54 people were identified and interviews were conducted with 39, 8 (15%) declined to participate, and 7 (13%) were not located. The response rate was 72% for controls.

For the parent study, contacts were attempted with 126 parents of 63 fatally injured children. Interviews were conducted with 54 parents, including 17 couples, 26 (21%) refused to participate, 6 (5%) had died, and 40 (32%) were not located. The response rate (excluding those who had died) was 45%. Interviews were obtained from 61 of 86 matched controls (71% response rate). Eighteen (21%) declined and 7 (8%) were not located. Because of divorces, deaths, and refusals, often only one parent from a particular couple was interviewed. Respondents not paired by gender were excluded. Thus, the parent study data are based on 41 sex-matched pairs.

The response rates in the two bereaved samples (61% and 45%) compare very favorably with those in other bereavement studies (e.g., Carey, 1977; Maddison & Viola, 1968; Maddison & Walker, 1967; in which the response rates were 54%, 50%, and 48%, respectively). In the only other long-term study, the Harvard Bereavement Project (Parkes & Brown, 1972), 20% of the originally sampled bereaved respondents were interviewed at the 13-month follow-up. The remaining respondents either refused to participate (32%), were not located (22%), or were found to be unsuitable for the study (26%). At the 2- to 4-year follow-up, only 17% of the originally sampled respondents were interviewed.

Demographics of the Sample Interviewed

The spouse study sample (across both the bereaved and control groups) was predominantly white (89%) and female (85%)—this gender proportion is representative of national statistics, as three quarters of motor vehicle fatalities involve male victims (Baker et al., 1984). Re-

spondents had a mean age of 44 and a mean (1976) family income of \$24,000. One third had at least one child more than 18 years of age, and approximately two thirds had at least one child less than 18 years of age. The respondents in the parent study were also primarily white (84%), but they were more evenly balanced by sex (67% female). They had a mean age of 42 and a mean (1976) family income of \$23,500. One quarter of the respondents had at least one surviving child more than 18 years of age, and two thirds had at least one surviving child less than 18 years of age.

Interview Instrument

The interview was developed specifically for this project to assess key constructs such as depression, social functioning, and psychological well-being. After the instrument was originally completed, it was critiqued by a consultant at the University of Michigan Transportation Research Institute who had herself lost a child in a motor vehicle accident in 1978. It was then pilot tested on 11 bereaved and 6 control respondents and appropriately modified.

For all respondents, the interview began with a series of questions from 11 standardized and 2 newly constructed instruments designed to assess present-day functioning. This included such variables as depression and other psychiatric symptoms, alcohol and drug use, psychological well-being, social functioning in marital, parental and work roles, and perceived health status. Most of these variables were assessed through a structured interview format, although a few were assessed through self-administered scales.

Following these questions bereaved respondents were asked a number of questions about the accident itself, its impact on the respondent and other family members, and a variety of other open-ended questions about their lives following the incident. These questions were asked toward the end of the interview so that any emotions that arose in discussing the death would not influence scores on the measures of functioning. In the control interview, questions about the loss were replaced with a group of neutral filler items about such issues as life goals and satisfaction.

Mental Health

Depression was measured by means of three different instruments: a shortened, 10-item version of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1975), which focuses on feelings of depression for the past 2 weeks; a 13-item subscale from the SCL-90-R (Derogatis, Rickels, & Rock, 1976—discussed later); and a 6-item depression/suicide index from the Schedule for Affective Disorders Scale (SADS; Spitzer & Endicott, 1975), which assesses major depressive episodes of 3 weeks or more during the past 3 years.

Psychiatric symptoms were measured by the complete SCL-90-R instrument (Derogatis et al., 1976). This measure of current psychological symptom status reflects the individual's level of psychopathology. It has evolved from the Hopkins Symptom Checklist, a self-report instrument that has been used for over a decade and has validation data available on thousands of patients (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). The scale consists of 90 items with subscales that measure a number of symptoms of interest in this population, including depression, anxiety, and somatization.

Alcohol and drug use were measured through modified versions of two instruments. The seven questions that tapped alcohol use and alcohol-associated problems were taken from the Women's Coping Strategies Study (Colton, 1981). Questions from the 1976 Americans View Their Mental Health survey (Veroff, Douvan, & Kulka, 1981) were used to assess drug use and drug-related problems.

Psychological Well-Being

The psychological well-being (or quality of life) dimension was measured through one previously validated and two newly constructed

scales. A shortened, nine-item version of the Bradburn Affects Balance Scale (Bradburn, 1969) was used to measure respondents' overall outlook on life. This scale contains a variety of items concerning the extent to which respondents find their activities interesting and meaningful, experience feelings of pleasure and enjoyment, feel proud about things they have done, and feel that they are living the kind of life they want to live. A three-item Worry Scale was developed to assess respondents' apprehensiveness about bad things happening to them or their family members. Finally, a three-item Reactivity-to-Good-Events Scale was created to assess individuals' ability to get pleasure out of the good things in their lives.¹

Role Performance, Satisfaction, and Strain

The Weissman Social Adjustment Scale (Weissman & Bothwell, 1976) was used to measure role performance in five major areas of functioning: spare time and friends; relationships with extended family (relatives); family roles as a spouse and parent; role performance and satisfaction in work; and role performance and satisfaction in the home setting. Although this scale was originally developed for use with psychiatric outpatients, it has been more carefully validated than other available instruments. A shortened version of the Dyadic Adjustment Scale (Spanier, 1976) assessed the quality of respondents' marriage or cohabitation. The dimensions of marital and parental stress were measured by shortened versions of the Pearlin and Schooler (1978) Role Strain Scales.

Perceived Physical Health Status

Three questions about general physical health status were included. These questions were developed by the National Center for Health Services Research for the Health Insurance Study (see Brook et al., 1979; Stewart, Ware, Brook, & Davies-Avery, 1978). The validity of perceived health status as a predictor of health services used has been well established in the literature (Maddox & Douglas, 1972; Mossey & Shapiro, 1982; Roos & Shapiro, 1981).

General State of Life

To provide an indication of present functioning from an open-ended question, all respondents were asked to describe how their life was going, in general, at the present time. Responses to this question were rated independently by two coders on a negative to positive 5-point scale (taking into account intensity of positive or negative mentions as well as the ratio of positive to negative mentions). The interrater reliability was .77, and 93% of the responses were coded by the two coders within 1 point of each other on the 5-point scale.

Employment History and Financial Status

Respondents were asked a series of questions about their employment history to determine how many paying jobs they had held during the past 7 years. Respondents were also asked to provide the level of their 1982 family income.

Rates of Mortality, Marital Status, and Locatability

From the tracking procedure already described, information was obtained on mortality and locatability rates. In addition, respondents were asked about their present marital status and marital history.

Current Thoughts and Feelings About the Loss

A number of items were developed to assess the extent to which bereaved respondents were still dealing actively with the loss. These questions focused on the frequency and nature of memories of the deceased and conversations about him or her, as well as current thoughts about the accident (e.g., feelings of blame or regret, feelings that the accident was unfair, etc.).²

Acceptance and Resolution of the Loss

Five questions were included in the interview schedule to examine the extent to which bereaved respondents had accepted or come to terms with the loss. Two of these questions were adapted from items used in the Harvard Bereavement Project (Parkes & Weiss, 1983). Respondents were asked to indicate whether they ever feel that the death is not real and that they will wake up and it will not be true, and whether, even though they realize that it is not possible, they imagine their spouse or child coming back. Bereaved respondents were also asked to indicate whether they had been able to make any sense of, or find any meaning in, the death and, if not, how painful this was for them. Finally, of those who had ever asked themselves "Why me?" or "Why my [spouse/child]?" bereaved respondents were asked if they were able to answer the question.

Results

Matching Checks

Pair-wise *t* tests were performed to compare the bereaved and control groups on the five matching categories (sex, age, 1976 family income, education, and number and ages of children). No differences were found on any of the five matched variables.

Scale Reliabilities

Reliability coefficients (Cronbach's alpha) were computed for each of the scales. They were computed for the bereaved and control groups separately, as well as for the entire sample. The correlations for the total sample are presented for each scale in the last column of Table 1. The alphas from the separate computations of the bereaved and control groups were comparable to the total sample alphas. As can be seen, aside from the Weissman Social Adjustment subscales (scales that are not comprised of necessarily similar questions), the scale reliabilities ranged from .72 to .98, with the majority in the high .80s. Because most of these scales had been previously validated, these high reliabilities were not surprising.

Group Differences

Because control respondents were matched so extensively to bereaved respondents, matched-pair analyses were used to make comparisons across groups. Mean differences between the

¹ The Reactivity-to-Good-Events Scale was developed in collaboration with Fred Bryant.

² Questions about thoughts, feelings, and ability to find meaning in the loss were developed in collaboration with Roxane Silver as part of a larger project on coping with uncontrollable life events.

Table 1
Means, Standard Deviations, and Reliabilities for Outcome Measures

Construct	No. of items	Spouse study				Parent study				α
		<i>N</i>	Bereaved spouse	Control spouse	<i>SD</i>	<i>N</i>	Bereaved parent	Control parent	<i>SD</i>	
CES-D	10	39	1.08**	0.56	0.98	41	0.77*	0.48	0.84	.87
SADS Depression/Suicide	6	38	2.59***	1.46	1.28	40	2.55****	1.60	1.32	.76
SCL-90-R total score (GSI)	90	39	0.98***	0.52	0.78	41	0.77	0.63	0.74	.98
Somatization	12	39	0.75****	0.48	0.87	41	0.71	0.66	0.97	.88
Obsessive-Compulsive	10	39	1.28***	0.74	0.95	41	1.00	0.90	0.98	.88
Interpersonal Sensitivity	9	39	1.04**	0.58	0.86	41	0.74	0.73	0.80	.88
Depression	13	39	1.32***	0.65	1.04	40	0.93	0.74	0.98	.92
Anxiety	10	38	1.01**	0.49	0.98	41	0.77	0.63	0.87	.90
Hostility	6	39	0.87****	0.59	0.96	41	0.73****	0.48	0.87	.83
Phobic Anxiety	7	39	0.54****	0.14	0.65	41	0.46****	0.26	0.76	.77
Paranoid Ideation	6	39	0.88*	0.52	0.96	41	0.67	0.59	0.79	.79
Psychoticism	10	38	0.66**	0.30	0.78	40	0.51	0.44	0.73	.82
Alcohol	6	28	1.52	1.30	0.94	33	1.51	1.36	0.89	.85
Drug	8	38	1.66	1.57	1.24	40	1.50	1.49	0.91	.72
Bradburn Affects Balance	9	39	2.94***	2.27	0.95	40	2.71****	2.43	0.92	.88
Worry	3	39	2.64**	2.16	1.10	40	2.46****	2.15	1.11	.76
Reactivity to Good Events	3	39	1.95*	1.69	0.80	41	1.98	2.02	0.94	.72
General State of Life-Open-Ended	1	39	2.64**	1.51	1.10	41	1.76	1.63	1.13	—
Weissman total	39	22	2.00	1.76	0.78	18	1.91	1.71	0.82	—
Spare Time	11	39	2.24**	1.82	0.79	41	1.93	1.92	0.73	.70
Relatives	8	32	1.65	1.60	0.76	39	1.72*	1.52	0.58	.63
Family	8	16	1.88	1.83	1.01	17	1.87	1.66	0.55	.76
Work Satisfaction/Stress	6	13	1.42	1.38	0.56	12	1.40	1.31	0.37	.58
Housework Satisfaction/Stress	6	31	2.04*	1.74	0.90	23	1.88	1.86	0.52	.72
Spanier Dyadic Adjustment Scale	7	—	—	—	—	32	1.86	1.95	0.71	.82
Pearlin & Schooler Stress (Partner)	6	—	—	—	—	31	2.10****	1.74	1.06	.87
Pearlin & Schooler Stress (Parent)	7	17	3.02**	2.04	1.32	27	2.52*	2.07	1.04	.91
Physical Health	4	39	2.09	1.88	0.90	11	2.13	1.93	1.13	.77

Note. Higher scores represent more depression, greater distress, worse psychological well-being, and so on. CES-D = Center for Epidemiologic Studies-Depression scale. GSI = Global Severity Index. SADS = Schedule for Affective Disorders Scale.

* $p < .05$, two-tailed. ** $p < .01$, two-tailed. *** $p < .001$, two-tailed. **** $p < .10$, two-tailed.

bereaved and control respondents were evaluated by pair-wise t tests. All group comparison results described in the following sections are reported in Table 1.

Depression

All three depression scales (CES-D, depression subscale from the SCL-90-R, and SADS) yielded highly significant differences in the spouse study, with respondents who had lost a spouse reporting more depression than did matched control respondents ($p < .01$, $.001$, and $.001$, respectively). In the parent study, respondents who had lost a child reported significantly more depression on the CES-D and SADS depression scales than did control respondents ($p < .05$ and $.001$, respectively). There was no significant difference between bereaved parents and controls on the depression subscale from the SCL-90-R.

To provide some indication of what these differences mean descriptively, representative items were selected from two of these depression scales, and the percentage of bereaved and control respondents endorsing particular response options were compared. From the CES-D depression scale, for example, 33% of the bereaved spouses and 31% of the bereaved parents indicated that they "could not shake off the blues even with help

from their family and friends" on at least 3 to 4 days out of the past 7 days. The figures for the matched controls were 8% and 13%, respectively. From the SADS depression scale, 56% of the bereaved spouses and 34% of the bereaved parents indicated that for 2 or more years (since the time of the crash) they had felt depressed or sad almost all of the time. The figures for the matched controls (responding to the question for the same period of time as their matched bereaved counterparts) were 14% and 11%, respectively. Overall, rates of endorsement of particular depression items were between 2 and 5 times greater among the bereaved than among the control respondents.

Psychiatric Symptoms

Psychiatric symptoms were assessed by means of the SCL-90-R (Derogatis et al., 1976) and were analyzed in two different ways. First, a total score referred to as the Global Severity Index (GSI) was computed for each respondent. The GSI represents the best single indicator from the SCL-90-R of the level of general disorder. It combines information on numbers of symptoms and intensity of perceived distress. Second, each of the nine subscale scores was computed separately. The nine symptom dimensions include the following: somatization, obsessive-

compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism.

In the spouse study, the GSI comparison was highly significant ($p < .001$), indicating that people who have lost a spouse report more psychiatric symptoms than do matched controls. In addition, seven of the nine subscales from the SCL-90-R revealed significantly greater psychopathology among the bereaved spouses (obsessive-compulsive, interpersonal sensitivity, depression, phobic-anxiety, paranoid ideation, and psychoticism—all $ps < .01$, except paranoid ideation, $p < .05$). Both the hostility and somatization dimension differences revealed trends in the same direction (both $ps < .07$).

In the parent study, the GSI and the nine subscale comparisons did not reveal any significant differences between those who had lost a child and matched controls. However, both the hostility ($p < .08$) and phobic-anxiety ($p < .11$) dimension differences revealed trends in the same direction described earlier for the spouses.

Use of the SCL-90-R instrument allowed comparison of the bereaved and control respondents with various national norms (Derogatis, 1977). Only the bereaved spouses and their matched controls were compared because there were no significant differences revealed between bereaved and control respondents in the parent study. The bereaved spouses and control respondents were compared with samples of 484 female nonpatients and 577 female psychiatric outpatients.³ The mean SCL-90-R scores of the bereaved spouses were significantly higher than those of women in the general population (see Table 2). Most of the mean SCL-90-R scores of the control spouses were also significantly higher than those of women in the general population, although these differences were not as pronounced as they were for the bereaved spouses.

Mean SCL-90-R scores of bereaved spouses were not significantly different from those of female psychiatric outpatients on six of the nine subscales (somatization, obsessive-compulsive, hostility, phobic-anxiety, paranoid ideation, and psychoticism). However, mean SCL-90-R scores of the control spouses were significantly different (lower) from those of female psychiatric outpatients on all nine subscales.

Alcohol and Drug Usage

The comparisons in both the spouse and parent studies revealed no differences between bereaved and control respondents on the alcohol scale or drug use index.

Psychological Well-Being

The spouse study comparison of the Bradburn Affects Balance Scale yielded a highly significant difference ($p < .001$); those who had lost a spouse endorsed items such as "feeling good about life" and "optimistic about the future" much less frequently than did control respondents. For example, the bereaved were much less likely than controls to look forward to doing things with others. In addition, they were much less confident that they could handle or cope with a serious problem or major change in their life. There was also a highly significant difference on the Worry Scale; people who had lost a spouse were more likely to feel apprehensive about bad things happen-

Table 2
Mean SCL-90-R Scores for Female Psychiatric Outpatients, Women in the General Population, Bereaved Spouses, and Controls

Scale	Female psychiatric outpatients (N = 577)	Women in the general population (N = 484)	Bereaved spouses (N = 39)	Control spouses (N = 39)
Somatization	0.77	.30	0.75 ^b	.48 ^c
Obsessive-Compulsive	1.39	.30	1.28 ^b	.74 ^{a,d}
Interpersonal Sensitivity	1.35	.22	1.04 ^{a,f}	.58 ^{a,d}
Depression	1.98	.30	1.32 ^{a,d}	.65 ^{b,d}
Anxiety	1.47	.20	1.01 ^{a,e}	.49 ^{b,d}
Hostility	0.97	.19	0.87 ^a	.59 ^{a,d}
Phobic-Anxiety	0.57	.05	0.54 ^a	.14 ^{c,d}
Paranoid Ideation	1.07	.19	0.88 ^a	.52 ^{b,d}
Psychoticism	0.77	.05	0.66 ^a	.30 ^f
GSI (total score)	1.31	.26	0.98 ^{a,c}	.52 ^{b,d}

Note. GSI = Global Severity Index.

^a Significantly different from female general population at the .001 level.

^b Significantly different from female general population at the .01 level.

^c Significantly different from female general population group at the .05 level.

^d Significantly different from female psychiatric outpatient group at the .001 level.

^e Significantly different from female psychiatric outpatient group at the .01 level.

^f Significantly different from female psychiatric outpatient group at the .05 level.

ing to them or their family members in the future ($p < .01$). Finally, the comparison on the Reactivity-to-Good-Events Scale revealed that those who had lost a spouse reported less ability to get pleasure out of the good things that happen in their lives than did controls ($p < .05$).

The parent study comparisons on these same three scales did not reveal any significant differences between bereaved and control respondents. However, both the Bradburn Affects Balance Scale ($p < .06$) and the Worry Scale ($p < .09$) revealed trends similar to those in the spouse study.

General State of Life

Both the bereaved and control respondents' interviews included the following request: "I'd like you to take a few minutes to think about your life in general at this time—the good things as well as the bad. Then I'd like you to tell me what your life is like these days." In the spouse study, bereaved respondents reported their life at present as significantly more negative than did the matched control respondents ($p < .01$). In the parent study, however, there was no difference between bereaved and

³ The spouse study sample was 85% female. Because the sample was 15% male, however, the norm comparisons with Derogatis' female populations make the bereaved and control respondents in our study appear to show relatively less psychiatric symptomatology, as female scores tend to be higher in general than male scores (Radloff & Rae, 1979; Weissman & Klerman, 1977).

control respondents in their reports of what their life was like at present.

Role Performance, Satisfaction, and Strain

The Weissman Social Adjustment Scale (Weissman & Bothwell, 1976) was used to measure role performance in five major areas of functioning: spare time and friends, relatives, family, work satisfaction/stress, and housework satisfaction/stress. Separate analyses were carried out on each of the five subscales as well as on a combined score.

In the spouse study, two of the five subscale comparisons revealed significant differences between the bereaved and control respondents; these were spare time ($p < .01$) and housework satisfaction/stress ($p < .05$). On the spare time subscale, for example, those who had lost a spouse reported spending less time with their friends, having more open arguments with them, and feeling hurt and offended by them more of the time than did controls. The bereaved also reported feeling lonely and bored much more of the time than did controls. The housework satisfaction/stress subscale comparison revealed that, for example, the bereaved were less able to do their housework, more ashamed of how they did their housework, more likely to have had minor problems with salespeople or neighbors, and more likely to have felt upset while doing their housework than did controls. None of the other three subscale comparisons revealed significant differences, nor did the comparison of combined scores.

In the parent study, the Relatives' subscale comparison yielded a significant difference between bereaved and control respondents ($p < .05$). For example, those who had lost a child reported being less able to talk about their feelings and problems with their relatives and more likely to want to do the opposite of what their relatives wanted to do in order to make them angry. None of the other subscale comparisons revealed significant differences, nor did the comparison of combined scores.

The spouse study comparison of the Pearlin and Schooler (Parent) Role Strain Scale yielded a significant difference ($p < .01$); those who had lost a spouse, for example, reported feeling more tense, upset, unhappy, and emotionally worn out when thinking of their current experiences as a parent than did control respondents. The parent study comparison revealed a significant difference in the same direction ($p < .05$).

The parent study comparison of the Pearlin and Schooler (Partner) Role Strain Scale revealed a trend ($p < .07$); those who had lost a child reported feeling somewhat more bothered, tense, and neglected when thinking of their daily life with their spouse or partner than did controls. The parent study comparison of the Spanier Dyadic Adjustment Scale did not reveal a difference between bereaved parents and controls. These two scales concerning partners were not analyzed in the spouse study because only 12 people in the bereaved sample were married or living with a partner.

Physical Health

The comparisons in both the spouse and parent studies revealed no differences between bereaved and control respondents on the three questions concerning their physical health.

Employment History

Approximately 70% of the people in the spouse study sample (among bereaved and control respondents) were working for pay at the time of their spouse's death (the same time period was used for each corresponding control respondent). Of these people, 55% of the controls were still working at this same job at the time of the interview compared with 36% of the bereaved, $\chi^2(1, N = 78) = 1.19, ns$. Approximately 60% of the people in the parent study sample were working for pay at the time of the child's death (again, same time period used for matched controls). Of these people, 68% of the controls were still working at this same job at the time of the interview compared with just 38% of the bereaved, $\chi^2(1, N = 82) = 3.93, p < .05$. To further assess stability of employment, respondents were asked how many jobs they had had since the time of their loved one's death (same time period used for matched controls). In the spouse study sample, 36% of the bereaved had more than one job as compared with 26% of the controls, $\chi^2(1, N = 78) = 0.54, ns$. In the parent study sample, 40% of the bereaved as compared with just 18% of the controls had more than one job, $\chi^2(1, N = 82) = 3.87, p < .05$. Thus, those who had lost a child were significantly less likely to still be working at the same job they held at the time of their child's death and, similarly, were significantly more likely to have held more than one job during the past 4 to 7 years than were matched controls. Although the differences were not statistically significant in the spouse study, the pattern revealed the same trend.

Mortality

In the spouse study, 3 (6%) of the 52 bereaved people who were successfully tracked had died. In the spouse control group, none of the 47 people tracked had died. In the parent study, 6 (7%) of the 86 bereaved parents who were successfully tracked had died. In the parent control group, none of the 79 people tracked had died. These differences, pooled across spouse and parent studies, $\chi^2(1, N = 160) = 10.4, p < .01$, are consistent with findings from larger studies (Parkes, Benjamin, & Fitzgerald, 1969; Rees & Lutkins, 1967; Stroebe & Stroebe, 1983; Stroebe, Stroebe, Gergen, & Gergen, 1981), which suggests that mortality rates increase as a result of bereavement.⁴

Locatability

It has already been reported that fewer respondents were located from the bereaved groups than from the control groups. In the spouse study this difference was not a significant one. Seventeen (26%) out of 66 people (excluding the deceased) who had lost a spouse were never located as compared with 7 (13%) out of 54 people in the control group, $\chi^2(1, N = 120) = 2.29, ns$. The locatability difference in the parent study, however, was

⁴ Because mortality was not a focus of the present investigation, no effort was made to probe the cause of death of each particular deceased, potential respondent. After the study's completion, an effort was made to obtain these causes from the National Death Index. However, because we had neither the deceased individuals' social security numbers nor their birthdates, our attempt was unsuccessful.

statistically significant. Forty (33%) out of 120 people (excluding the deceased) who had lost a child were never located compared with just 6 (7%) of the 86 people in the control group, $\chi^2(1, N = 206) = 18.3, p < .001$. These analyses suggest that parents who suffer the loss of a child may be more likely to move from their former residence (and thus are more difficult to track) than parents who do not lose a child.

Divorce

Because only 12 of the bereaved spouses had remarried, it was not feasible to conduct an analysis on divorce rates in the spouse study. In the parent study, 8 of the 41 bereaved parents interviewed had been divorced since their child's death (couples counted as only one unit). In the control group, there was only 1 person out of 41 who had been divorced during the same period of time. Again, a trend is clearly present; bereaved parents appear more likely to become divorced from their spouse than a matched group of controls who have not lost a child, $\chi^2(1, N = 82) = 3.84, p < .05$.

Financial Status

There were no income differences between bereaved and control respondents on family income *before* the crashes had occurred (1976). However, analyses revealed significant differences between bereaved and control respondents in 1982 family income, with those who had lost a loved one reporting a lower level of income. In the spouse study, the mean family income reported by the bereaved respondents was \$22,000 as compared with a mean of \$29,500 for the controls, pair-wise $t(36) = 2.75, p < .01$. In the parent study, the mean family income reported by the bereaved respondents was \$22,300 as compared with a mean of \$29,200 for controls, pair-wise $t(39) = 2.45, p < .02$.

Controlling for Income and Marital Status

As noted earlier, the bereaved respondents as compared with controls had lower 1982 family incomes and were more likely to be living without a spouse (because of widowhood in the spouse study and because of divorce in the parent study). Because differences in income and marital status alone may account for our results on the functioning scales (Atchley, 1975; Harvey & Bahr, 1974; Morgan, 1976), differences between the bereaved and control samples were reexamined in a multiple regression analysis in which the effects of income and marital status were controlled. This analysis assessed the effects of bereavement independent of income and marital status.

In the spouse study, 15 of the 16 differences in functioning between bereaved and control respondents (see Table 1) remained statistically significant after income and marital status were controlled. The remaining comparison (the Reactivity-to-Good-Events Scale) remained marginally significant ($p < .08$). Overall, partial correlations revealed that 1982 family income was significantly related to various kinds of functioning, although marital status was not.⁵ Specifically, having a lower income was associated with poorer functioning. However, even after controlling for differences in present family income, the

majority of differences between bereaved and control spouses remained intact.

For the parent study, three of the four statistically significant differences in functioning between bereaved and control respondents remained significant after income and marital status were controlled. The remaining comparison (the Weissman Relative subscale) remained marginally significant ($p < .11$). Partial correlations revealed that both current family income and marital status were significantly related to functioning within the parent study. Specifically, having a lower income and/or being separated or divorced was associated with significantly poorer functioning.

Analysis by Year of Crash

To determine whether there were any differences in functioning between those who lost a spouse or child 6 to 7 years ago and those whose losses had occurred 4 to 5 years ago, a multiple regression analysis was performed with *year of death* as the free independent variable and present family income, marital status, age, and sex as the four fixed independent variables. Thus, we were able to examine whether the year of death variable was an important predictor of outcomes, controlling for significant demographic variables. The results from this analysis indicated that the year of death variable was not significantly related to any of the outcome measures. Those who lost a spouse or child 6 to 7 years ago appeared not to function differently from those who lost a spouse or child 4 to 5 years ago.

Current Thoughts and Feelings About the Loss

Concerning the issue of whether the bereaved respondents were still dealing actively with the loss, 60% of the bereaved spouses and 67% of the bereaved parents reported that they had talked with someone about their loved one or his or her death during the past month. Ninety percent of the bereaved spouses and 96% of the bereaved parents indicated that during the past month memories, thoughts, or mental pictures of the deceased had come into their mind. Of these people, 56% of the bereaved spouses and 68% of the bereaved parents reported that these memories made them feel "hurt and pained" sometimes, frequently, or always.

Since the crash, 82% of the bereaved spouses and 79% of the bereaved parents indicated that in their mind, they had gone over the events that led up to their loved one's death. Forty-five percent of the bereaved spouses and 49% of the bereaved parents reported that they had relived events in this way during the past month. Similarly, 52% of the bereaved spouses and 62% of the bereaved parents indicated that, since the crash, they had found themselves thinking: "If only I had done something differently, my [spouse/child] would still be alive." Twenty-eight percent of the bereaved spouses and 28% of the bereaved parents reported having such thoughts during the past month.

⁵ Because of the small number of bereaved respondents in the spouse study who had remarried ($n = 12$), the lack of a significant effect for remarriage should not be assumed to be stable. Studies with larger numbers of remarried respondents are needed to test the effects of remarriage on recovery.

Sixty-two percent of the bereaved spouses and 59% of the bereaved parents reported having had thoughts during the past month that the crash was unfair or that they had been cheated by it. And finally, 32% of the bereaved spouses and 52% of the bereaved parents indicated that they had found themselves searching to make sense of, or to find some meaning in, their loved one's death during the past month.

Acceptance of the Loss

With regard to whether the bereaved respondents had accepted or come to terms with the loss, we found that 38% of the bereaved spouses and 37% of the bereaved parents reported that they sometimes felt that the death was not real and that they would wake up and it would not be true. In addition, 32% of the bereaved spouses and 41% of the bereaved parents indicated that, even though they realized it was not possible, they sometimes imagined their spouse or child coming back.

Sixty-eight percent of the bereaved spouses and 59% of bereaved parents said that they had not made any sense at all or found any meaning in the death. Further, of these people, 73% of the bereaved spouses and 81% of the bereaved parents reported that it had been "somewhat," "quite," or "a great deal" painful for them not to have found any meaning in their spouse's or child's death.

Finally, a great majority of bereaved respondents had asked themselves the question "Why me?" or "Why my [spouse/child]?" (85% of spouses and 91% of parents). Of these people, 59% of the bereaved spouses and 59% of bereaved parents said they were unable to answer the question.

Discussion

The results suggest that sudden, unexpected loss of a spouse or child is associated with long-term distress. In the spouse study, there were significant differences between bereaved and control respondents on a variety of different indicators of effective coping and adjustment, including depression and other psychiatric symptoms, social functioning, reactivity to good events, psychological well-being (quality of life), and future worries and concerns. These results emerged both on previously validated self-report scales, such as the SCL-90-R (Derogatis, Rickels, & Rock, 1976) and the Weissman Social Adjustment Scale (Weissman & Bothwell, 1976) and on measures designed especially for this project, such as instruments to assess worries about the future or the ability to obtain pleasure from positive events. Comparisons with Derogatis' national norms revealed that the bereaved spouses were virtually indistinguishable from psychiatric outpatients on six of the nine subscales measuring symptomatology. Significant differences between bereaved and control respondents also emerged on open-ended questions, such as those in which respondents were asked to discuss how their lives were going at present. For the most part, differences between bereaved spouses and controls persisted when other important variables, such as 1982 family income and present marital status, were statistically controlled.

Comparisons between bereaved and control parents also revealed significant differences on depression and a few other measures of functioning, although these were not as pervasive

as those obtained in the spouse study. However, in both the parent and spouse studies, bereavement was associated with an increased mortality rate, a drop in financial status, and (in the parent study) a higher divorce rate. There was also evidence in both the bereaved spouse and parent groups that the loss continued to occupy their thoughts and cause distress. Interestingly, there were no differences between bereaved respondents and controls on some variables such as current physical health or alcohol and drug use.

Past researchers concerned with conjugal bereavement (Atchley, 1975; Marris, 1958; Morgan, 1976) have concluded that income is the major intervening variable in psychological well-being, owing to its influence on the mobility and social interaction of the bereaved. In fact, Harvey and Bahr (1974) argued that most of the negative impact of conjugal bereavement is more directly correlated with change in income than with change in marital status. Although there were differences between conjugally bereaved and control respondents in current family income, these differences did not account for the majority of the variance between bereaved and control respondents' present-day functioning. As the multiple regression analysis demonstrates, almost all of the differences between the bereaved spouses and controls were greater than would have been expected on the basis of differences in present family income.

It is important to consider whether there are any other alternative explanations that can account for the present findings. One possible explanation concerns differential response rates between the bereaved and control samples. As noted earlier, the number of respondents who declined to participate was somewhat greater in the bereaved than in the control sample. If those who declined to participate in the study were coping especially well, then problems in functioning may be overrepresented by those bereaved persons who agreed to participate in the study. However, analysis of the reasons for refusal given by the bereaved who declined to participate fails to support this reasoning. Approximately 90% of the refusals gave such reasons as, "I don't want to bring back those memories," "I don't feel up to it," or "I just can't do it. I will never get over it. It's like an open wound—I would cry all the way through it." Only 3 of the 35 refusals gave any indication that they had gotten over the loss, by saying such things as, "I have finally gotten myself together and I don't want to bring it up again." Although these data must be interpreted cautiously, it appears that if there were systematic differences between those bereaved who participated in the study and those who refused, those who refused were probably functioning more poorly.

A second possible alternative explanation for the differences between bereaved and control respondents is that the controls who participated in this study are unrepresentative of the general population. Such differences would be obtained, for example, if the control respondents as a group were functioning better than normal. However, a comparison of control respondents with national norms on the SCL-90-R (Derogatis, 1977) revealed that they reported significantly higher levels of distress than does the general population. For this reason, we are relatively confident that the differences between the bereaved and control groups cannot be accounted for by a control group that exhibits unusually low levels of psychiatric symptoms.

A third possible alternative explanation concerns social desir-

ability. Perhaps respondents exaggerated the distress they were experiencing because they felt that displaying distress would be socially desirable or expected during the interview. However, it can be argued that among those who had suffered a loss 4 to 7 years ago, the most socially desirable response would be one that demonstrates recovery from the loss. There is evidence that those who convey distress even a few days or months after the loss are regarded as engaging in socially inappropriate behavior (see Silver & Wortman, 1980, for a more detailed discussion). As Walker, MacBride, and Vachon (1977) have concluded, "Widows frequently report that even intimates do not support the need to mourn their loss beyond the first few days after the death" (p. 38). Far from being accounted for by social desirability, we feel that the expression of distress 4 to 7 years later is all the more remarkable in light of the implicit social pressures to be recovered from the loss. Moreover, agreement with many of the specific questions included in this study, such as inability to find meaning in the loss or the feeling that one's loved one may come back, clearly seems to reflect responses that are not socially desirable.

In our judgment, the most serious threat to the validity of these findings concerns the possibility that respondents' distress scores were artificially inflated because of the context in which they were obtained. As in virtually all other studies of bereavement or other life crises, respondents were told that the purpose of the interview was to examine the impact of the loss. It is possible that by contacting respondents and requesting an interview, we raised a series of troubling issues that are not normally on their minds. As noted earlier, however, the interview included several questions about the frequency of thoughts and conversations about the deceased family member. These data strongly suggest that, for most of the respondents, thoughts and feelings about the accident and about their loved one are a common occurrence. Thus, we feel that it is unlikely that the distress scores were artificially inflated because the interview confronted respondents with distressing issues that they had not considered for some time.

A related argument is that perhaps our respondents were functioning normally, but that participating in an interview concerning the loss of their loved one heightened their momentary distress and colored their responses for the entire interview. Although such an explanation is difficult to discount entirely, there are several reasons why we believe it is unlikely to account for our findings. First, such an explanation cannot explain the pattern of results obtained. If reports of symptomatology and problems in functioning were exaggerated because of the context in which they were obtained, one would expect respondents in the spouse and parent studies to exhibit similar levels of distress. One would also expect distress to be displayed consistently across all of the various measures. Clearly, an explanation in terms of context effect cannot account for the differences obtained across groups of respondents or across measures. In addition, an explanation in terms of context effects cannot account for differences in mortality, financial status, or divorce. A context interpretation is also weakened by the reliance in this investigation on carefully validated instruments, such as the SCL-90-R, that are supposedly not amenable to distortions because of momentary mood.

In our interviews, an effort was made to minimize problems

with context effect by beginning the interview with questions about present-day functioning. All questions about the accident or about thoughts and feelings about the loved one were placed near the end of the interview. The only way to eliminate context effects completely would be to withhold information about the nature of the study from participants and use another pretext to elicit data about functioning. For example, bereaved respondents could have been told that the study concerned Michigan residents' views about life, as control respondents were told. In addition to the ethical issues that surround the collection of information under false pretenses, such an approach makes it difficult to include questions in the interview concerning the accident or respondents' reactions to it. Moreover, it was our judgment that bereaved individuals might be more likely to participate in the study if they were told about the purpose of the interview. The development of paradigms that minimize problems with context effect, while keeping respondents informed about the nature of the study and providing an opportunity to question them about the life stress in question, remains a challenge for subsequent investigators in this area.⁶

The results presented here suggest that the current theoretical approaches to bereavement may need to be reexamined. One current view is that those who experience life crises go through various stages of emotional distress, which may include shock, anger, and depression. These stages are followed by a final stage of resolution, which is generally called recovery (Bowlby, 1980; Klinger, 1975, 1977; Silver & Wortman, 1980). Most of these models do not postulate precisely how much time elapses before an individual recovers from a single traumatic life event. Nonetheless, individuals are expected to return to normal role functioning and are not expected to experience distress several years after the loss has occurred (cf. Silver & Wortman, 1980).

A second theoretical approach to bereavement is a psychodynamic one, based on Freud's (1917/1957) formulation of loss. According to this model, the central process in bereavement involves the detachment of the affective bond to the deceased. At the conclusion of the mourning period, the bereaved is said to have "worked through" the loss and to have freed himself or herself from the attachment to the loved one. Persisting manifestations of distress are thought to indicate an irresolution of the

⁶ One possible solution to the context effect problem involves randomly assigning bereaved respondents to two different data collection procedures: one in which data are obtained about functioning only and in which the accident is not discussed; and a second in which data are obtained about functioning and about the accident. If responses to functioning questions are similar in the two groups, a context effect explanation would be weakened. Another possible solution involves informing respondents that the study concerns reactions to life stress and withholding the information that the major stressor being investigated is bereavement. Respondents could first be asked questions about daily mood, functioning, and well-being. These would be followed by questions about stressful life experiences. Respondents would presumably mention the loss of their family member in response to such questions. At this point, respondents could be asked if they would be willing to answer some questions about the loss. Either of these approaches could be used to minimize problems with context effects. However, both raise ethical issues because they involve withholding information about the true purpose of the study.

detachment process and to "reflect an incomplete adjustment to the loss" (Rubin, 1981, p. 102).

Taken as a whole, the results presented here provide little support for either of these views. From 4 to 7 years after the sudden loss of a spouse or child, bereaved respondents showed significantly greater distress than did matched controls, suggesting little evidence for a timely resolution. Contrary to what some early writers have suggested about the duration of the major symptoms of bereavement (Bornstein & Clayton, 1972; Clayton et al., 1968, 1972; Lindemann, 1944), both spouses and parents in our study showed clear evidence of depression and lack of resolution at the time of the interview, which was 4 to 7 years after the loss had occurred.

These results also provide little indication that by 4 to 7 years after the crash, the respondents had "worked through" the loss. In fact, responses to a wide range of questions about current thoughts, memories, and feelings suggested that a significant percentage of respondents (from 30% to 85%, depending on the question) were still dealing actively with the loss. Many of these individuals were still searching for some meaning in what had happened. Taken together, these results are consistent with the view expressed by Caplan (1974) that most bereaved persons continue the psychological work of mourning for their deceased loved ones for the rest of their lives.

Of course, expectations of recovery are held not only by theorists but also by health care professionals, by laypersons, and by the bereaved themselves (cf. Silver & Wortman, 1980). When bereaved individuals fail to conform to these unrealistic expectations, others may convey that they are coping poorly or that this is indicative of serious psychological disturbance. Indeed, an implicit assumption running through many current articles on coping is that if people have the right outlook, the right attitudes, and the right coping strategies, they can overcome virtually any crisis (see, e.g., Simonton, Matthews-Simonton, & Creighton, 1978). The present findings suggest that among those who experience a sudden, traumatic loss of a loved one, such a view may be unwarranted. As Parkes and Weiss (1983) have pointed out, "Pathology may be a reasonable response to the unexpected and untimely death of one's spouse. . . . What might be characterized as psychological difficulty or even psychiatric illness can be an understandable consequence of loss" (p. 170). Our data clearly indicate that, following the traumatic loss of one's spouse or child, lasting distress is not a sign of individual coping failure but, rather, a common response to the situation.

These findings suggest a number of directions for future research. Life events researchers typically examine the impact of events that occurred in the past year or past 6 months on current symptoms. Similarly, investigators studying reactions to specific life crises such as loss of a loved one, criminal victimization, or serious illness usually follow people for approximately 1 year (see Silver & Wortman, 1980, and Kessler, Price, & Wortman, 1985, for reviews). For this reason, we have very little sense of recovery time for any particular event. Moreover, a major interpretive problem with such studies is that they fail to clarify whether respondents' mental distress represents a temporary emotional upheaval or more long-lasting difficulties. The present study suggests that exposure to stress can trigger enduring changes in mental health and functioning. Among in-

dividuals who have experienced life events, longer-term investigations may be essential for a full appreciation of the impact of such stressors.

Comparisons between bereaved spouses and controls revealed a somewhat larger number of significant differences than did comparisons between bereaved parents and controls (see Table 1). This provides suggestive evidence that the loss of a spouse may pose more difficulties for subsequent functioning than does the loss of a child. In subsequent research, it would be important to determine whether the loss of a spouse is indeed more devastating than other significant losses. Because the spouse is a critical figure in fostering security, for instance, conjugal bereavement is especially likely to provoke feelings of vulnerability and anxiety (Parkes & Weiss, 1983). Death of a spouse may also be especially likely to involve the loss of an important source of social support and, thus, deprives the bereaved of a critical resource for coping with the crisis. Finally, loss of a spouse may confront the remaining spouse with a greater number of chronic stressors (e.g., dealing with financial affairs, moving) than does the loss of a child. However, because of the particular difficulty in tracking bereaved parents and the higher mortality and refusal rates among this group, our sample of parents may be biased toward those who are coping well. For this reason, the data may underestimate the long-term distress experienced by parents who have lost a child. In fact, a multiple regression analysis controlling for sex, marital status, income, and so on was performed in order to determine whether there were significant differences between bereaved spouses and parents. This analysis revealed no significant differences between bereaved spouses and parents on any of the outcome measures (see Lehman, 1985, for a more detailed discussion). Additional studies are needed to provide a more complete documentation of the short- and long-term impact of losing a child.

In the present study, long-term distress and psychiatric symptoms were the typical responses to the loss of one's spouse or child. In subsequent research, it would be useful to identify characteristics of events that are likely to have such a pathogenic impact (Thoits, 1983). All of the respondents in the present study suffered losses that were unexpected and untimely, and these qualities of the loss may have made it particularly difficult to resolve. When a loss occurs suddenly and without warning, it may be especially likely to shatter a person's assumptions that the world is orderly, rational, and fair (Parkes & Weiss, 1983; Wortman, 1983). For this reason, those who suddenly lose a spouse or child may be more preoccupied with thoughts about how the loss could have been avoided, and they may have more difficulty coming to terms with the loss. In subsequent research, it would be interesting to compare the process of adaptation to events that differ in systematic ways, such as their suddenness. Research of this kind would not only serve to illuminate important conceptual issues, it would be helpful in identifying those in special need of intervention efforts.

Because the major focus of this investigation was on long-term bereavement effects, we selected a research design that permitted us to assess the reactions to the loss of a spouse or child from 4 to 7 years after the death had occurred. For this reason, our data provide little information about the process through which loss affects psychiatric symptoms, social functioning, and the quality of life. By studying individuals from the

onset of the crisis, and by assessing variables such as role strains, assumptions about the world, and coping skills and resources, it may be possible to explicate the mechanisms linking undesirable life events to subsequent health outcomes (Kessler et al., 1985).

The data also leave a number of unanswered questions about the trajectory of the recovery process (see Vachon, Rogers, et al., 1982; Vachon, Sheldon, et al., 1982). This study provides evidence that experiencing a sudden, unexpected loss can result in enduring difficulties. However, the study design does not provide information about the stability of these differences over a several-year period. In the present study, no differences in symptoms or functioning were observed between those who lost a spouse or child 6 to 7 years ago and those whose loss occurred 4 to 5 years ago. Ten, 15, or 20 years after the loss, will respondents still experience depression, problems in functioning, and painful memories about the loss? In future research, it would be worthwhile to determine whether bereaved individuals will gradually show some improvement or whether they will continue to exhibit similar levels of distress for the rest of their lives.

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