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Social Constraints, Intrusive Thoughts, and Depressive Symptoms Among Bereaved Mothers

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The study examined how social constraints on discussion of a traumatic experience can interfere with cognitive processing of and recovery from loss. Bereaved mothers were interviewed at 3 weeks (T1), 3 months (T2), and 18 months (T3) after their infants' death. Intrusive thoughts at T1, conceptualized as a marker of cognitive processing, were negatively associated with talking about infant's death at T2 and T3 among socially constrained mothers. The reverse associations were found among unconstrained mothers. Controlling for initial level of distress, there was a positive relation between T1 intrusive thoughts and depressive symptoms over time among socially constrained mothers. However, higher levels of T1 intrusive thoughts were associated with a decrease in T3 depressive symptoms among mothers with unconstrained social relationships.

Major traumatic events may exact their psychological toll by challenging individuals' basic beliefs about themselves and their world (Epstein, 1973; Janoff-Bulman, 1992; Parkes, 1971). To the extent that individuals' basic assumptions of life have been shattered by a traumatic event, they may need to integrate information inherent in the trauma that is discordant with their preexisting mental schemas in order to recover from it (Horowitz, 1986; Janoff-Bulman, 1992). Those attempting to integrate traumatic experiences appear to engage in two fundamental processes. One is essentially intrapsychic. It involves the gradual integration of traumatic experiences through processes that are as yet not clear, but appear to require repeated exposure to traumatic stimuli including thoughts, memories, and images related to the trauma (Rachman, 1980). The other process, which may be a strategy to facilitate the first, is to talk with others about the experience. By talking with supportive and empathic others, trauma survivors may be able to contemplate and tolerate aversive trauma-related thoughts for longer periods of time than they would on their own. In addition, talking with receptive others might help people make sense of a traumatic experience (Silver, Boon, & Stones, 1983), get information about coping strategies, or gain control over their emotions (Clark, 1993).

If talking about traumatic experiences helps people to confront their intrusive thoughts and, thus, to integrate the traumatic experience, it should also facilitate adjustment. Unfortunately, not everyone has a receptive social network with which they can discuss their trauma-related thoughts and feelings (Lepore, 1992, in press). Indeed, some survivors may find that their social network responds negatively to their attempts at disclosing trauma-related thoughts and feelings (Herbert & Dunkel-Schetter, 1992). If talking about trauma-related thoughts and feelings facilitates cognitive processing and adjustment, social constraints on talking should have the opposite effect and interfere with cognitive processing and adjustment. The present study tested these hypotheses by examining how social constraints on talking influence the psychological adjustment of parents who have experienced the unexpected loss of their child to Sudden Infant Death Syndrome (SIDS). We sought to integrate two common and possibly fundamental aspects of adjustment to trauma: the experience of intrusive trauma-related thoughts and the need to talk about traumatic experiences.

Cognitive Processing of Traumatic Events

Cognitive processing models have received a great deal of interest in the past decade (e.g., Creamer, Burgess, & Pattison, 1990; Epstein, 1985; Foa, Steketee, & Rothbaum, 1989; Horowitz, 1986; Janoff-Bulman, 1992; Parkes, 1975; Wilson, 1989). A detailed description of these theories and the distinctions between them is beyond the scope of this article. However, we will highlight what appear to be common and important character-

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istics of these theories and then describe how social constraints might influence cognitive processing of traumas.

One assumption of cognitive processing theories is that prior to traumatic events people have mental schemas that contain information about themselves and their world. For example, individuals may believe that they are personally invulnerable (Perloff, 1983) or that the world is a just place where people get what they deserve (Lerner, 1980). A traumatic experience can shatter such assumptions about the self and the world by confronting people with information that they are indeed vulnerable and the world is not always just. Epstein (1985) has argued that people are motivated to assimilate events that are incongruent with their self or world schemas because resolving such incongruities results in positive affect and failure to resolve them results in extreme distress (also see Janoff-Bulman, 1992). According to cognitive processing theorists, recovery from trauma requires individuals to process the trauma-related information until it can be incorporated into preexisting inner models or until the preexistent schemas can be modified to accommodate the new information. Consequently, attempts to integrate the trauma into a schematic representation can take the form of exposure to aversive thoughts, memories, and images related to the trauma. If people do not confront these aversive thoughts, or if they attempt to avoid them, the traumatic event will not be integrated. Incomplete processing of a traumatic event may keep it active in memory and precipitate recurrent, intrusive thoughts about the event (Singer, 1978). Intrusive thoughts and avoidance are hallmarks of the posttraumatic stress syndrome, or PTSD (American Psychiatric Association, 1994).

A central theme in cognitive processing theories is that traumatic memories must be activated so that they can be integrated into schematic representations. From this perspective, intrusive thoughts can be seen as a manifestation of cognitive processing. Creamer and colleagues (1992) explicitly argued that although intrusive thoughts can be distressing, they are likely to be adaptive in the long run: "This exposure [to trauma-related memories] allows stimulus–response connections to be weakened and prompts modification of the meaning associated with the incident" (p. 454). Rachman (1980) similarly observed that people appear to become habituated to aversive traumatic stimuli after repeated exposures (also see Horowitz, 1986). Cognitive processing theories also suggest that not all people need to engage in processing to the same extent. Presumably, individuals whose preexisting schemas can accommodate the information inherent in a traumatic event will adjust to the event more rapidly than individuals whose preexisting schemas are discordant with the information inherent in the event (Wortman & Silver, 1989; Wortman, Silver, & Kessler, 1993). For example, particular religious beliefs or philosophical orientations could facilitate individuals' understanding or acceptance of traumatic events (McIntosh, Silver, & Wortman, 1993). Moreover, individuals whose basic assumptions of life are not challenged by a particular traumatic event should exhibit few signs of cognitive processing, such as intrusive thoughts (Wortman et al., 1993).

A current limitation of cognitive processing theories is that they do not readily account for failures in processing (see Rachman, 1980). As noted above, cognitive processing theorists maintain that exposure to aversive, trauma-related thoughts may be necessary for adjustment in people who have not successfully or completely integrated their traumatic experience. However, research on the long-term effects of traumatic events has shown that some people experience intrusive thoughts for many years after an event and that such thoughts are linked to severe and prolonged emotional, behavioral, and physiological disturbances (e.g., Baum, Cohen, & Hall, 1993; Silver et al., 1983; Tait & Silver, 1989). Thus, a central challenge in trauma research is how to account for individual differences in the nature of responses to trauma in general and to posttraumatic intrusive thoughts in particular.

One explanation for the equivocal effects of intrusive thoughts on adjustment may lie in how individuals respond to their intrusive thoughts. If people try to avoid or suppress thoughts and memories of the event, they might not have adequate opportunity to process or habituate to the thoughts. In addition, as Wegner's (1994) experiments suggest, active thought suppression may have the paradoxical effect of sustaining or increasing thoughts that one is trying to suppress. Thus, people who engage in avoidant coping strategies and do not confront their intrusive thoughts may get caught in a vicious cycle of intrusions and avoidance. When intrusive thoughts become particularly intense or prolonged, they appear to be associated with psychological distress (Horowitz, 1982).

There are numerous reasons why people might attempt to avoid or cognitively suppress trauma-related stimuli, including intrusive thoughts. For example, some people may be predisposed to cope by avoiding unpleasant stimuli (Roth & Cohen, 1986). Alternatively, when intrusive thoughts are extremely disturbing or arousing, individuals might want to escape from or avoid them. There are other individuals, however, who may want to engage actively in thinking and talking about a traumatic event, but they feel forced to inhibit these desires because other people have responded negatively toward them (Tait & Silver, 1989). We believe that social constraints on individuals' expression of trauma-related thoughts and feelings may cause them to inhibit their discussion of the trauma and, possibly, to make efforts to suppress their intrusive thoughts. Behavioral inhibition in response to negative social reactions might heighten trauma victims' emotional distress.

Talking and Social Constraints on Talking

The notion that inhibition can exacerbate emotional disturbance following traumatic events can be traced to Freud (1957). Inhibition appears to have implications for intrusive thoughts and emotional recovery following traumatic events. For example, Pennebaker and colleagues have shown that failure to disclose traumatic experiences, such as death of a loved one, sexual abuse, or divorce, is associated with elevated psychological distress, health complaints, physician visits, and trauma-related ruminations (see Harber & Pennebaker, 1992; Pennebaker, 1989). Pennebaker (1989) has suggested that part of the failure to discuss negative life events can be attributed to stigma associated with the events (e.g., stigma associated with rape), as well as other social constraints (also see Pennebaker & Harber, 1993). As we have suggested above, people who feel that they cannot talk to others may be inclined to inhibit their discussion of traumatic experiences and therefore have fewer opportunities to process their traumatic experiences. Social

constraints on talking about traumatic experiences also might be stressful, thereby increasing individuals' level of arousal. Heightened arousal or stress that may accompany social constraints could interfere with cognitive processing (see S. Cohen, 1978; Rachman, 1980). Some theorists have argued that people who do not discuss a traumatic experience may be less likely to find meaning in it (Tait & Silver, 1989) or gain insight into how to resolve it (Clark, 1993) than people who do discuss it.

Not everyone feels compelled to talk about traumatic events, nor does everyone need to talk to recover successfully (see Silver & Wortman, 1980). As we noted above, individuals whose philosophical perspective or world view allows them to understand or accept traumatic experiences readily may not engage in prolonged or intense ruminating about the experience (Wortman & Silver, 1989). Such people presumably would have little need to talk about the traumatic event, as well. However, the normative response to traumatic events is to talk about them with others. In studies of various trauma survivors, including cancer patients, disaster victims, and the bereaved, the majority of survivors report that they have talked about their trauma with others (see discussions by Pennebaker & Harber, 1993; Rime et al., 1994). Janoff-Bulman (1992) observed: "For some survivors, there is a seemingly insatiable need to talk about what happened, to tell people about their experience (p. 108)." Rime, Philippot, Boca, and Mesquita (1992) have found in several studies that 90% or more of the people who experience negative life events had verbally shared the experience with another person. Some people may continue to talk about a traumatic event, such as the unexpected death of a loved one, for years after it occurs (Lehman, Wortman, & Williams, 1987), although most verbal sharing occurs shortly after negative events (Rime et al., 1992).

Despite the apparently common need for individuals to talk about traumatic events, and despite the fact that talking might facilitate cognitive processing and emotional recovery, many people might experience social constraints that force them not to talk about traumatic events (Pennebaker & Harber, 1993). One social constraint is a lack of access to people who are willing to lend a sympathetic ear, assistance, or words of comfort. Some stressors have such a widespread impact that there is nobody available to support or listen to those who are most profoundly affected by them. Bereavement has been characterized as a "social network crisis" (Vachon & Stylianos, 1988), in which the loss of a significant member of a social network can be distressing and debilitating to the entire group. When a baby dies, it is possible that both parents and other members of the extended family are so deeply affected that they cannot offer appropriate support to one another. Results from several recent investigations suggest that some stressors can disrupt social interaction patterns and lead to a deterioration in perceived support (Evans & Lepore, 1993; Kaniasty & Norris, 1993; Lepore, 1992, in press; Lepore, Evans, & Schneider, 1991).

Another social constraint exists for people who have a support network whose members say or do things that are perceived by the recipient as inappropriate or insensitive (cf. Wortman & Lehman, 1985). For example, if support providers do not know what to say to a victim of a negative life event, they sometimes resort to scripted and glib responses (e.g., "it's not so bad") or attempt to minimize the event (e.g., telling bereaved parents they can "always have another baby"; cf. Helmrath & Steinitz, 1978). To avoid hearing painful, embarrassing, or unhelpful social responses, individuals may keep their thoughts and feelings to themselves.

Finally, some people may feel constrained in discussing their trauma-related thoughts and feelings because of outright negative reactions of others. The irrevocable nature of some stressors, such as death of a loved one or a terminal illness, might lead social network members to abandon or avoid a person in need because they feel helpless or feel that they cannot undo the stressor that the person is facing (Wortman & Lehman, 1985). Psychological defense mechanisms of social network members also might lead them to act in undesirable ways. For instance, people might worry that a traumatic event that befell a friend could just as easily happen to them (Coates, Wortman, & Abbey, 1979). In such situations, potential support providers might reduce their feelings of vulnerability by distancing themselves from victims or blaming them for their plight (Herbert & Dunkel-Schetter, 1992; Wortman & Dunkel-Schetter, 1979).

In summary, two frequent responses to traumatic events are a tendency to experience event-related intrusive thoughts and to talk about the event. Whereas intrusive thoughts appear to be a marker of underlying and incomplete cognitive processing of events, talking with others appears to be one method to facilitate this processing and emotional recovery. When social constraints on talking exist, individuals may be forced to suppress discussing the trauma. We predicted that this forced inhibition would interfere with cognitive processing and, consequently, contribute to or prolong psychological distress. We tested our social-cognitive-processing model in a sample of mothers who experienced a sudden and unexpected traumatic event, the loss of a child to SIDS. We hypothesized that mothers who experienced high levels of intrusive thoughts shortly after the death would tend to talk about the event if they did not feel socially constrained but would inhibit themselves from doing so if they felt constrained. In addition, we hypothesized that intrusive thoughts shortly after the death would be associated with poorer psychological adjustment over time in mothers who felt socially constrained but not in mothers who felt relatively unconstrained.

Method

Sampling Procedures

Three hundred thirty infants in Cook County, Illinois, and Wayne County, Michigan, were suspected of having died of SIDS during our study period (1983–1984). We attempted contact with 281 mothers who met our eligibility requirements: (a) death was classified as SIDS on the basis of an autopsy; (b) mother was English speaking; and (c) mother was at least 15 years old (for more details, see Downey, Silver, & Wortman, 1990).[1] Eligible mothers were invited to participate in the study, which involved three face-to-face interviews conducted approximately 3 weeks (T1), 3 months (T2), and 18 months (T3) after their infants' death. We successfully contacted and recruited 171 mothers at

[1] Parents of 162 additional infants who died of SIDS during 1983–1984 in the counties under study were randomly assigned to a measurement control condition in which they were invited to participate in our research at one time only—18 months after their infants' deaths. As these participants are not part of the results we report, they are not discussed further.

T1 (61% of total eligible mothers). At T2 and T3, respectively, 128 (75% of T1 respondents) and 98 (57% of T1 respondents) mothers were re-interviewed. These response and attrition rates compare favorably with other bereavement studies (see Stroebe & Stroebe, 1989). To determine whether there was differential attrition across waves, mothers who participated in all three interviews (n = 98) were compared with those mothers who were involved in the first interview only (n = 73). Separate t tests were performed to determine if there were differences between people who completed all waves of the study and people who completed only the early interview. The t tests were performed on eight variables assessed at T1: education, income, age, social constraints, intrusive thoughts, depressive symptoms, desire to talk, and actual amount of talking (all $ps > .05$). Chi-square tests revealed no association between attrition and marital status or race (all $ps > .05$).

Because the attrition analyses did not reveal any systematic differences in those who completed all of the interviews and those who did not, we present the demographics on all of the women who completed the first interview. The median age of the mothers was 23 years (range: 15 to 40 years); the median annual family income was $5,000–$5,999 (range: under $1,000 to over $35,000); the median number of years of education was 11 (range: 8 to 17 years); 37% were married, 52% were single and never married, and the remainder were separated, divorced, or widowed. The mean number of children living in the household was 2.15 (SD = 1.68), and the mean age of the infant at time of death was 79 days (SD = 52 days). The race distribution was 64% African American, 33% White, and 3% other races. The low income levels and high proportion of African Americans in the sample reflects the characteristics of families whose children die of SIDS in major metropolitan areas throughout the United States (Zopf, 1992).

We also collected data from the infant's biological father if he was living with the mother at the time of the death. There were 56 eligible fathers interviewed in the first wave, but only 28 were reinterviewed by the last wave. Although we will report some basic descriptive results on the fathers, they were excluded from the central analyses for several methodological and theoretical reasons. First, previous research has suggested that mothers and fathers have different emotional reactions to the death of a child, with mothers exhibiting more intense distress (Shanfield, Benjamin, & Swain, 1988). Second, women and men are known to have different kinds of social networks, with women typically having many individuals they can rely on for support and men relying mainly on their wives (see Umberson, Wortman, & Kessler, 1992, for a review). Because the number of men in this study was not large enough to allow a systematic assessment of these and other possible gender differences, the analyses reported below focus primarily on women.

Interview Procedures

Data were collected using a structured interview that lasted for 2 hours, on average. Procedures were identical at all three interviews and, when possible, respondents were assigned to the same interviewer at all waves (for more details, see Downey et al., 1990). Respondents received $10.00 at the completion of each interview. Demographic and background variables were assessed in the first interview. The remaining variables, which are described below, were assessed in all three interviews.

Measures

SCL-90–R Depressive Symptoms Scale. Level of psychological distress was measured with the 13-item depressive symptoms subscale of the SCL-90–R (Derogatis, 1983). This measure has been shown to have adequate internal characteristics (Derogatis & Cleary, 1977) and convergent validity (Derogatis, Rickles, & Rock, 1976). Mothers indicated on a 5-point scale (1 = *not at all* to 5 = *extremely*) how distressed they were by different depressive symptoms (e.g., feeling blue or feeling worthless) in the prior week. A mean scale score was derived, with higher scores indicating higher distress. In the present study, Cronbach's alphas ranged from .90 (T1) to .92 (T3).

Intrusive Thoughts Scale. A 6-item scale (see Appendix A) was developed to assess the frequency with which mothers had intrusive thoughts about their deceased infant. Mothers indicated on a 5-point scale (1 = *never* to 5 = *always, or all the time*) how often in the prior week they had undesirable and uncontrollable thoughts, mental images, and memories about their deceased infant (e.g., "Have unpleasant memories, thoughts, or mental pictures of your baby ever come into your mind?"). A mean scale score was derived, with higher scores indicating more frequent intrusions. The scale had adequate internal consistency, with Cronbach's alphas ranging from .72 (T1) to .84 (T3).

Social Constraints Scale. A 10-item scale (see Appendix B) was developed to measure the degree to which mothers felt their social relationships were strained and that they were constrained in discussing their trauma-related thoughts and feelings with others. The scale contained five questions that were asked twice: once with respect to the "most important person" in the respondent's life at the time and once with respect to "other people" in the respondent's life (e.g., "How often did you feel as though you had to keep your feelings about your baby's death to yourself because they made [important other/other people] uncomfortable?"). All items referred to respondent's experiences over the prior week and were anchored by a 5-point scale (1 = *almost never* to 5 = *almost always*). A mean scale score was derived, with higher scores indicating a greater degree of social constraints.

Although we expected to be able to discriminate between constraints from important versus less important others, factor analysis of the 10 items revealed that the best solution was a unified scale. The single-factor solution had an eigenvalue of 2.67, and all items loaded .40 or greater. This factor accounted for 27% of the variance. The factor analysis was performed on the entire T1 sample. The scale had adequate internal consistency, with Cronbach's alphas ranging from .77 (T1) to .81 (T3). A possible explanation for the convergence of the two scales may lie in the way that people nominated the most important other. Responses to this item were quite diverse. The majority of respondents nominated their marital/romantic partner (56%) or their mother (30%). Additional responses included siblings (5%), a friend (3%), father (1%), and others (4%). The questions pertaining to other people simply referred to anyone other than the most important person in the respondent's social network. Thus, there might have been overlap in the types of people different respondents nominated on the questions referring to most important person and other people.

Desired and actual amount of talking. One question was used to assess the degree to which mothers desired to talk about their infant's death:

> Following the loss of a baby, people react in different ways. For example, some people want to talk about what has happened to them, while others don't. During the past week, how often have you ever wanted to talk about the events leading up to your baby's death?

Respondents answered on a 5-point scale (1 = *almost never* to 5 = *almost always*). Because some of the items in the social constraints measure imply that mothers had some desire to talk about their loss, the desire to talk variable was used to identify and remove from further analyses those few mothers (n = 9; 5% of T1 sample) who reported that they *never* wanted to talk about the infant's death to others.

Actual amount of talking was assessed by two questions: "During the past week, how often did you actually talk with your [important other] about your baby and his/her death?" and "How often did you actually talk with people other than [important other] about your baby and his/her death?" Mothers responded to each question using a 5-point scale (1 = *not at all* to 5 = *a great deal*). The two items were significantly correlated (r = .35, $p < .001$), and the mean of the two items was used to assess whether mothers talked about the infant and his or her death.

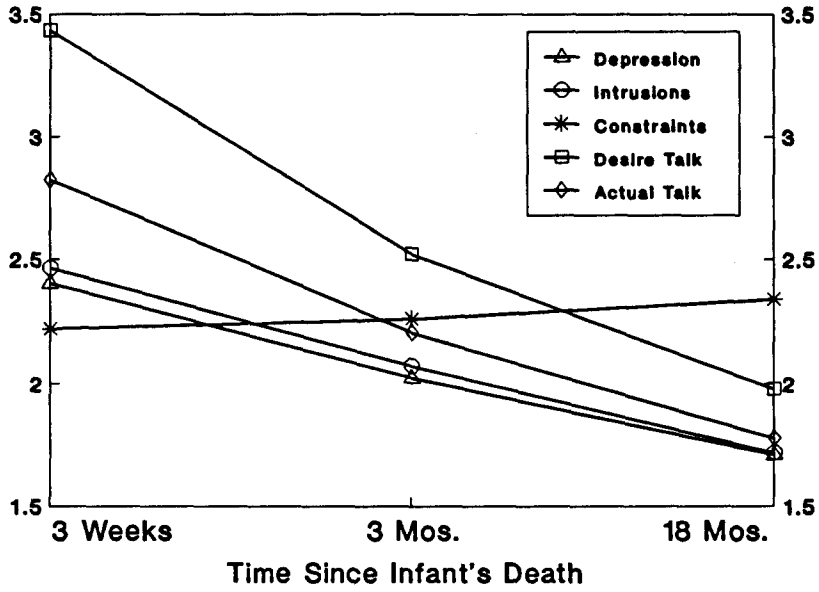

Figure 1. Mean depressive symptoms, intrusive thoughts, desire to talk, amount of talking, and social constraints in mothers at 3 weeks (T1), 3 months (T2) and 18 months (T3) after the death of their infants ($n = 98$). Mos. = months.

Results

Analytic Approach

For descriptive purposes, we examined the mean scores of the major study variables at 3 weeks (T1), 3 months (T2), and 18 months (T3) after the death. The results of these analyses show the time course of mothers' psychosocial adjustment. We also examined the intercorrelations between the major study variables at T1 to see the cross-sectional associations between the variables of interest. The prospective associations between the variables were evaluated using regression analyses.

We used moderated regression analyses (Evans & Lepore, in press) to test the central hypotheses regarding the interactive effects of social constraints and intrusive thoughts on amount of talking and depressive symptoms over time. Specifically, we were interested in examining (a) whether mothers having intrusive thoughts were more inhibited (less likely to talk about the death) if they had high rather than low levels of social constraints, and (b) whether intrusive thoughts were more likely to be associated with increases in depressive symptoms among mothers who felt constrained than among mothers who felt relatively unconstrained.

All regression analyses were prospective (T1 to T2 and T1 to T3) and controlled for initial (T1) depressive symptoms. The predictors included intrusive thoughts, social constraints, and the Intrusive Thoughts × Social Constraints crossproduct. Intrusive thoughts and constraint scores were centered around zero before calculating the cross-product term to reduce multicollinearity between the independent and interaction terms (Aiken & West, 1991). The T1 depressive symptom scores were entered on the first step of the respective regression analyses. This approach controls for potential spurious associations between the predictor and criterion variables due to shared variance between these variables and initial symptoms. Because the initial symptom scores were entered on the first step in the regression analyses, the dependent variables were residualized scores (i.e., depressive symptoms or amount of talking about the infant that remain after accounting for the influence of initial levels of depressive symptoms). The T1 intrusive thoughts scores were entered on the second step of the regression analyses, followed by T1 social constraints and, lastly, the Intrusive Thoughts × Social Constraints interaction term.[2] Because the interaction analyses are very low-powered statistical tests, the sample size was relatively small by T3, and there appeared to be no systematic biases due to attrition, we analyzed the data using the total number of participants available at each time point.[3]

Descriptive Analyses

As shown in Figure 1, on average, the bereaved mothers exhibited a steady decline in reported desire to talk, amount of talking, intrusive thoughts, and depressive symptoms over time, but no change in level of perceived social constraints. Using multivariate analysis of variance (MANOVA) procedures, we found that the averaged overall multivariate effect of time was statistically significant, $F(8,378) = 17.92$, $p < .001$, as were the averaged univariate tests of time on desire to talk, actual

[2] Four demographic variables—race, age, income, and education level—were not related to depressive symptoms. Therefore, these demographic variables were not entered as covariates in the regression analyses.

[3] At T1, three respondents had missing data on their social constraint scale. However, we had complete data on these respondents at T2 and T3. To preserve these cases in the analyses, we estimated their T1 social constraint scores using regression procedures (see Tabachnick & Fidell, 1983).

Table 1
Pearson's Correlations Between Variables at 3 Weeks After Infant's Death (n = 169)

Time 1 variables	Social constraints	Intrusive thoughts	Desire to talk	Amount of talking	Depressive symptoms
Social constraints	—				
Intrusive thoughts	.31***	—			
Desire to talk	−.12	.23**	—		
Amount of talking	−.39***	.16*	.48***	—	
Depressive symptoms	.30***	.59***	.10	.05	—

* $p < .05$. ** $p < .01$. *** $p < .001$.

amount of talking, intrusive thoughts, and depressive symptoms (all $ps < .001$). It is noteworthy that even though depressive symptoms declined over time, the average level of symptoms at all time points was well above normative levels for this scale. For instance, Derogatis (1983) reported that the mean level of depressive symptoms on this subscale of the SCL-90–R was .36 ($SD = .44$) in a nonpatient community sample, 1.79 ($SD = .94$) in a psychiatric outpatient sample, and 1.74 ($SD = 1.08$) in a psychiatric inpatient sample.

The cross-sectional T1 correlation analyses, shown in Table 1, revealed that social constraints were positively correlated with depressive symptoms and intrusive thoughts but were inversely related to the amount of talking about the infant. Intrusive thoughts were positively correlated with desire to talk, amount of talking, and depressive symptoms. Interestingly, desire to talk was not highly correlated with actual talking, suggesting that there were some constraints on actual amount of talking among those mothers who desired to talk.

Social Constraints, Intrusive Thoughts, and Amount of Talking

The first question we addressed with regression analyses was whether bereaved mothers with intrusive thoughts were inhibited in talking about their loss if they felt social constraints in expressing themselves. If social constraints moderated the relation between intrusive thoughts and amount of talking, the slope of the relation between intrusive thoughts and amount of talking would be different between mothers with different levels of social constraints. The moderated regression analyses revealed that the Intrusive Thoughts × Social Constraints interaction was marginally significant ($b = -.28$, $p < .08$; change in $R^2 = .03$) in the equation predicting amount of talking at T2 and statistically significant ($b = -.30$, $p < .05$; change in $R^2 = .05$) in the equation predicting amount of talking at T3. The interactions were plotted following standard procedures (Aiken & West, 1991). As shown in Figure 2, there was a negative relation between intrusive thoughts at T1 and amount of talking at T2 among mothers who were high in constraints at T1, but a positive relation between intrusive thoughts and amount of talking between mothers who were low in constraints at T1. As shown in Figure 3, there was a crossover interaction between T1 intrusions and T1 constraints predicting amount of talking at T3. The direction of the slopes is the same as those shown in Figure 2. These findings suggest that mothers with intrusive thoughts are more inhibited about discussing their loss when they are high in social constraints than when they are relatively low in constraints. Indeed, intrusive thoughts were positively associated with talking in mothers who were low in social constraints.

Social Constraints, Intrusive Thoughts, and Depressive Symptoms

Next we examined the relation between intrusive thoughts and depressive symptoms in mothers with different levels of social constraints. The first regression analyses used T1 intrusive thoughts and social constraints to predict depressive symptoms in mothers 3 months after their baby's death, controlling for T1 depressive symptoms.[4] There was a significant interaction between social constraints and intrusive thoughts ($b = .18$, $p < .05$; change in $R^2 = .02$), suggesting that the prospective relation between intrusive thoughts and depressive symptoms was moderated by the level of social constraints. As shown in the plot of the interaction (Figure 4), there was a positive relation between intrusive thoughts and depressive symptoms among mothers with high levels of social constraints, but no relation between intrusive thoughts and depressive symptoms among mothers with low levels of social constraints. Thus, mothers who initially had intrusive thoughts about their deceased infant only experienced increases in depressive symptoms several months later if they felt socially constrained. Among mothers who initially judged their social relationships to be unconstrained, intrusive thoughts about the deceased were unrelated to their level of depressive symptoms several months later.

[4] In all regression analyses, the residuals were examined to determine if there were any extreme outliers (i.e., Studentized residuals greater than 3). Extreme cases can have deleterious effects on regression solutions and should be deleted or rescored to control for their undue influence on the results (J. Cohen & Cohen, 1983; Tabachnick & Fidell, 1983). We dealt with extreme outliers by deleting them from the analyses. There were two extreme outliers in the T1–T2 regression analyses and four extreme outliers in the T1–T3 regressions. Following the suggestions of J. Cohen and Cohen (1983), we attempted to identify why these few respondents deviated from the remainder of the sample, but we could find no commonalities between them.

Finally, regression analyses were conducted to examine the interactive effects of T1 intrusive thoughts and social constraints on depressive symptoms in mothers 18 months after their baby's death, controlling for T1 depressive symptoms. Again, there was a significant interaction between social constraints and intrusive thoughts ($b = .17$, $p < .05$; change in $R^2 = .03$), suggesting that the relation between intrusive thoughts and depressive symptoms was moderated by level of social constraints. As shown in the plot of the interaction (Figure 5), there was a positive relation between intrusive thoughts and depressive symptoms among mothers with high levels of social constraints. This slope is very similar to the one observed in Figure 4 for this group of mothers at 3 months after the death. However, the crossover interaction in Figure 5 further reveals that among mothers with low levels of social constraints, there was a negative relation between T1 intrusive thoughts and depressive symptoms at T3. This latter finding suggests that there may have been some long-term benefits of having intrusive thoughts among mothers with low social constraints.

Fathers' Responses to the Loss

As noted earlier, a small sample of bereaved fathers were interviewed in this study. As shown in Figure 6, on average, the bereaved fathers exhibited a steady decline in reported desire to talk, amount of talking, intrusive thoughts, and depressive symptoms over time, but no change in level of perceived social constraints. Using MANOVA procedures, we found that the averaged overall multivariate effect of time was statistically significant, $F(10, 88) = 4.65$, $p < .001$, as were the averaged univariate tests of time on desire to talk, actual amount of talking, intrusive thoughts, and depressive symptoms (all $ps < .01$). These results are very similar to those of the mothers (see Figure 1). One notable difference was the extent to which mothers and fathers desired to talk about their child's death. At T1, 5% of mothers and 32% of fathers reported no desire to talk about their infant's death.

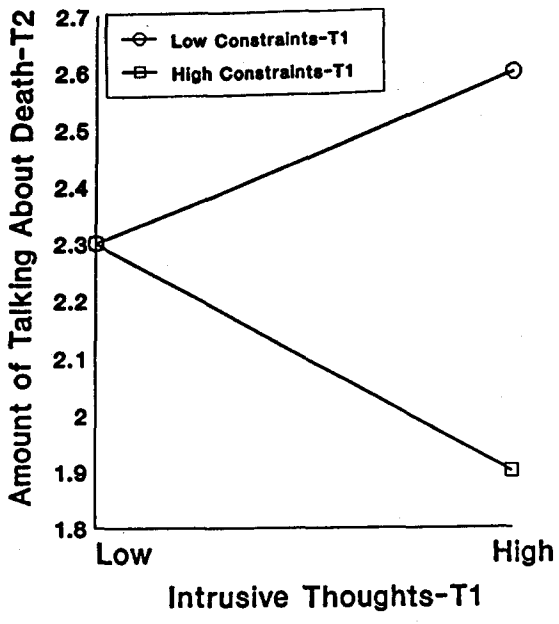

Figure 2. Plot of the relation (slope) between intrusive thoughts about the dead infant at T1 and amount of talking about the death at T2 in mothers with high versus low levels of social constraints at T1. "High" = +1 SD, "low" = −1 SD; T1 = 3 weeks after the loss, T2 = 3 months after the loss.

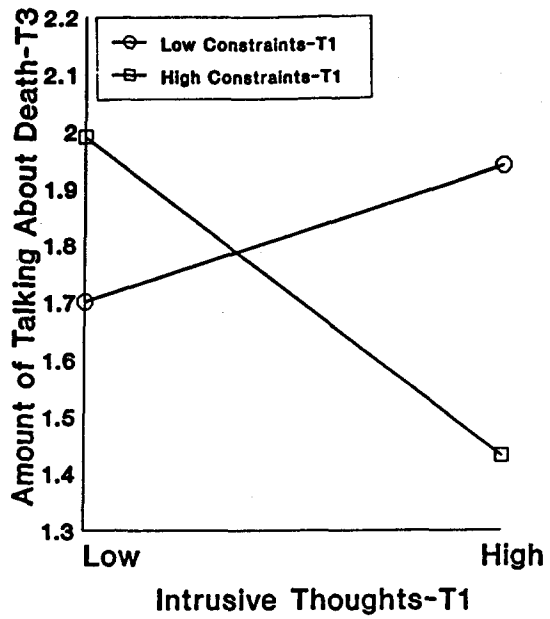

Figure 3. Plot of the relation (slope) between intrusive thoughts about the dead infant at T1 and amount of talking about the death at T3 in mothers with high versus low levels of social constraints at T1. "High" = +1 SD, "low" = −1 SD; T1 = 3 weeks after the loss, T3 = 18 months after the loss.

Discussion

Mothers' depressive symptoms, intrusive thoughts, desire to talk, and actual amount of talking peaked several weeks after their infants' death, then declined steadily and significantly in the subsequent months. In contrast, the mean level of social constraints in the sample was stable over time. In prospective regression analyses with statistical controls for T1 depressive symptoms, we found that the quality of mothers' social relationships in the initial weeks following their loss had important implications for their subsequent level of talking about the death and their psychological adjustment. Specifically, having intrusive thoughts about the infant in the first few weeks after the death was positively associated with talking about the event 3 months and 18 months later in mothers with relatively unconstrained social relationships, but was negatively associated with talking about the death in mothers with constrained social relationships. More significantly, having intrusive thoughts about the infant several weeks after his or her death was associated with increased depressive symptoms at 3 months and 18 months later among mothers with high levels of social constraints. However, among mothers with unconstrained social relationships, having intrusive thoughts several weeks after the death was unrelated to depressive symptoms 3 months later and was negatively related to depressive symptoms 18 months later.

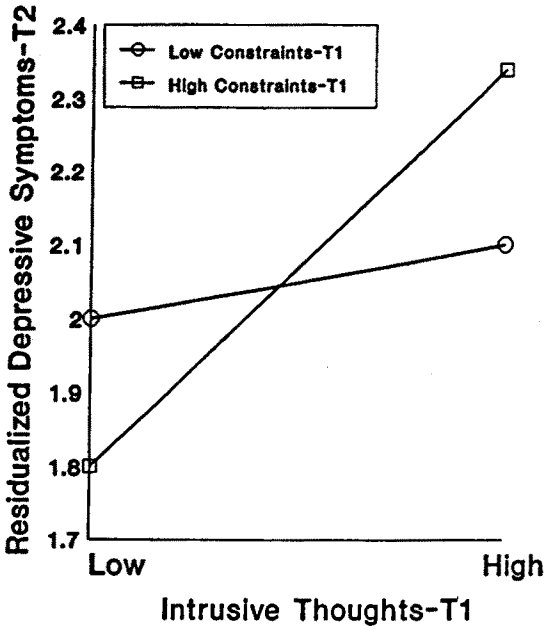

Figure 4. Plot of the relation (slope) between intrusive thoughts about the dead infant at T1 and increases in depressive symptoms at T2 in mothers with high versus low levels of social constraints at T1. "High" = +1 SD, "low" = −1 SD; T1 = 3 weeks after the loss, T2 = 3 months after the loss.

One explanation of these findings is that social constraints inhibit mothers from talking about the trauma which, in turn, interferes with their ability to process the loss (e.g., assimilate, understand, or accept the loss) and emotionally adapt to it. From this perspective, intrusive thoughts represent unresolved traumas—the residue of people's unsuccessful attempts to reassemble their shattered world views (Janoff-Bulman, 1992; Parkes, 1971). Mothers who were inhibited in talking about the death in the face of social constraints might not have had opportunities to find meaning in their child's death or to otherwise learn to assimilate and emotionally resolve it. The present results clearly show that mothers who had intrusive thoughts tended to talk less about the trauma when they had social constraints and more about the trauma when they did not have social constraints. Although the exact implications of this behavioral inhibition for cognitive processing of the loss were not tested in this data set, our speculations that inhibition prevents assimilation of the loss is consistent with previous work. For instance, in her review of the benefits of conversation following traumatic events, Clark (1993) found that discussing traumatic experiences with receptive others appears to help people to understand the implications of the experience, gain control over their emotions, and learn how the experience can potentially fit into the larger scheme of their life. In a study by Silver and colleagues (1983), adult survivors of childhood incest who had no one in whom to confide were unable to find meaning in their experience.

A particularly noteworthy finding in our data was the negative relation between intrusive thoughts at 3 weeks and depressive symptoms at 18 months after the infants' death in mothers with relatively unconstrained social relationships. This group of mothers also was inclined to talk about their traumatic experience 3 months and 18 months after the death. These findings suggest that the underlying mental processes that are responsible for intrusive thoughts may be beneficial to individuals' mental health in the long run when met by a supportive social environment. As suggested above, intrusive thoughts may reflect incomplete cognitive and emotional processing of traumatic events. Among people who have unconstrained relationships, cognitive and emotional processing of traumas may be quicker and more effective than among people with constrained social relationships.

The apparent synergistic effects of intrusive thoughts and constraints on depressive symptoms also could have been influenced by suppression. Mothers whose trauma-related thoughts and feelings were not validated by others might have deemed their thoughts to be inappropriate or abnormal (Tait & Silver, 1989). In such a situation, the mothers might have felt the best course was to suppress and avoid the thoughts rather than to confront or discuss them with others. Suppression, like emotional inhibition, is an avoidant coping style. Indeed, the inhibition reported by mothers who had social constraints could be just one behavioral manifestation of more general suppression processes. The problem with avoidant coping strategies is that they can potentially prevent individuals from assimilating traumatic events. In addition, avoidant coping processes, such as thought suppression, are often unsuccessful (e.g., Wegner, 1994). We are currently exploring the influence of social constraints on thought suppression and other forms of avoidant coping in two new studies (Lepore 1995a, 1995b), which should provide additional evidence on this theoretical model.

Finally, another possible contributing factor to the failed pro-

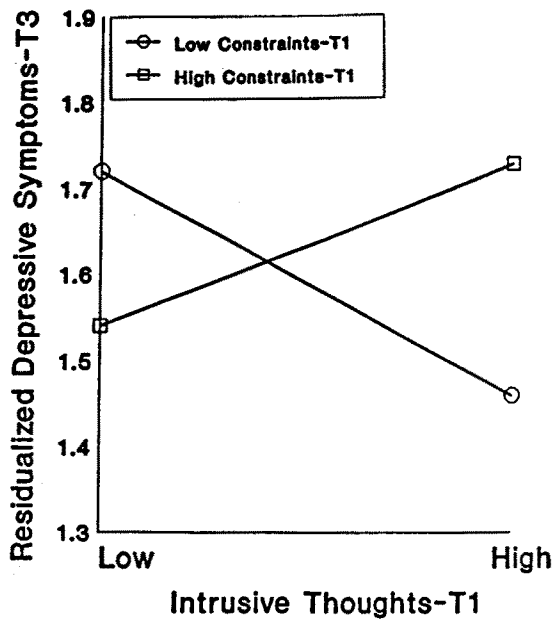

Figure 5. Plot of the relation (slope) between intrusive thoughts about the dead infant at T1 and increases in depressive symptoms at T3 in mothers with high versus low levels of social constraints at T1. "High" = +1 SD, "low" = −1 SD; T1 = 3 weeks after the loss, T3 = 18 months after the loss.

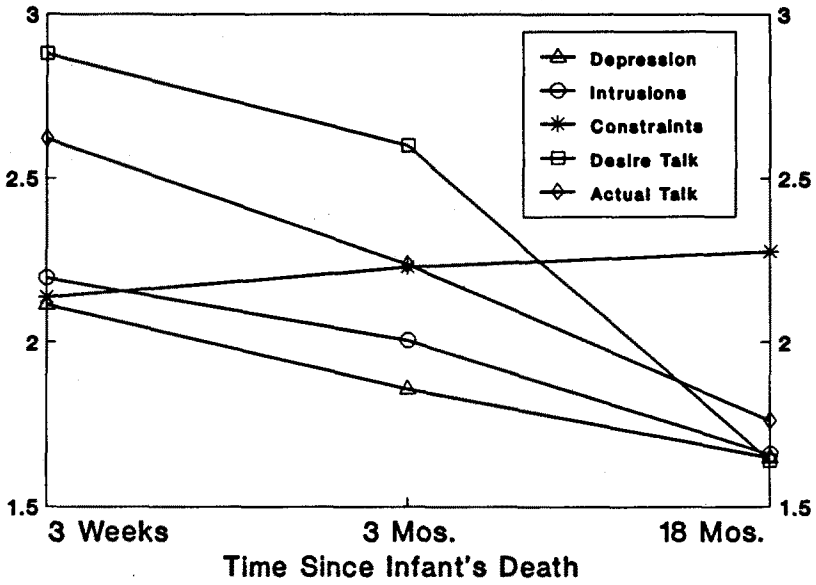

Figure 6. Mean depressive symptoms, intrusive thoughts, desire to talk, amount of talking, and social constraints in fathers at 3 weeks (T1), 3 months (T2), and 18 months (T3) after the death of their infants (n = 25). Mos. = months.

cessing in mothers is the possible arousal caused by social constraints. When mothers who wanted to discuss their traumatic experience found that others did not want to hear about it or responded negatively, they might have become frustrated, angry, and disappointed. Thus, social constraints could be another source of stress. The stress associated with social constraints might increase arousal and interfere with processing (cf. Rachman, 1980). In addition, the potential stress associated with social constraints might distract individuals from processing traumatic experiences or interfere with the processing by using up psychic resources necessary for processing the traumatic experience (see Lepore & Evans, 1996).

Caveats

Our inferences about the effects of social constraints on the relation between intrusive thoughts and depressive symptoms are limited by the correlational nature of our data. Although our data are correlational, our results have some strengths based on the prospective analyses used. The replication of interactive effects of intrusive thoughts and social constraints at 3 months and 18 months after the death is encouraging. In addition, the statistical control for T1 depressive symptoms in the regression analyses helps to clarify the direction of the associations in our model. The control for T1 depressive symptoms in the prospective analyses also, by proxy, controls for the influence of various personality variables that are highly correlated with depressive symptoms.

Finally, our data are limited to mothers and bereavement trauma. Whether our results will be replicated in other trauma populations remains to be tested, as does the generalizability of these results to men. Our small amount of data on fathers suggests a pattern of psychosocial adjustment that is similar to that of mothers. However, there was a notable difference in the degree to which fathers desired to talk about the loss of their infants. Many more fathers than mothers reported having no desire to talk about the experience shortly after the death. Fathers' levels of intrusive thoughts and psychological distress immediately following the loss were fairly comparable with mothers', so it appears that they would have just as much desire to talk as the mothers if our social-cognitive processing model is correct. It is possible that men in this society are socialized to inhibit their desires to talk about negative emotional experiences to a greater extent than are women. To the degree that men have internalized societal proscriptions against discussing negative emotional experiences, they might feel inhibited independent of the level of direct constraints they experience from their social network. Alternatively, men who did not want to talk might have other methods of processing their traumatic experiences.

Conclusions and Future Directions

SIDS mothers who had constrained social relationships in the initial weeks following the loss of their infant were less likely to talk about the infant's death and more likely to be distressed by intrusive thoughts about it than their counterparts who had more adequate social relationships. These findings suggest that the quality of individuals' social relationships following traumatic events has important implications for processing and adjusting to traumatic experiences. Specifically, it appears that social constraints can inhibit people from discussing their traumatic experiences and increase the positive association between intrusive thoughts and depressive symptoms. In addition, it appears that unconstrained social relationships might facilitate the processing of traumatic events and emotional recovery.

One important implication of our study for researchers interested in examining the role of talking in psychological adjustment to trauma is that simply assessing the degree to which

people talk about traumas, without simultaneously considering the response of the social network to such talking or the individuals' level of cognitive processing, gives an incomplete picture of the underlying processes through which talking about traumatic events might influence adjustment. The present analyses suggest that negative social responses, or social constraints, increased mothers' inhibitions about talking when they were actively processing the loss. We maintain that the inhibition, or feeling among mothers that they could not talk when they wanted to, partly accounts for the distress they exhibited long after the death of their child. However, simply measuring the amount of talking reported over time would not be a good measure of inhibition. Over time (i.e., at 3 or 18 months postloss), how much mothers talked could be a function of their desire to talk, the receptiveness of the social network, or the relative success of their cognitive processing of the loss and their degree of emotional recovery from it. Thus, some bereaved parents may not talk because they have already resolved the event; others may not talk because they do not have the available social outlets to do so.

The present results suggest several directions for future research. In future work, we hope to test our theoretical ideas in experiments that give high-risk individuals (e.g., people with intrusive thoughts and social constraints following a trauma) an opportunity to express their trauma-related thoughts and concerns to a receptive and supportive audience and compare their emotional adjustment with a control group of at-risk individuals who have no opportunity to express themselves. Of course, we also hope to replicate these findings in more diverse samples (e.g., men and women) who are facing various types of stressors to test the generalizability of our findings. It is also important to determine with experimental manipulations whether talking about traumatic events is necessary to reduce psychological distress among people who are actively attempting to integrate traumatic experiences. It is possible that other methods of expression, such as writing (e.g., Pennebaker, 1993), would also facilitate processing and adjustment. Furthermore, future research should examine whether simply perceiving that one has the opportunity to talk is sufficient to reduce distress following traumas (cf. Silver & Wortman, 1980). Finally, future research is needed to determine all of the factors that contribute to the negative effects of social constraints on cognitive processing and adjustment. We believe that a particularly fruitful area for future research is on the influence of social constraints on avoidant coping processes, such as thought suppression and behavioral inhibition.

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(*Appendixes follow on the next page*)

Appendix A

Intrusive Thoughts in Past Week

1. Did you ever find you couldn't get memories, thoughts, and mental pictures of your baby out of your mind even though you wanted to?
2. Have unpleasant memories, thoughts, or mental pictures of your baby ever come into your mind?
3. How often did memories, thoughts, and mental pictures that came into your mind about your baby make you feel upset or troubled?
4. Have you ever tried to block out unpleasant thoughts and memories of your baby?
5. Did you ever find that you had trouble doing other things because memories, thoughts, and mental pictures of your baby kept coming into your mind?
6. How often did memories, thoughts, and mental pictures that came into your mind about your baby make you feel frustrated and angry?

Appendix B

Social Constraints in Past Week

1. How often did you feel as though you had to keep your feelings about your baby's death to yourself because they made (other people/important other) uncomfortable?
2. How often did you feel that you could discuss your feelings about your baby's death with (other people/important other) when you wanted to? (reverse coded)
3. When you talked about the baby or (his/her) death, how often did (other people/important other) give you the idea (they/he/she) didn't want to hear about it?
4. How often did you feel (other people/important other) let you down by not showing you as much love and concern as you would have liked?
5. How often have (other people/important other) really got on your nerves?

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