The Undoing of Traumatic Life Events

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Counterfactuals generated by victims of traumatic events were examined to elucidate their significance for the coping process. In Study 1, respondents were interviewed 4-7 years after the loss of their spouse or child in a motor vehicle accident. In Study 2, respondents were interviewed at 3 weeks and 18 months following the death of their child from Sudden Infant Death Syndrome. Across both studies, (a) counterfactuals were commonly reported; (b) the focus of counterfactuals was typically on one’s own (in)actions, rather than on the behavior of others; (c) the more frequently respondents were undoing the event, the more distress they reported; and (d) this relation held after controlling for more general ruminations. These field studies demonstrate that even in situations that lack the highly mutable circumstances described in scenario research, people coping with traumatic events appear unhindered in their ability to generate counterfactuals. Theoretical implications, with an emphasis on field studies of undoing, are discussed.

More than three decades ago, Heider (1958) observed that a person who narrowly misses obtaining a desired outcome, even though it is randomly caused, often becomes preoccupied with the wished-for reality and frustrated by its denial. Heider suggested that the closer one comes to attaining a desired outcome, the easier it is to imagine its achievement, and thus the more apparent is the failure to attain it. For example, Heider predicted that a person who misses winning a lottery by one digit would be more preoccupied with the failure to win, and hence would feel greater frustration, than the person whose ticket was a considerable distance from the winning number. Subsequent research has supported this prediction (Kahneman & Tversky, 1982; Wells, Taylor, & Turtle, 1987).

Kahneman and Tversky (1982) demonstrated that when people are told of undesirable events that have befallen others, they tend to simulate mentally the events leading up to the outcome, desiring to “undo” events that appear to play a causal role in producing the outcome. According to these authors (see also Kahneman & Miller, 1986; Miller & Turnbull, 1990; Miller, Turnbull, & McFarland, 1990), people often compare the reality of the event with hypothetical alternatives by thinking, “If only the person had (or had not) done this, the event would not have happened.” Thus, undoing thoughts, or

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counterfactuals, are concerned with how a negative outcome could have been avoided.

This research suggests that the extent to which an outcome will be undone depends on the perceived mutability of the antecedent events and circumstances. That is, if incidents in the sequence of events leading up to the outcome are perceived to be immutable, or unchangeable, then research indicates that such events will not be targets for undoing (Kahneman & Miller, 1986; Miller & Turnbull, 1990; Wells et al., 1987). In effect, one simply accepts the reality of the occurrence. However, if an incident in the sequence is perceived to be highly mutable (i.e., it can easily be imagined otherwise), then that incident is likely to be shifted to its alternative in a mental simulation, thereby undoing the event. Given that the undesirable outcome has in fact occurred, this process of mental simulation is thought to amplify negative affect over "what might not have been." This suggests that events that are easier to undo are more distressing because they are likely to leave one thinking that the event need not have happened.

According to laboratory research on counterfactual thinking, two factors that affect the mutability of an outcome are (a) the exceptionality (vs. normality) of the antecedents and (b) whether the outcome was a result of someone's actions (vs. a failure to act). It has been demonstrated that outcomes that follow exceptional (and thus "abnormal") sequences are more likely to be imagined otherwise than outcomes of routine sequences (Kahneman & Miller, 1986; Kahneman & Tversky, 1982; Miller & McFarland, 1986; Wells et al., 1987). In addition, research has shown that it is easier to imagine the target avoiding the occurrence of a negative event by not acting (i.e., undoing a committed act) than to imagine the target acting when in reality no action was taken (i.e., undoing an omission; e.g., Gleicher et al., 1990; Landman, 1987; Miller et al., 1990; but see Gilovich & Medvec, 1994).

Virtually all of the evidence collected in support of these claims has been laboratory based; all but one study (Markman, Gavanski, Sherman, & McMullen, 1993) have employed role-playing subjects responding to hypothetical scenarios. In these studies, subjects merely imagine how the "target" victim might think or feel; they are unlikely to experience the distress and specific cognitions that such events typically evoke in individuals who actually encounter them. As the ultimate goal for most counterfactual researchers is to understand what the undoing process is like in the real world (e.g., Miller & Turnbull, 1990), it seems important to examine these issues with people who have actually experienced significant life events. It is possible that actual victims' responses differ significantly from those of role-playing subjects. Whereas role-playing subjects clearly assign significance to the degree of mutability (e.g., the extent to which an antecedent was unusual), those who have experienced traumatic events, motivated by the significance of their situation, might be relatively less influenced by subtle differences in mutability. Instead, they may be relatively more influenced by whether an antecedent event was changeable, from their perspective, in any conceivable way. The present research sought to extend the literature on undoing by considering counterfactuals outside the laboratory, employing actual victims of traumatic life events as respondents. On the basis of the hypothetical scenario research, we expected that counterfactuals would be commonly reported among individuals who experienced such events and, further, that undoing would be associated with greater negative affect and distress. We also sought to investigate whether unusual circumstances or committed acts were more likely to be undone, and more highly related to distress, than usual circumstances or omitted acts.

DISTINGUISHING UNDOING
FROM OTHER COGNITIVE PROCESSES

Ruminations. It is important conceptually to distinguish the notion of undoing from similar constructs in the literature. One related construct is rumination, or mentally reliving the traumatic event. Psychiatrists and clinical and health psychologists have long noted that ruminations are a common response to traumatic experiences, even long after the event (e.g., Freud, 1920/1963; Horowitz, 1976; Janis, 1971; Tait & Silver, 1989; Weiss, 1988). Much of this research has focused on ruminations in general (and their role in the adjustment process), rather than on the specific content of such thoughts. That ruminations have been so broadly construed (e.g., any thoughts or images that are repetitive) might explain why some theorists (e.g., Horowitz, 1976) have suggested that they serve an adaptive function whereas others (e.g., Wortman & Silver, 1987) have failed to support this, suggesting instead that early ruminations are associated with greater long-term distress. We suggest that by examining the content of such thoughts, researchers will be better able to explicate the various roles that the specific ruminations serve.

A case in point is counterfactuals. A review of the literature on ruminate thoughts following traumatic events suggests that a number of examples cited by researchers can be classified as counterfactuals (see, e.g., Tait & Silver, 1989; Weiss, 1988). Although counterfactuals might be characterized as ruminate in nature, we suggest that they are distinct from general ruminations in substance. Specifically, when undoing, individuals are not reviewing the event as it actually occurred (Horowitz, 1976) but, rather, are simulating it as it could (or should)
have happened. Thus, undoing represents a state of continual upward comparison between reality and the better hypothetical alternative in which the negative outcome does not occur (Miller & Turnbull, 1990). It is noteworthy that when people create hypothetical, better scenarios, their actual outcomes appear especially poor by comparison.

Causal attributions. Recent research has drawn attention to the similarities between the processes of undoing and making causal inferences. For example, Wells and Gavanski (1989) argued that much of the evidence cited in support of an undoing process may also be explained by invoking well-accepted attribution models. Lipe (1991), in contrast, argued that a counterfactual model can fully account for evidence used to support various attribution models.

In our view, the two processes are distinct but nevertheless related. The extent to which the two processes can be distinguished depends on the relative mutability of the principal cause identified in the causal exercise. Specifically, to the extent that the principal cause (i.e., the cause identified as being most important in a causal chain) is perceived to be highly mutable, it is likely to be a target for undoing. In such a case, the attribution of causality and the content of the counterfactual may be identical (Kahneman & Varey, 1990; Lipe, 1991). However, the two processes are distinguishable when the principal cause is not perceived to be as mutable as another, less causally significant antecedent. In such cases, one’s attribution of causality may implicate a relatively immutable agent (e.g., the actions of a thief), whereas the counterfactual process may suggest a much more mutable agent (e.g., one’s failure to bolt one’s windows)—one that could have prevented (but did not cause) the event’s occurrence.

Previous research has provided examples where peripheral events were viewed as more mutable than causally more relevant antecedent events. For instance, in Kahneman and Tversky’s (1982) scenario involving Mr. Jones, who was killed in a traffic accident (after taking a different route or leaving work early) by a truck driven by a teenage boy, the authors noted that subjects overwhelmingly focused on Mr. Jones’s behavior in their counterfactuals, despite the fact that the boy was portrayed as culpable. This tendency, with respect to counterfactuals, toward focusing on the target person has been demonstrated in other contexts as well (e.g., Davis, Lehman, Silver, Wortman, & Ellard, 1994; Dunning & Parpal, 1989; Kahneman & Miller, 1986).

THE PRESENT STUDIES

In Study 1, we examined counterfactuals generated by bereaved adults who had lost a spouse or child in a motor vehicle accident. In all cases, neither the bereaved respondent nor the deceased was deemed legally culpable. Indeed, in most cases, the bereaved person was far removed from the scene of the accident. In many of the cases, the cause was clear: The driver of the other car was driving too fast or was drunk. In Study 2, we examined counterfactuals reported by parents who had recently lost an infant to Sudden Infant Death Syndrome (SIDS). Because parents had been told, prior to the study, that their baby had died of SIDS (with no known cause), by implication, they had been vindicated of responsibility for the death. Nevertheless, as the cause of SIDS remains unknown, parents in Study 2 were asked whether they held any theories or hunches about what might have led their baby to die.

Although assignment of respondents to mutability circumstances (e.g., the exceptionality vs. normality of the antecedents) is impossible in studies of this kind, the data that these designs provide are arguably richer in other respects. Not only do such field studies enable investigation of the findings generated from lab research in ecologically valid settings, but they may also be useful in identifying other important forces or parameters that might intensify or attenuate the undoing process or the effects of counterfactual thoughts.

STUDY 1

The bereaved in Study 1 were interviewed 4-7 years after the loss of their spouse or child in a motor vehicle accident. In the interview, the respondent’s current level of distress, as well as past and current emotional and cognitive responses, was assessed. Respondents were asked open- and closed-ended questions regarding ruminations and attempts to undo the event. The latter permitted an assessment of the pervasiveness of past (reported retrospectively) and current undoing, as well as the content of these attempts. Obtaining data on both general ruminations and undoing enabled us to distinguish the unique association of each with distress. We predicted that undoing the sudden, unexpected death of a loved one would be associated with increased distress and that this relation would hold even after controlling for general ruminative thoughts. The open-ended data also allowed us to examine (a) the nature of the events that the bereaved wished to undo, in terms of previously identified mutability factors, and (b) whether such mutability distinctions were related to the level of distress that respondents reported. We wondered whether mutability factors found to influence undoing in the lab would do so in the context of coping with a traumatic life event. Although it would have been ideal to consider these mutability factors for all respondents (whether or not they reported undoing), this was not possible in
Study 1. Even though all respondents were asked to describe the accident, their descriptions were typically general and did not lend themselves to mutability coding. Respondents often described the accident in terms of location, time of day, and a factual account of the event itself (rather than the events leading up to the accident or whether these antecedent events were usual or unusual, etc.). Thus, in Study 1, we are unable to address the question "Are outcomes preceded by exceptional events more likely to be undone?" The questions we can address, however, concern whether it is common outside the laboratory to undo events and whether previously identified mutability factors appear to influence the undoing process.

Method

RESPONDENTS AND PROCEDURE

The respondents in this study were part of a larger investigation that examined the long-term effects of losing a spouse or child in a motor vehicle accident (see Lehman, Ellard, & Wortman, 1986; Lehman, Wortman, & Williams, 1987). Potential respondents were randomly selected from a microfilm file that contained a complete list of all motor vehicle fatalities in Wayne County, Michigan, that had occurred 4-7 years previously.

Records from the state of Michigan were used to screen all accidents and select as respondents only those whose spouse or child was an innocent victim (i.e., had died in a crash for which the driver of his or her motor vehicle was not responsible). Police records for each crash were examined, and with use of the 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 line and collides with an oncoming car). The classifications were based on information from the diagram and narrative descriptions 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.

An attempt was made to locate the next of kin of all randomly selected fatalities. If the deceased was married at the time of the accident, his or her spouse was asked to participate in the study. If the deceased was less than 18 years of age and still residing with parents at the time of the accident, both parents were asked to participate.

A letter describing the study was sent to potential respondents, and they were informed that an interviewer would be contacting them in the near future to set up an appointment. If the respondents agreed to participate, an interview was scheduled in the respondent's home. (See Lehman et al., 1986, 1987, for further details of sampling and interviewing procedures.)

RESPONSE RATES

Fifty-one percent of the randomly selected bereaved agreed to participate. This response rate compares very favorably with other studies involving bereaved respondents (see Stroebe & Stroebe, 1989, for a review). In sum, 40 bereaved spouses and 53 bereaved parents (including 17 cases in which both parents agreed to participate) were interviewed by trained interviewers from the Survey Research Center at the University of Michigan. Whereas all the deceased adults were occupants of a motor vehicle at the time of the accident, some children died as pedestrians (n = 13) or bicyclists (n = 11).

INTERVIEW INSTRUMENT

Psychological distress. The interview instrument included previously validated self-report scales of psychological distress. As the goal of this study was to determine the relation between undoing and general distress as related to the individual's recovery from bereavement, not to determine specific pathological or social impairments, scales that Lehman et al. (1987) found to differentiate the bereaved sample from a matched comparison sample were standardized and combined to yield an overall index of distress.

The scales that were combined to form the distress index were the global severity index of the SCL-90-R (Derogatis, Rickels, & Rock, 1976), which assesses various psychiatric symptoms including depression and anxiety; a shortened 10-item version of the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1975), which focuses on feelings of depression experienced in the past 2 weeks; a 6-item depression/suicide index from the Schedule for Affective Disorders Scale (SADS; Spitzer & Endicott, 1975); a 9-item version of the Bradburn Affects Balance Scale (Bradburn, 1969) to assess respondents' outlook on life; the parental and marital stress subscales of the Pearlin and Schooler (1978) Role Strain Scales; and a 3-item Worry Scale, developed for this project to assess respondents' apprehensiveness about bad things happening to them or their family members in the future. Cronbach's alpha for the index, calculated from the seven subscales listed above, was .87. Higher scores on the composite scale reflect greater distress.

Principal components analysis of the index yielded a single factor with all component loadings greater than .69. These data suggest that the index reflects a general
level of distress (higher positive values denote greater distress). To confirm that undoing was not simply another measure of distress, the principal components analysis was repeated, adding the frequency of undoing question (described below). In this analysis, two clear components emerged (using both a scree test and the eigenvalues > 1 rule); the second factor contained only the undoing item.

Ruminations. Respondents were asked about current ruminations of the deceased with the question “In the past month, have memories, thoughts, or mental pictures of your [child/spouse] come into your mind?” Responses were made on a 5-point scale ranging from no, never (1) to yes, all the time (5).

Respondents were also asked whether they ever re-viewed in their mind the events that led up to the accident (i.e., ruminations of the event) and, if so, what they had thought about in particular. Affirmative responses were later analyzed to determine the frequency with which respondents spontaneously mentioned trying to undo the event and whose actions they reported trying to undo. Two independent raters agreed on 88% of codable responses. All coding discrepancies were resolved by the first two authors. To assess the frequency of current ruminative thoughts of the event, respondents were asked how often they had found themselves reviewing the events that led up to the accident in the past 30 days, on a scale from never (1) to all the time (5).

Undoing. To quantify undoing, respondents were subsequently asked whether they ever found themselves thinking, “If only I had done something differently, my [child/spouse] would still be alive” (yes vs. no). In affirmative cases, respondents were asked to describe their thoughts. These responses were later coded with respect to whether the respondent reported wishing to change a usual or an exceptional behavior. The interrater reliability of two independent judges was 76%.

We also content-analyzed these open-ended data with respect to whether the respondent reported wishing that he or she had acted or had not acted in such a way as to prevent the accident (i.e., omission vs. commission). A review of the data, however, indicated that many respondents reported wishing both that they had and that they had not acted, even in the same sentence. Moreover, many of the counterfactuals that were stated as omissions could be interpreted as commissions, and vice versa. For example, some bereaved parents reported wishing that they had told their child not to play in the front yard (or near the road). This could be interpreted as wishing one had acted (e.g., “I should have said, ‘Don’t play there’”) as easily as it could be interpreted as wishing one had not acted (e.g., “I should not have let her play there”). To overcome this ambiguity, responses were coded literally into four categories: omissions (i.e., wished had acted), commissions (wished had not acted), both, and ambiguous. Thus, the example above was coded as an omission. Using this literal coding scheme, two independent judges agreed in 75% of the cases.

Finally, to assess the frequency of current undoing thoughts, those who reported ever thinking, “If only I had done something differently, my [child/spouse] would still be alive” were asked, on a 5-point scale (1, never, to 5, all the time), how often during the past month they had thought, “If only . . .”

Attributions of blame. Respondents were asked whether they blamed anyone or anything for the accident. If respondents reported that they blamed someone or something for the accident, they were asked to explain who or what they blamed. These responses were later coded into mutually exclusive categories (i.e., other driver, self, society/justice system, and miscellaneous). Two independent raters agreed in 94% of the cases.

Results

Sample demographics. Consistent with U.S. statistics at the time of data collection (Baker, O’Neill, & Karpf, 1984), 85% of the respondents who had lost a spouse in a motor vehicle accident were female. Of the bereaved parents, 63% were mothers and 37% were fathers. The mean age of the bereaved spouses and bereaved parents was 43.5 and 41.0 years, respectively; mean years of education for bereaved spouses and bereaved parents was 12.5 and 12.1, respectively. Of the bereaved spouses, 85% were White and 15% were Black. Of the bereaved parents, 78% were White and 22% were Black. The mean income of bereaved spouses and bereaved parents (in 1982) was $21,000 and $22,000, respectively. With the exception of age of respondent (such that younger respondents tended to undo more frequently), none of the demographic variables described above predicted whether or how frequently a respondent undid the event. As well, none of the results described below changed significantly when age was treated as a covariate. No differences in undoing were noted between those losing a spouse and those losing a child.

Prevalence of undoing. When asked whether they had ever found themselves going over the events leading up to the accident (i.e., ruminative thoughts of the event), 80% responded that they had. Of these respondents, 59% reported doing so during the past month (4-7 years later). When asked what they had thought about when they were going over the events, fully 56% of these 75 respondents spontaneously reported wishfully thinking of undoing the events. For example, one respondent said: “I think about the fact that if I had grounded him that night as I wanted to, it might not have happened.” The
remaining 44% of the 75 respondents reported going over the events without explicitly mentioning thinking about undoing the event. For example, one respondent recalled: "I think about how he] looked at the time. A witness told me how carefully he was driving, and that because of his long, blond hair, the witness thought it was a girl. I wondered whether he realized what was happening and was terrified or frightened."

Of the 42 respondents who spontaneously reported trying to undo in response to the question on ruminations of the event, 55% reported trying to change their own behavior, whereas the remainder reported trying to change the behavior of the deceased. Interestingly, not one person reported trying to undo the other driver's behavior, even though in most cases the other driver was negligent or allegedly under the influence of drugs or alcohol at the time of the accident.

The question "Have you ever found yourself going over the events leading up to the accident?" provides a conservative estimate of the prevalence of undoing because respondents had not been primed to mention undoing thoughts and were free to recall any memory. The frequency with which respondents spontaneously reported undoing, however, attests to the prominence of these thoughts in the minds of the bereaved.

To assess attempts at undoing more directly, respondents were asked, "Since the accident, have you ever found yourself thinking, 'If only I had done something differently, my [child/spouse] would still be alive'?" Fifty-eight percent responded that they had. Of these, 48% reported that 4-7 years later they were still thinking, "If only . . .," at least rarely (M = 2.69, SD = 0.74).

**Undoing and distress.** On the basis of their answers to these closed-ended questions, respondents were divided into three groups: those who reported never trying to undo the experience (n = 39); those who reported thinking, "If only . . .," at some point since their loved one's death but not in the past month (n = 28); and those who still had these thoughts at the time of the interview (n = 26). An analysis of variance on the distress index was significant, F(2, 90) = 3.92, p < .05. Post hoc pairwise contrasts (Tukey) to determine the source of the significant effect indicated that those who were still attempting to undo reported more psychological distress (M = .37) than both those who reported never attempting to undo (M = −.11) and those who reported undoing only in the past (M = −.15).

Frequency of undoing in the past month was related to respondents' current level of distress, r(91) = .29, p < .01. (The corresponding correlation for the group of 54 respondents who had reported undoing since the accident was .37, p < .005.) This significant correlation held after controlling for both the frequency with which respondents reported ruminating about the event in the past month (correlated .40 with undoing and .09 with distress) and ruminating about the deceased in the past month (correlated .26 with undoing and .24 with distress), partial r(89) = .25, p < .05. Conversely, after partialing out the frequency of undoing thoughts, the correlation between ruminations of the deceased and distress was no longer significant, partial r(90) = .17.

**Content of undoing thoughts.** With respect to the content of the 54 "if only . . ." thoughts, responses were coded in terms of whether the respondent wished to change a usual or an exceptional behavior. Sixty-nine percent of these respondents reported undoing an antecedent event that was coded as a usual activity. For example, several respondents reported thinking something like "If I hadn't let him go to the store that day . . ." Another respondent said, "If I had talked him into staying home that day—but there was no reason to. . . . He was very good about not missing work." Twenty-eight percent reported undoing an antecedent event that was coded as an exceptional activity. For instance, one spouse said: "I sometimes think if we hadn't scheduled my daughter's driving test for that day, [my husband] might have survived because he would have been driving the big car." The two groups (those undoing usual vs. exceptional events) did not differ in the frequency with which they were currently undoing (t<1) or in their level of distress (t<1).

With respect to the omission/commission distinction, 41% of those undoing reported wishing that they had done something (i.e., undoing an omission), and 31% reported wishing that they had not acted as they did (i.e., undoing a commission). Seventeen percent reported both omissions and commissions; the remaining 11% of responses were too ambiguous to code. Again, there were no differences in frequency of undoing or distress as a function of whether respondents were undoing omissions or commissions (t<1).

Suspecting that the null effects for the two mutability factors might have been obtained because the two factors canceled each other out, we also compared those who reported neither unusual antecedents nor committed acts in their counterfactuals with those who reported either or both. No significant differences were observed (t<1.1), suggesting that the mutability factors did not affect respondents' level of distress or the extent to which they undid the event.

**Blame for the accident.** The foregoing, representative quotations indicate that the counterfactuals offered by respondents do not imply that they caused the accidents. When asked whom or what they blamed for the accident, 30% of respondents said they blamed no one. Of those who did blame someone or something (n = 65), only 6% blamed themselves, whereas 69% blamed the other
driver, 11% blamed society or the justice system, and the remainder blamed some other source (e.g., God) or declined to identify a source. Although all four respondents who reported blaming themselves had also reported undoing, across the total sample respondents did not differ in terms of distress as a function of who or what (or whether) they blamed ($F < 1$). Finally, the group of respondents who had reported undoing were not differentiated from those who did not undo the event in the types of attributions of blame they made for the accident, $\chi^2(4) = 5.35$, n.s.

**Discussion**

The data from Study 1 suggest that undoing is a common response to the unexpected loss of a spouse or child from a motor vehicle accident. Of the 80% of respondents who reported ruminating about the events leading up to the accident, more than half spontaneously mentioned that they had thought, "If only . . ." When asked directly whether they had ever thought, "If only I had done something differently . . .," 58% of respondents reported that they had. Of these, nearly half reported that they still had such thoughts 4-7 years later.

The data suggest further that recent undoing is associated with greater distress. Those who were still undoing the event were more distressed than those who reported never undoing and those who reported undoing only in the past. The latter group of respondents were no better or worse off than those who had never tried to undo the event.

Study 1 enabled us to distinguish undoing thoughts from more general ruminative thoughts concerning the accident or the deceased (i.e., "going over the events leading up to the accident" and "memories, thoughts, or mental pictures of the deceased"). After controlling for the frequencies of these other ruminative thoughts, the frequency of current undoing remained a significant predictor of distress. General ruminations, however, were not significantly associated with distress after controlling for undoing. This suggests a unique association between undoing and distress, above and beyond that described by general ruminative thoughts (see also Wayment, Silver, Wortman, & Lepore, 1993). Stated differently, the association between undoing and distress does not seem to be due simply to a general tendency to ruminate about the event or the deceased.

With reference to the content of reported counterfactuals, we were unable to garner much evidence that previously identified mutability factors influence the undoing process with real-life events. First, it was difficult to differentiate omissions from commissions. Many responses could be interpreted as either. Indeed, in a number of instances, respondents explicitly stated a single counterfactual in terms of both an omission and a commission. The lack of any difference in undoing frequency or distress between those undoing omissions and commissions further suggests that such a distinction was not critical for respondents.

Second, most of the bereaved reported undoing seemingly typical or usual behaviors and circumstances. Furthermore, those who reported undoing unusual antecedents were not more likely to persist in undoing, nor were they more distressed. Given the base rates in the real world, circumstances leading up to accidents are more likely to be of the usual than the unusual kind. Therefore, we cannot conclude from these data that typical events are more likely to be undone than exceptional events or even as likely. Perhaps the respondents who reported undoing typical circumstances did not have any unusual circumstances to undo. In the absence of highly mutable circumstances, then, they may have settled for less mutable incidents, but incidents nevertheless over which they could have exerted some influence. Corroborating this, when asked to describe what they thought about when they went over the events leading up to the accident, all respondents who mentioned counterfactuals reported trying to undo their own behavior or that of their deceased loved one. None reported trying to remove the other driver from the scene or changing the other driver's behavior, even though people most frequently blamed the other driver for engaging in an unlawful behavior (e.g., driving while intoxicated, speeding). This result is consistent with scenario research suggesting that counterfactuals are biased toward the focal actor's behavior (e.g., Dunning & Parpal, 1989; Kahneman & Miller, 1986; Kahneman & Tversky, 1982).

That we failed to find support for two of the traditional mutability factors (i.e., exceptionality and commissions) affecting the undoing process raises questions about the relative psychological significance of such factors in the context of real-world traumatic events. At a minimum, the data suggest that a number of other factors may influence the undoing process. For example, given an affectively charged event such as the unexpected death of a loved one, people seem motivated (perhaps owing to the distress they are experiencing or the significance of the loss) to search for any behavior that they could imagine performing differently, even highly "normal" or "routine" behaviors. This implies that undoing may be, at least partly, a distress-driven cognitive process. That is, the more distressed someone is, the more likely the person is to undo. If this is the case, then such initial distress may overshadow the role that previously identified mutability factors may play.

One way to pursue this possibility is with a longitudinal field study, which allows an examination of the undoing process over time. The distress-driven interpretation would gain plausibility if Time 1 distress predicts...
Time 2 undoing, controlling for Time 1 undoing and mutability factors. That is, those who are undoing most frequently at Time 2, controlling for the frequency of undoing at Time 1 and the presence or absence of highly mutable antecedent circumstances, should be those who were most distressed at Time 1.

Another reason for the lack of a relation between previously identified mutability factors and distress in samples of real-life victims might stem from the fact that reported distress is due to a variety of thoughts, feelings, and life experiences unrelated to counterfactuals. Given the complexity of the coping process, and the strong individual difference factors at play, it may be more useful to examine specific affective consequences rather than general distress. Weiner’s attribution model of emotion (1986; Weiner, Graham, & Chandler, 1982) is instructive in this regard. Weiner et al. (1982) have shown that particular attributions of causality have specific affective consequences. For example, we feel anger if we perceive that others have caused us misfortune (through their controllable actions) or guilt if our controllable actions cause misfortune to befall others (Weiner et al., 1982).

Although Weiner’s theory is couched within an attribution framework, it can be applied to counterfactuals. Indeed, past counterfactual research suggests that people may feel guilty even when their own actions are not causally implicated in another’s misfortune (see Davis et al., 1994, for a more detailed discussion). That is, if one’s own actions (or inactions) are perceived to be sufficient to undo the outcome, even if such actions did not play a causal role, one is likely to feel regret (e.g., Landman, 1987) and perhaps, to some degree, a sense of guilt and responsibility (Abbey, 1987; Wells & Gavanski, 1989). That so little self-blame was reported by respondents in Study 1 may be owing to the specific methodology employed: Respondents were asked merely who or what they blamed, they were not given the opportunity to assign degrees of blame to different sources (e.g., self, other person, God).

An additional issue worth pursuing with longitudinal field data concerns the stability of counterfactuals over time. Do people focus and then dwell on a single counterfactual, or do they shift their counterfactual focus from one antecedent to another? It seems reasonable to expect that outcomes with highly mutable antecedents, because they are so salient, may remain stable over time. In contrast, if a single highly mutable and salient counterfactual is not available (as we have argued is often the case in the real world), one might expect that counterfactuals would be less stable over time.

**STUDY 2**

In an effort to test these hypotheses, we examined longitudinal data collected from parents who had lost a child to Sudden Infant Death Syndrome (SIDS), interviewed approximately 3 weeks and 18 months after their baby’s death. SIDS is identified as the official cause of death when a postmortem examination rules out all other potential causes (Bergman, Beckwith, & Ray, 1970). As such, SIDS has no known cause. As in the prior study, death of one’s infant from SIDS is sudden, unexpected, and unpredictable. As well, parents were implicated of blame and responsibility by a public health nurse who informed them that their infant had died of SIDS (prior to our interviews). For these reasons, there was no obvious causal event for parents to undo and no known objective reason to self-blame.

**Method**

**RESPONDENTS AND PROCEDURE**

Respondents were parents from Cook County, Illinois, and Wayne County, Michigan, who had lost an infant to SIDS. These counties were selected because of their high incidence of births and, subsequently, their high incidence of SIDS deaths. All mothers who had lost an infant to SIDS between January 1983 and December 1984 were sent a letter 7 days after the infant’s death describing the study and inviting their participation. Mothers were subsequently contacted by telephone (or by a home visit if parents had no telephone), and if they agreed to participate, an interview was scheduled. If a mother agreed to be interviewed and the baby’s biological father was living with the mother at the time of the death, the father was also invited to participate. Further recruitment procedures have been described in detail elsewhere (Downey, Silver, & Wortman, 1990) and so will not be repeated here.

The first interview was scheduled 15-30 days after the baby’s death. The final follow-up interview occurred at approximately 18 months postloss. Mothers and fathers were interviewed separately by different interviewers, and whenever possible, the parent was assigned the same interviewer for the duration of the study.

**RESPONSE RATES AND ATTRITION**

Contact was attempted with 281 mothers who met the following eligibility requirements: (a) The death was classified as SIDS on the basis of an autopsy, (b) the mother was English speaking and at least 15 years of age, and (c) a visiting public health nurse had informed the mother prior to our contact that the infant had died of SIDS. Of the 281 mothers, 69 could not be located by the interviewers or could not be scheduled for the first interview during the eligibility period (15-30 days postloss). Only 40 mothers (18.9%) who were located refused to participate, leaving a sample of 172 mothers who participated in the first interview. Of the 172 mothers, 85 were currently living with the infant’s biological fa-
ther. Of these 85 fathers, 56 (65.9%) also agreed to participate.

At 18 months postloss, 124 of these parents were reinterviewed (54.4% of those participating at Time 1). Of those not participating at 18 months postloss, 38 refused, 63 could not be located or scheduled within the eligibility period, and 2 infant deaths (involving 3 parents) were reclassified as non-SIDS.

**INTERVIEW INSTRUMENT**

The interview covered several aspects of coping with the loss of one’s infant and lasted approximately 2 hr. Like the motor vehicle accident interview instrument, the SIDS instrument was a combination of previously validated self-report scales and open- and closed-ended questions.

**Psychological distress.** General distress was assessed by a 32-item version of the SCL-90-R (Derogatis et al., 1976). The items retained from the SCL-90-R included the depression and somatization subscales, as well as the 7 additional items assessing generalized distress. As a more specific index of affect, the Affects Balance Scale (ABS; Derogatis, 1975) was employed to measure the frequency of various emotional states during the previous week. The ABS is made up of eight five-item subscales assessing four negative (i.e., depression, anxiety, guilt, and anger) and four positive (happiness, vigor, affection, and contentment) affective states. Respondents completed a self-administered version of the ABS, then the SCL, at the beginning of each interview.

**Undoing.** To avoid inducing guilt, undoing was assessed after extensive consultation with SIDS parents and pilot testing. In the first interview, respondents were asked to describe what happened before their baby’s death. These open-ended responses were coded in terms of whether respondents mentioned antecedents that seemed atypical or unusual. One quarter of the responses were coded by two independent judges. The two judges’ ratings were identical for 90% of the event description responses. Given the high interrater reliabilities, the remaining 75% of responses were coded by one of the coders.

Parents were then asked two questions specifically on undoing. The first question was “Even though medical facts tell us that there is nothing parents could have done to avoid their baby’s death, parents sometimes report spending time thinking of ways the death could have been avoided. In the past week, have you ever found yourself thinking of ways the death could have been avoided?” Respondents were then asked, “In the past week, have you ever found yourself thinking, ‘If only something had been different, my baby would still be alive?’” Both questions were answered on 5-point scales ranging from no, never (1) to yes, all the time (5), and they were combined to form an undoing scale.

After the first of the two undoing questions, respondents who reported that they had, at least rarely, thought that the death could have been avoided were asked to describe how it could have. The open-ended responses were later coded in three ways. First, responses were coded in terms of who or what parents thought could have prevented the death. Second, the data were coded in terms of whether the death could have been avoided by undoing a committed (vs. an omitted) action. That is, did parents wish to change something that they or someone else did (a commission) or something that they or someone else did not do (an omission)? Finally, responses were coded according to whether the undoing was based on any unusual antecedent event or circumstance. Again, one quarter of the responses were coded by two independent judges, who agreed in 97%, 91%, and 94% of cases for the three coding questions described above, respectively. Given the high reliabilities, the remaining 75% of responses were coded by a single coder.

**Causal attributions.** Causal attributions were assessed by asking respondents whether they had “a hunch or theory about what caused your baby to die” and, if so, to explain it (see Downey et al., 1990). These open-ended explanations were coded into one of three categories: theories that implicated the self, theories that did not implicate the self, and no theories or hunches.

In addition, parents were asked for their beliefs about who or what was responsible for their baby’s death. On a 5-point scale ranging from not at all (1) to yes, a great deal (5), parents rated the extent to which they felt that (a) they were responsible, (b) someone else was responsible, (c) God was responsible, and (d) the baby’s death was due to chance.

**Ruminations.** The extent to which respondents experienced ruminations about the deceased was assessed with the question “During the past week, have memories, thoughts, or mental pictures of your baby come into your mind?” Response options ranged from no, never (1) to yes, all the time (5).

The interview conducted at 18 months postloss did not ask respondents to describe the events leading up to the death. Otherwise, all questions outlined above were identical at both interviews. The open-ended undoing question at the 18-month interview was additionally coded in terms of whether the respondent was undoing the same antecedent event(s) he or she had described in the initial interview.

**Results**

**Sample demographics.** The final sample (those who completed both interviews; N = 124) was 50% Black, 45%
White, and 5% other ethnicities. The proportion of Blacks in the present sample is higher than that of the counties from which the sample was taken (30% Black) but reflects the higher rate of SIDS deaths among Black infants (National Center for Health Statistics, 1987). Parents’ mean age was 25 years ($SD = 5.33$). Median family income at the time of the interview (1983–1984) was approximately $11,000 (range $1,000 to over $35,000). Mean years of education were 11.6 (range 6 to more than 17 years). Infants’ ages at death ranged from 9 days to 11 months, with a mean age of 81 days ($SD = 49$ days). Fifty percent of the respondents were married, and 15% reported that they were the only adult member of the household. Ninety-eight respondents (79%) were mothers. Except for a Time by Sex interaction, such that mothers reported more undoing than fathers at Time 1, $F(1, 122) = 4.28$, $p < .05$, no differences in the life circumstances described above were related to parents’ level of distress or frequency of undoing. None of the results described below changed when gender was treated as a covariate.

Regarding attempts at undoing, SCL distress, and the specific emotions of the ABS, attrition from 3 weeks to 18 months postloss appeared random. That is, those who participated in the 18-month interview were no more or less likely to report undoing and scored no differently on the SCL and ABS subscales at Time 1 than those who were interviewed only at 3 weeks postloss ($s < 1.60, ps > .10$).

Mutability of events leading up to SIDS. When asked to describe the events leading up to their baby’s death, 67% ($n = 82$) of the respondents described what appeared to be exclusively usual or normal events. In fact, several respondents spontaneously mentioned that nothing unusual occurred prior to the baby’s death. (These mentions, incidentally, might reflect people’s intuitive sense of Kahneman & Miller’s, 1986, norm theory.) The remaining one third of respondents ($n = 41$) described events that were coded as unusual. Of these, 27% reported unusual events involving the baby’s health (e.g., the baby had recently been ill); 15% recounted that the baby was feeling unusually cranky; 15% mentioned that the baby’s sleep was different (e.g., the infant slept through a regular feeding time); 10% noted unusual events occurring in or around the house just before the death (e.g., the infant had recently switched bedrooms); 10% explained that the baby was atypically away from home at the time of, or just prior to, the death; 7% reported that they had a strange premonition that something was wrong with the baby; and the remainder (22%) described idiosyncratic unusual events. (Percentages add to more than 100% because some respondents provided more than one unusual antecedent event in their accounts.)

Content of undoing thoughts. Despite the finding that only one third of respondents reported unusual events leading up to the death, 76% of the respondents reported undoing the baby’s death at 3 weeks postloss at least rarely (operationalized as a mean of 2 or more on the two-item undoing scale). By 18 months, this percentage had dropped but was still at 42%. When those who reported undoing at 3 weeks postloss were asked to recount their thoughts, 90% described their own behaviors, or lack thereof, that might have prevented the loss. Only two respondents (2.4%) mentioned that medical professionals might have done something to prevent the death. The remaining responses were either too vague or too ambiguous to be coded.

In terms of omitted versus committed actions, the responses were similar to those described in Study 1. That is, many responses could be interpreted as wishing one had acted as easily as they could be interpreted as wishing one had not acted. For example, several respondents reported that they could have stayed awake the night the baby died (i.e., undoing an omitted act), whereas others reported wishing that “if only I hadn’t gone to sleep...” (i.e., undoing a committed act). Again, to achieve consistency, responses were coded literally (i.e., “had” vs. “had not”). Using this literal coding rule, 66% of respondents who were undoing the event reported wishing they had acted to prevent the death (an omission), whereas only 12% reported wishing they had not done something (a commission). Sixteen percent of respondents reported both—that is, that they could have done something, as well as not done something, to prevent the death. Six percent of responses were too ambiguous to be coded.

Although 41 parents described unusual events or circumstances prior to the death, only 13 respondents (11 who had described unusual events and 2 who, in fact, had described usual events in the event description) reported undoing something that was coded as an unusual circumstance. For instance, one parent said, “If I just woke the baby up when I got up... , because I usually wake him up and feed [him] before I go to school.” Another parent said, “I was late getting up for work. If I had gotten up earlier, it seemed that it had just happened...”

In contrast, 63 parents reported undoing antecedent events that were coded as normal or typical. For example, one parent reported, “I thought about maybe if I’d stayed awake, or woke up more frequently [to] check on the baby. I keep thinking of different ways... So many things go through your mind.” Another parent said, “I’ve thought about a lot of those things, like if I’d never set him down; if I’d never gone to school that morning; if I had never been going to school, leaving him in the
mornings. I thought about it, checking him every 5 to 10 minutes instead of every 15-20 minutes. I thought about all these things I could have done but I didn’t do.”

Stability of counterfactuals over time. Interestingly, only 28% of respondents who reported counterfactuals at 18 months postloss described undoing the same antecedent that they had been undoing at 3 weeks postloss. Even so, the percentages of those who reported undoing their own (in)actions (88%) versus others’ (in)actions (4%); omissions (65%) versus commissions (20%); and usual (79%) versus unusual (15%) events were essentially the same as those observed at 3 weeks.

Of the 13 respondents who reported a counterfactual involving an unusual antecedent at 3 weeks, 31% reported the same counterfactual at 18 months, 46% had ceased undoing the event, and 23% were undoing different (usual) events. Among the 63 respondents undoing exclusively usual antecedents at Time 1, 16% reported the same counterfactual at 18 months, 52% had ceased undoing by this point, and 32% reported undoing a different event at the later interview. Thus, there is not strong evidence to suggest that counterfactuals involving unusual events are particularly stable over time, $\chi^2(2) = 1.65$, n.s. In general, we observed little stability of counterfactuals across time.

Undoing, mutability, and distress. The frequency with which respondents reported engaging in undoing was significantly correlated with contemporaneous SCL distress scores, such that more undoing was associated with greater distress (see Table 1).

The significant bivariate correlations between frequency of undoing and distress held after controlling for the frequency with which respondents reported ruminating about the deceased (partial $r = .40$ at 3 weeks; partial $r = .26$ at 18 months). Frequency of ruminations about the deceased was significantly related to distress (after controlling for undoing) at Time 1 but not at Time 2.

To test for the moderating role of highly mutable circumstances preceding the death, we examined whether those who reported unusual antecedents in their general descriptions of their baby’s death ($n = 41$) were undoing more frequently or reporting greater SCL distress at 3 weeks or 18 months than those who reported exclusively routine antecedents ($n = 82$). No main effects or interactions involving the antecedent mutability factor were significant, $F_s < 2.1$, $p > .15$.

As in Study 1, we also examined whether parents reporting counterfactuals involving unusual antecedents and/or committed acts reported greater distress or more frequent undoing relative to those parents describing counterfactuals involving only usual antecedents and omitted acts. Although no differences were observed for undoing frequency, those undoing more mutable antecedents were marginally more distressed at Time 1, $t(74) = 1.85$, $p < .10$. As this effect was not replicated at Time 2, we are cautious about interpreting it.

Undoing and specific components of distress. Undoing was associated with each of the four negative affect subscales of the ABS at both interviews (see Table 1). Frequency of undoing was also weakly associated with the positive affect subscales of the ABS, with correlation coefficients ranging from $-0.12$ to $-0.21$.

As expected, the Time 1 correlations suggest that, of the four negative affect subscales, undoing was most
strongly associated with guilt. To evaluate the magnitude of the unique relation between undoing frequency and feelings of guilt, we regressed the residual undoing frequency (controlling ABS subscale scores for anger, depression, and anxiety) on the ABS subscale assessing guilt. Despite the sizable shared variance of the negative affect subscales (as is evident in Table 1), guilt uniquely accounted for 12% of the variance in undoing frequencies at 3 weeks postloss ($\beta = .47, p < .001$; see Table 2), thus accounting for almost half of the explained variance. Interestingly, at 18 months postloss, the pattern had changed such that undoing frequency was no longer uniquely associated with guilt after controlling for levels of anger, depression, and anxiety (see Table 2).

Even though at Time 1 undoing was most directly related to guilt, there was no evidence to suggest that more guilt was experienced when (a) unusual (vs. usual) events preceded the death or (b) either unusual antecedents or committed acts were undone ($k < 1$).

**Undoing at 18 months postloss.** To address the hypothesis that psychological distress increases the likelihood of future undoing (the distress-driven hypothesis), we re-estimated undoing frequency at 18 months on prior undoing frequency and the usual/unusual nature of antecedent events, followed by SCL distress (each assessed at 3 weeks). The results, displayed in Table 3, indicate that on the first step undoing frequency at 3 weeks ($\beta = .38, p < .001$), but not the usual/unusual quality of antecedent events, predicted undoing frequencies at 18 months. Supporting the distress-driven hypothesis, SCL distress, entered on the second step, produced a significant increment in $R^2$ ($\beta = .24, p < .01$).

**Undoing, causality, and responsibility attributions.** In response to the open-ended question concerning theories or hunches that parents had about their baby's death, only 18.5% implied that something involving themselves may have contributed to the death (e.g., a difficult pregnancy, smoking during pregnancy, complications during birth). Twenty-eight percent of respondents said they had no idea or hunch about why their baby died, whereas the remaining respondents offered hunches or theories that did not implicate themselves (e.g., "It was God's will"). No differences in guilt or distress were found between those who reported a self-implicating hunch and those who did not ($k < 1$).

With respect to attributions of responsibility for the death, parents at 3 weeks postloss tended to attribute most responsibility to God ($M = 3.08$) or reported that the death happened by chance ($M = 2.36$). This is not surprising given that the causes of SIDS are unknown. Notwithstanding this tendency, many parents ($n = 52$) assumed some degree of personal responsibility ($M = 1.92$; see Downey et al., 1990). Although the 18.5% of respondents whose hunches were coded as self-implicating also tended to attribute more responsibility to themselves ($M = 2.48$) than those who did not provide a self-implicating hunch, $M = 1.80$, $t(117) = 2.27, p < .05$, it is significant that nearly 60% of those who accepted some personal responsibility for the death did not report a self-implicating hunch. Indeed, excluding those who reported a self-implicating causal theory for their child's death, undoing was still significantly correlated with distress, $r(96) = .39, p < .001$, guilt, $r = .44$, and degree of self-responsibility, $r = .52$. Thus, the observed relations between undoing and guilt and distress do not appear to be due to parents' self-implicating causal attributions.

**Discussion**

Thoughts of undoing were as prevalent in Study 2 as in Study 1. Seventy-six percent of SIDS parents interviewed 3 weeks postloss reported that they had had counterfactual thoughts concerning their baby's death.
TABLE 3: Regression of Undoing Frequency at 18 Months Postloss on Antecedent Mutability, SCL Distress, and Undoing at 3 Weeks Postloss, Study 2

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable Entered</th>
<th>Beta</th>
<th>s²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Usual/unusual antecedents</td>
<td>.07</td>
<td>.005</td>
</tr>
<tr>
<td>1</td>
<td>Undoing frequency (3 weeks)</td>
<td>.38</td>
<td>.142**</td>
</tr>
<tr>
<td>2</td>
<td>SCL distress (3 weeks)</td>
<td>.24</td>
<td>.048*</td>
</tr>
</tbody>
</table>

\( R^2 = .209** \)

\*p < .01; **p < .001

during the previous week. At 18 months postloss, 42% of the parents reported still having thoughts of undoing the death. Further, the more thoughts of undoing parents had, the more symptoms of distress they reported. This relation held at both time points and remained significant after controlling for frequency of ruminations about the deceased.

Of the four negative emotions assessed 3 weeks after the loss, feelings of guilt were most closely allied with undoing. In fact, of the four negative emotions measured by the ABS (depression, anxiety, anger, and guilt), guilt was the only emotion to possess a unique relation with undoing while the others were statistically controlled. Guilt reported by respondents, meanwhile, was not associated with the parents’ hunches or theories that implicated themselves, likely because those hunches or theories that did implicate the bereaved parent tended to be of an uncontrollable nature (e.g., difficult pregnancy; see Weiner et al., 1982). In contrast, counterfactuals that respondents reported overwhelmingly involved events or actions over which they had some control.

By 18 months postloss, however, respondents reported fewer feelings of guilt than they had at 3 weeks (see Table 1). By this time, those parents who were still undoing were not feeling especially guilty for their (in)actions. Thus, by 18 months, many parents appear to have concluded that the antecedents they were undoing, though controllable, were not foreseeable (see Miller & Turnbull, 1990). Although the lack of foreseeability may, with time, alleviate the sense of guilt felt by parents, it is important to note that undoing (regardless of the content of the counterfactual) retained its association with distress over the study period.

One plausible explanation for these findings is that highly distressed people come to undo more frequently, thus perpetuating their distress. Pursuing this distress-driven hypothesis, we found that Time 1 distress significantly predicted later undoing frequency, even after controlling both for how frequently people were undoing at Time 1 and for the mutability of antecedent events.

Corroborating Study 1, we were unable to garner much evidence that the exceptionality of antecedents or the commission (vs. omission) of actions was associated with more undoing, guilt, or general distress. However, this should not imply that parents were undoing immutable events. Among the respondents who reported undoing only usual antecedents, we note that these were events, nevertheless, that parents could easily, in hindsight, imagine performing differently. That is, they were mutating events over which they had some control—behaviors that they conceivably could imagine having done differently. Rarely did parents report wishing that medical professionals had done more; never did they report that God could have intervened to save their baby. The focus of their undoing was nearly always on their own behavior, which supports findings obtained with scenario research (e.g., Kahneman & Tversky, 1982).

Finally, as in Study 1, the omission-commission distinction found in the lab (e.g., Gleicher et al., 1990; Landman, 1987) seemed to be an insignificant psychological nuance to our bereaved respondents. Many of the undoing responses given by parents could be stated either as omissions or as commissions. Interestingly, though, respondents generally chose to report their counterfactuals as omissions rather than the supposedly more mutable commissions suggested by past research (see Miller et al., 1990; but see Gilovich & Medvec, 1994, for similar findings to our own). This discrepancy may be due to understandable differences between real-life phenomena and hypothetical scenarios employed in the lab. In the typical role-play scenario, subjects are presented with two descriptions of a negative outcome, differing only in whether the target person performed or failed to perform a salient action. In the latter (omission) case, it is clear to the subject that one particular action was omitted (e.g., not switching classes; Landman, 1987). In real life, however, people are likely to consider countless more omissions than commissions in their construals of counterfactuals, because whereas committed acts are limited to what people have in fact done, omitted acts are limited only by one’s imagination. This base-rate differential, in and of itself, might account for the preponderance of omissions reported by our respondents. This possibility is analogous to the notion raised in the discussion of Study 1 that in field research, reported counterfactuals may follow from usual events more frequently than from unusual events because the latter, by definition, occur so infrequently.

GENERAL DISCUSSION

The present field studies offer some much-needed ecological validity to the counterfactual literature. They illustrate that undoing is a common response to unexpected traumatic events and, moreover, that mentally trying to undo a loss is associated with heightened distress.
The data suggest further that related constructs described in the stress and coping literature, such as causal attributions and ruminations, cannot account for the observed relations between counterfactual thinking and distress. Without arguing that counterfactual thoughts are more important than these other cognitions, we believe that making these distinctions might help clarify inconsistent results in the literature and further our understanding of how people are affected by traumatic events. For example, these data may shed light on why victims of crime or accidents often appear to blame themselves for their predicament (e.g., Bulman & Wortman, 1977; Burgess & Holmstrom, 1974; Janoff-Bulman & Lang-Gunn, 1988; Wortman, 1976; see Davis et al., 1994, for a more detailed account of this possibility). A victim’s desire to understand how the victimization could have been avoided is more likely to focus on even trivial aspects of his or her own behavior than on the causally more significant, but less mutable, behavior of the perpetrator. To the extent that a salient and plausible counterfactual suggests that one could have prevented the outcome, one may come to believe that one should have been able to prevent it (Miller & Turnbull, 1990). As a consequence, victims may blame themselves (or hold themselves partly responsible), and hence may feel guilty, for not being able to do something to prevent the victimization, however unforeseeable (see Abbey, 1987; Miller & Porter, 1983).

In support of past counterfactual research (e.g., Kahneman & Miller, 1986), we found that the bereaved overwhelmingly tended to focus their undoing on their own (or the deceased’s) behavior, rather than on causally more significant antecedents. This self-focus likely stems from perceiving one’s own actions as more changeable (mutable) than externally caused events or behaviors. In contrast to the laboratory-based research, however, we failed to find evidence suggesting that unusual antecedents or committed acts are more distressing than usual antecedents or omitted acts. The rarity of exceptional circumstances in everyday life suggests that more attention should be paid to the process of undoing when highly mutable antecedents are lacking.

At a more fundamental level, the present results beg the question “Why, given the seemingly negative consequences, do victims of life events undo as much as they do?” One possibility, suggested by some of the present data, is that undoing may be an attempt by people to gain some sense of psychological control over or understanding of an uncontrollable, senseless event (Wortman, 1976). To the extent that most life events are, in some way, controllable and make sense, undoing processes may have generally adaptive functions. That is, people often can come to believe, through counterfactual thoughts, that they can avoid similar events in the future (Markman et al., 1993; Roese, 1994; Taylor & Schneider, 1989). Our data suggest, however, that in cases where future control is not obtainable, such processes might lack adaptive value.

An alternative view, analogous to that put forth about cognitive and emotional processing in the face of positive and negative events more generally (see, e.g., Taylor, 1991), is that people simply tend to process negative life events in great depth. Just as people may be driven to understand why negative events happen (e.g., Wong & Weiner, 1981), they may also be driven to think about how such events might not have happened.

The present findings open several new avenues for future research. The study of counterfactuals, in contrast to causal attributions, offers a new framework in which to study the phenomena of self-blame and guilt. Is the innocent victim’s apparent willingness to accept personal responsibility largely due to the salience of a self-implicating counterfactual (see Davis et al., 1994)? If so, then, as Downey et al. (1990) found, causal attributions may be somewhat less important to those experiencing such events than past research has suggested. Further, whether such undoing should be discouraged (e.g., by exposing the counterfactual fallacy, Miller & Turnbull, 1990) may critically depend on the extent to which the counterfactual (in)action suggests that similar outcomes can be prevented in the future.

The present data also suggest that it may be fruitful to examine individual differences in people’s propensity to undo. Irrespective of mutability factors, some people appear particularly unconcerned with undoing, whereas others seem especially consumed by such thoughts. Preliminary research in our lab suggests that the extent to which people undo hypothetical scenarios relates to their dispositional tendencies to ruminate about prior negative events in general (Davis, Lehman, & Trapnell, 1993; see also Kasimatis & Wells, in press). A recent study by Roese and Olson (1993) similarly suggests that people with self-esteem deficits may be more inclined to focus on their own inadequacies in their counterfactuals than people high in self-esteem.

The present research underscores the need to consider other aspects of the stressful life event in addition to its degree of mutability. The specific events with which the present respondents were coping had unique qualities that differentiate them from many other traumatic events discussed in the stress and coping literature. In the studies reported here, the events were unexpected and unforeseeable, and the respondents were objectively innocent of responsibility. Further, they were acute events with long-term consequences. It remains to be seen, for example, to what extent undoing thoughts are
reported by people coping with more foreseeable traumatic events (e.g., a diagnosis of lung cancer following years of cigarette smoking).

Although on some levels the losses that our two samples experienced were similar, there are also potentially important differences between the two populations. For instance, although both losses were particularly senseless, the actual causes (as well as the agents responsible) may be much more salient and understandable in the case of a motor vehicle accident. With SIDS, far greater causal ambiguity and uncertainty exist. The fear of negligence and the implied (if not overt) accusations of others may lead parents to be more concerned with, and more threatened by, counterfactual possibilities than would be the case if the causes were better understood.

Finally, it seems important to consider whether there are any specific interventions that might facilitate a shift from undoing thoughts to more adaptive cognitions. For example, does contact with other bereaved individuals further along in the coping process alter the tendency to focus on thoughts of undoing? Such contact may promote a recognition of the importance of attempting to accept the immutable nature of the outcome and to focus on behaviors in which one can engage that are constructive or healing, rather than on distressing counterfactual thoughts.

NOTES

1. To our knowledge, only one previous study (Bulman & Wortman, 1977) has described data on the effects of undoing on traumatic life events that subjects have actually experienced (see Miller & Turnbull, 1990, and Wells & Gavanski, 1989, for discussions of this study). Anecdotal evidence from Bulman and Wortman suggests that some of their spinal-cord-injured respondents reported wishing they had done something differently immediately before their accident. The authors noted that these respondents were among the worst copers in their study.

2. Respondents who were widowed and not remarried at the time of the interview were not administered the Pearlin and Schooler Marital Stress subscale. Similarly, respondents who were childless at the time of the interview were not administered the Pearlin and Schooler Parental Stress subscale.

3. Inclusion of data from both parents who lost a child raises the possibility that nonindependence of data may distort the results. To investigate this possibility, we (a) looked for common counterfactuals shared by partners and (b) repeated all analyses reported for mothers only. Interestingly, no counterfactuals were simultaneously reported by both mother and father, and the results did not change when fathers were excluded from the analyses. To maximize statistical power and the external validity of the results, we report the analyses based on both partners.

4. Often, it was not possible to determine definitively whether the reported behavior was usual or unusual. For example, although it is unlikely, "going to the store" may have been an unusual act rather than a usual one. However, the reasonably high interrater reliability suggests that coders were, at a minimum, consistent in distinguishing usual from unusual actions. Note also that 2 of the 54 responses were too ambiguous to code.

5. SIDS parents were also interviewed at a third time point (3 months postloss). As this project is concerned only with early and long-term effects of undoing, we have not included the 3-month data in this report. In addition, one third of the infants who died of SIDS during the study period were assigned to an additional condition in which parents were invited to participate in the research at one time only, at 18 months postloss. As these respondents are not part of the results we report here, they will not be discussed further.

6. Downey et al. (1990), using the same data set, suggested that one other question in the interview reflected a causal attribution: "Have you ever thought there must have been something you did or did not do that brought about this event?" This closed-ended question, with its response alternatives of no, never to yes, all the time, cannot be used to distinguish counterfactual thoughts from causal attributions, because an affirmative response can imply either that one could have acted to prevent the death or that one's behavior was instrumental in causing the death. Given this ambiguity, we elected not to use it.

7. As in Study 1, we were concerned about the possibility that our results might be affected by nonindependence of data for the 26 cases where both parents were interviewed. Again, to investigate this possibility, we (a) looked for common counterfactuals shared by partners and (b) repeated all analyses reported for mothers only. As in Study 1, we found that no counterfactuals were simultaneously reported by both mother and father. As well, results did not change when fathers were excluded from the analyses. The fact that so few fathers were included in this study cautions against making statements about gender differences in undoing. Given that mothers tend to have more significant caregiving roles than fathers, it seems plausible that they would generate more instances in which they could have done something different to prevent the loss. Nevertheless, fathers in the study were just as likely to report behaviors that they could have performed (or not performed) that might have prevented the death. Fathers who were not included in the study (e.g., because they were not currently living with the mother) may differ from fathers who were included in their involvement with the infant and hence their likelihood of generating plausible counterfactuals.

8. Blaming another person was rare; only 15% of the sample claimed that another person was at least a little responsible (M = 1.28).

REFERENCES


Miller, D. T., & Turnbull, W. (1990). The counterfactual fallacy: Confusing what might have been with what ought to have been. Social Justice Research, 4, 1-19.


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