

What Might Have Been: Near Miss Experiences and Adjustment to a Terrorist Attack

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Abstract

Near miss experiences—narrowly avoiding a traumatic event—are associated with distress, despite signaling good fortune. For some, near miss experiences call to mind those who, unlike oneself, were directly affected by the event, leading to “survivor guilt” or distress over one’s comparative good fortune. Survivor guilt, in turn, may function as upward counterfactual thinking about others’ negative outcomes, leading to intrusive thoughts and post-traumatic stress. We compared individuals who did or did not report a near miss with respect to the September 11, 2001, terrorist attacks—that is, almost being directly affected—in a national longitudinal study ($N = 1,433$). Near miss experiences predicted higher levels of reexperiencing symptoms and probable post-traumatic stress disorder, as well as maintenance of reexperiencing symptoms over the next 3 years. These associations were partially accounted for by survivor guilt. Near misses may be associated with distress in part because they entail reflection on negative outcomes for others.

Keywords

stress, trauma, meaning, terrorism

Every day, people make thousands of small, forgettable decisions—what to eat, when to take a break, which route to take to work.

But for a handful of people on September 11, 2001, those seemingly inconsequential decisions—stepping out for a smoke, dawdling on the commute to enjoy a beautiful morning, taking a different subway route, even waking up late because of the previous night’s football game on TV—made the difference between living and dying.

(Park, 2011)

Avoiding adversity can be met with a set of complicated thoughts and feelings, particularly when alternative outcomes are plausible (cf. Kahneman & Miller, 1986). Consider a person whose house is spared by a natural disaster such as a wild-fire or landslide while neighbors’ homes are leveled. It is possible that, alongside emotions such as relief and gratitude, this person would be troubled by thoughts of what could have happened—as well as by the stark reality of what did happen to others. The greater the tragedy, the more likely such comparisons are inevitable. Such “near miss” experiences, in which misfortune is averted by an uncomfortably narrow margin, may leave individuals nearly as distressed as people who actually experienced a disaster, though without as obvious an explanation why. Here, we examine longitudinally the understudied phenomenon of near miss experiences and propose and test likely mediators of post-traumatic stress (PTS) they engender

through the lens of responses to the September 11 (9/11) terrorist attacks.

Near Misses and Well-Being

Surprisingly, little methodologically rigorous research has directly examined the phenomenon of near miss potentially traumatic experiences, and these studies have yielded divergent findings about the outcomes of near misses. Some studies have found that near misses are associated with positive feelings of relief, gratitude, or even invulnerability, consistent with the notion that even traumatic experiences can lead to some positive perceptions (cf. Calhoun & Tedeschi, 2014; Linley & Joseph, 2004). For example, Sweeny and Vohs (2012) found that personally experienced near miss experiences predicted feelings of relief. Similarly, Teigen and Jensen (2011) conducted open-ended interviews with tourists who survived the Southeast Asian tsunami while on holiday and reported the myriad thoughts and feelings of those who experienced a near

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miss, finding that these feelings included luck and gratitude. In addition, Dillon, Tinsley, and Cronin (2011) found that information about hurricane near misses made people hypothetically less interested in buying hurricane insurance in hurricane-prone areas.

While it might make sense to think that near miss experiences would lead to positive emotional outcomes, given that they are misses and therefore positive outcomes for individuals who experience them, there is nonetheless evidence that they can be distressing or even traumatic as well. Yule, Udwin, and Murdoch (1990) examined near misses as one lesser type of exposure (“exposure by proxy”) to a traumatic event, finding that a small sample of children who had wanted but were unable to get a place on a cruise ship that sank reported more anxiety and depression than children who had not wanted to go on the cruise in the first place. Wayment, Silver, and Kemeny (1995) examined a sample of HIV-negative gay men who engaged in similar high-risk sexual behaviors that resulted in others’ becoming HIV+ and found that degree of personal exposure to HIV and the illness or death of close others predicted feelings of guilt and other negative emotions (death anxiety, blunted affect). In addition, Teigen and Jensen’s (2011) study of the Southeast Asian tsunami found that those who experienced a near miss not only experienced positive feelings but also negative emotions such as guilt. Finally, Rosen and Cohen (2010) found that children who had a loved one who was *nearly* a victim of the 9/11 attacks (i.e., in the World Trade Center but survived) were at increased risk of developing post-traumatic stress disorder (PTSD).

Near Misses and Survivor Guilt: The Misfortune of Being Fortunate

Why might near misses be negative or even traumatic in some circumstances but not others? We speculate that the difference is that, in the studies that have found negative emotional consequences of near miss experiences, it was highly salient that there were other victims less fortunate than the self. A cruise ship disaster (Yule et al., 1990), the HIV epidemic (Wayment et al., 1995), the Southeast Asian tsunami (Teigen & Jensen, 2011), and the 9/11 attacks (Rosen & Cohen, 2010) were all mass-casualty events in which near misses occurred in the context of many others being less fortunate. By contrast, Sweeny and Vohs (2012) focused on personally experienced near misses during which no other people were present the majority of the time. Similarly, Dillon and colleagues (2011) presented hypothetical information about how a single house fared during a hurricane with no information about the outcomes for other nearby houses.

Why might the presence and salience of less fortunate others be important for the potentially traumatic impact of a near miss? Traumatic events tend to exert some of their emotional impact by way of increased daily hassles (Pillow, Zautra, & Sandler, 1996) or via traumatic or intense sensory experiences that provoke distressing reexperiencing and rumination (Davis, Lehman, Wortman, Silver, & Thompson, 1995; Davis,

Lehman, Silver, Wortman, & Ellard, 1996; Holman & Silver, 1998), thereby contributing to PTS (Brewin & Holmes, 2003). Near miss experiences, because they are about negative events that did not in fact occur, lack these hassles or sensory experiences. However, near miss experiences that were mass-casualty events provide another potential target for distressing rumination: thoughts about those who were not as fortunate as oneself—that is, those who were *directly* affected by the event of one’s near miss. These thoughts might include feelings of guilt at not having done more to help others or simply guilt at being spared—a phenomenon known as “survivor(s) guilt” (Hendin & Haas, 1991; Lifton, 1980; Niederland, 1968; Perloff, Shen, Rigney, & King, 2016; Wayment et al., 1995). Following mass-casualty events, survivor guilt could be a form of distressing rumination that could have implications for mental health, including PTS, among those with near miss experiences. Moreover, the effects of near misses via survivor guilt on mental health may persist over the long term. As Tait and Silver (1989) note, “the continuing salience of an event’s negative implications may be represented by ongoing unfavorable comparisons between aspects of one’s life given the event’s occurrence and life as it might have been had the negative event not occurred” (p. 355). For individuals who experience a near miss that could have proved fatal to themselves or a loved one, every day lived and every milestone experienced is also a potential occasion to experience survivor guilt and ruminate over the fact that others were not so fortunate.

The Present Study

We sought to examine near miss experiences and survivor guilt using a national longitudinal study of a one-time event: the 9/11 attacks. We examined differences between those who reported a near miss experience—reporting *almost* being directly affected by 9/11—and those who did not. In doing so, we wanted to extend the literature on near miss events by showing that near miss events can predict PTS in part by way of survivor guilt and a form of rumination, intrusive reexperiencing symptoms. Specifically, we hypothesized that:

- (1) Near miss experiences would be associated with feelings of survivor guilt.
- (2) Near miss experiences, in part by way of survivor guilt, would predict greater intrusive reexperiencing symptoms.
- (3) Near miss experiences, by way of reexperiencing symptoms, would predict post-traumatic stress.

In testing these predictions, it was important to control for prior well-being, since individual differences might influence reports of survivor guilt, as well as other predictors of well-being following 9/11, including demographics, prior stressful events, and degree of objective exposure to 9/11.

Method

Participants

The study sample ($N = 1,433$ for key analyses), provided by Knowledge Networks Inc. (KN), an online survey research company, was drawn randomly from KN's nationally representative web-enabled research panel. At the time of the study, the KN panel was developed using traditional probability methods for creating national survey samples and recruited using stratified random-digit-dialed telephone sampling. To ensure panel representativeness, KN provided Internet access to households as needed. In return, panelists participated monthly in brief online surveys. Participation in surveys also earned bonus points that could be redeemed for merchandise, and individuals whose households were already web-enabled were compensated with bonus points. For the present study, all respondents were compensated with bonus points per survey. Members could leave the panel at any time, and receipt of Internet access was not contingent upon the completion of any specific survey.

At the time of the study, the distribution of the KN panel and our specific sample closely tracked the distribution of U.S. 2000 Census counts for the population on age, race, Hispanic ethnicity, geographic region, employment status, income, and education (Dennis & Krotki, 2001; for further panel and sample details, see Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002; Silver, Holman, McIntosh, Poulin, Gil-Rivas & Pizarro, 2006).

Design and Timing of Surveys

Wave 1¹ was fielded between November 10, 2001, and December 3, 2001, to 1,643 adults; 1,382 completed it (84% participation rate). All Wave 1 survey participants were eligible to complete the Wave 2 survey, fielded March 19, 2002, to April 11, 2002; 1,141 (83%) completed it. In addition, in order to better account for direct exposure to 9/11, a sample of New York City residents was invited to participate at Wave 2. Of 68 contacted, 60 (88%) participated. All 1,442 Wave 1 and Wave 2 respondents were invited to participate in Wave 3, fielded September 20, 2002, to November 3, 2002; 1,127 (78%) completed it. Wave 3 respondents were eligible to complete any of the subsequent waves: Wave 4: March 13, 2003, to April 6, 2003 ($N = 715$); Wave 5: September 12, 2003, to October 31, 2003 ($N = 659$); and Wave 6: September 12, 2004, to November 2, 2004 ($N = 781$).

Measures

Near miss experiences. The occurrence of a "near miss" experience was assessed via a question, administered at study entry (Waves 1 or 2), asking, "Did you or someone close to you experience a 'near miss' as a result of the September 11th attacks?" Respondents answered "yes" (scored 1) or "no" (scored 0) and if yes were asked to elaborate.

Survivor guilt. Feelings of survivor guilt were assessed at Waves 1 and 2 using the following item: "After experiences such as

the events of September 11th, some people report feeling guilty that they survived when others did not. Have you ever felt this way in the past week?" (1 = *no, never*, 5 = *yes, all the time*).

PTS and reexperiencing symptoms. PTS symptoms were measured at Wave 1 with the Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1997), a widely used scale with good reliability and validity that measures the extent to which participants were bothered by PTS symptoms resulting from the 9/11 attacks. To enable direct comparison to methodology employed in other national investigations of the 9/11 attacks (e.g., Schlenger et al., 2002), the PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) was used for the duration of the study. Both measures assessed the three clusters of PTS symptoms recognized in the then-current DSM-IV-TR (American Psychiatric Association, 2000): reexperiencing, avoidance/numbing, and hyperarousal. Both scales utilized overlapping items and constructs and nearly identical reexperiencing items. To maintain comparability between measures, all items were scored on a 1–5 scale. Mean scores were computed on the reexperiencing cluster, our primary outcome of interest, but total scores and mean scores of the other two clusters (avoidance/numbing and hyperarousal) were also computed at each wave; all had excellent internal consistency at all waves ($\alpha s > .90$).

In addition, we examined rates of *probable PTSD*² as indicated by scores above a cutoff level on each post-traumatic stress measure. For the IES-R, a total score of 33 has been used previously (e.g., Creamer, Bell, & Failla, 2003); using our rescaled IES-R items, this translated to a cutoff of 55. For the PCL, we used the cutoff of 50 (see Blanchard, Jones-Alexander, Buckley, & Forneris, 1996).

9/11-related exposure. At Wave 1, participants reported their 9/11-related experiences and were grouped into one of three exposure levels: *direct exposure* (being in the World Trade Center or Pentagon, seeing or hearing the attacks in person, or having a close relationship with someone directly affected), *live media exposure* (watching the attacks unfold live on television [TV]), and *no live exposure* (learning of the attacks after they had occurred).

Stressful event history. *Lifetime and recent stressful events* were assessed as the total number of 37 negative events (e.g., serious illness or injury, natural disaster) reported by respondents on a checklist developed by our team (e.g., Blum, Silver, & Poulin, 2014; Seery, Holman, & Silver, 2010). We also assessed any events that occurred between waves.

Demographics. KN routinely collected background information on their panelists, including gender, age, ethnicity, educational status, and household income. Missing values for income were imputed by KN using the mean income score for each respondent's census block.

Pre-9/11 mental health. A KN-administered health questionnaire (administered between April 21, 2000, and September 10,

2001) provided information on respondents' self-reported physician-diagnosed depression or anxiety disorders before the attacks. An index of *pre-9/11 psychological diagnoses* was created: 0 (*none*), 1 (*depression or anxiety*), and 2 (*both depression and anxiety*).³

Analytic Strategy

Reexperiencing and survivor guilt were assessed at multiple time points (reexperiencing at Waves 1 through 6, survivor guilt at Waves 1 and 2) and thus were examined using multilevel regression modeling, which allows a dependent variable to be modeled as a function of its mean value and random (error) variation across measurement points (Singer & Willett, 2003). The available *N* provided us with sufficient power to detect all but extremely trivial effect sizes (achieved power for all key analyses > .85).

All analyses were conducted using STATA 14.0 (Stata Corp., College Station, Texas), and multilevel models were built using STATA's *xtreg* module with maximum likelihood estimation. All models were constructed by screening three blocks of variables in separate regressions and retaining significant predictors: demographics (age, gender, dummy-coded ethnicity, education level, income level), lifetime and recent stressful events and pre-9/11 mental health history, and 9/11-related experiences (9/11 exposure and reported near misses).

Results

Sample Demographics

The initial sample was demographically similar to the U.S. population (for a full report on sample characteristics, see Silver et al., 2002) and was 72.0% White, 9.3% African American, 10.7% Hispanic, and 8.0% other ethnicities (Asian American, Native American). Females comprised 50.5% and ages ranged from 18 to 93 (*M* = 49.5). Prior diagnosis of an anxiety disorder or depression was reported by 9.9% of the sample; an additional 4.2% reported both. A small proportion (5.2%) of our sample was directly exposed to the 9/11 attacks, most (60.0%) reported indirect exposure via live TV; one third (34.8%) learned of the attacks afterward.

Near Miss Experiences

Data on 9/11 near miss experiences were provided by 1,433 individuals; 142 (9.9%) of whom reported experiencing a near miss, of which 10% were from residents of New York City. Among these, 127 provided more detail about the experience, and most near misses (92.1%) were reported as close others being spared; the remainder represented personal near misses. Some illustrative examples:

My son-in-law would have been on that flight, but my daughter got sick and he took her to the hospital . . .

My brother in law on the 90th floor where he works called in sick.

My father was late for a meeting in the World Trade Center.

Table 1. Multilevel Regression Model of 9/11-Related Survivor Guilt From 2 to 6 Months Post-9/11.

Variable	<i>b</i> (SE <i>b</i>)
Months	-.01 (.00)**
Age	<.01 (.00)**
Prior mental health diagnoses	.06 (.02)**
9/11 Exposure: live TV	.04 (.02)*
Near miss experiences	.13 (.03)***

Note. *N* = 1,433. TV = television.

Model fit: $\chi^2(5, 2,459) = 47.94, p < .001$.

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

My sister was visiting NYC and flew out on 10th September.

I could have been working in Engine 258 that day but my partner worked the first shift and was almost caught in the collapse of the north tower.

I got a job in the World Trade Center a couple months before, and did not take it.

Multiple logistic regression indicated that, compared to those who did not report a near miss, those who did so were younger (*OR* = .98, *p* = .004) and more highly educated (*OR* = 1.20, *p* = .001). Individuals who reported a near miss had also experienced more lifetime stressful events (*OR* = 1.04, *p* = .001) and were more likely themselves to be directly exposed to the 9/11 attacks (*OR* = 3.64, *p* < .001).

Near Miss Experiences and Survivor Guilt

Adjusting for demographics, prior mental health, experience of prior stressful life events, and 9/11 exposure, reporting a near miss experience, as compared to no near miss experience, was significantly associated with higher levels of survivor guilt across time (*b* = .13, 95% CI [.05, .19], *p* < .001, ϕ = .08; see Table 1). For example, at 2 months (Wave 1), survivor guilt was lower among those who reported no near miss experiences (*M* = 1.11, *SD* = .47) than among those who did report near miss experiences (*M* = 1.31, *SD* = .76).

Near Miss Experiences and Reexperiencing Symptoms

The multilevel regression model indicated that reporting a near miss experience predicted higher 9/11-related reexperiencing symptoms across the next 3 years (*b* = .20, 95% CI [.12, 0.29], *p* < .001, ϕ = .06; see Table 2, first column). For example, at 2 months (Wave 1), reexperiencing was lower among those who reported no near miss experiences (*M* = 1.67, *SD* = .64) than among those who did report near miss experiences (*M* = 1.97, *SD* = .82). The strength of the association between experiencing a near miss and reexperiencing symptoms was not as strong as the association between direct 9/11 exposure and reexperiencing (*b* = 0.35), but substantially larger than that between live 9/11 TV exposure and reexperiencing (*b* = 0.09).

To test for the potential mediating role of survivor guilt in the association between near miss experiences and

Table 2. Multilevel Regression Models of 9/11-Related Reexperiencing Symptoms From 2 to 36 Months Post-9/11.

Variable	<i>b</i> (SE <i>b</i>)	
	Main Effect Model ^a	Model With Survivor Guilt ^b
Time (months since 9/11)	-.01 (.00)***	-.06 (.00)***
Age in years	<.01 (.00)***	<.01 (.00)***
Female gender	.12 (.03)***	.05 (.03)***
Hispanic ethnicity	.11 (.04)**	.08 (.05)
Income	-.02 (.00)***	-.01 (.00)***
Prior mental health diagnoses	.09 (.03)***	.09 (.03)**
Stressful life events	.01 (.00)***	<.01 (.00)
9/11 Exposure: live TV	.09 (.03)**	.09 (.03)**
9/11 Exposure: direct	.35 (.06)***	.38 (.07)***
Near miss experiences	.20 (.04)***	.17 (.05)***
Survivor guilt		.27 (.03)***

Note. *N* = 1,433. Model constrained to estimate effects at only 2 and 6 months post-9/11 due to the timing of survivor guilt assessment. TV = television. Model fit: ^a $\chi^2(10, 5613) = 532.89, p < .001$. ^b $\chi^2(11, 2441) = 544.02, p < .001$. **p* < .05. ***p* < .01. ****p* < .001.

reexperiencing symptoms, survivor guilt was added to the model described above. In the revised model (see Table 2, second column), near miss experiences remained a significant predictor of reexperiencing symptoms ($p < .001$), but the slope for this association was reduced somewhat ($b = .17$). Moreover, survivor guilt had its own unique association with reexperiencing symptoms ($b = .27, p < .001, \phi = .33$). A Sobel test for the indirect effect of near misses on reexperiencing by way of survivor guilt was also significant ($z = 3.90, p < .001$), consistent with mediation of the association between near miss experiences and reexperiencing by survivor guilt.

Near Miss Experiences and PTS

To explore the mental health consequences of near miss experiences, we also examined whether near misses predicted post-traumatic stress in the form of probable PTSD. Across waves, approximately 3.9% of the sample exceeded the cutoff value, meeting criteria for probable PTSD. A multilevel logistic regression revealed that reporting a near miss experience predicted significantly greater odds for probable PTSD ($OR = 2.76, 95\% CI [1.40, 5.47], p = .004$; see Table 3). As with reexperiencing symptoms, this association was not as strong as that for direct 9/11 exposure ($OR = 9.03, p < .001$), but it was stronger than that for live 9/11 TV exposure ($OR = 1.75, p = .04$).

We assumed that the primary contribution of near miss experiences to probable PTSD should derive from distressing ruminations in the form of reexperiencing symptoms, specifically. To test this assumption, we examined the association between near misses and each cluster of post-traumatic stress symptoms, adjusting for the other two clusters in each analysis. These analyses indicated that near miss experiences significantly predicted reexperiencing, even when adjusting for both avoidance/numbing and hyperarousal clusters ($b = .06, 95\% CI [.02, .10], p = .009, \phi = .05$). By contrast, near miss

Table 3. Multilevel Regression Model of 9/11-Related Probable PTSD From 2 to 36 Months Post-9/11.

Variable	Probable PTSD ^a
	OR (SE OR)
Time (months since 9/11)	.90 (.01)***
Female gender	1.97 (.47)**
Hispanic ethnicity	2.11 (.72)*
Income	.87 (.03)***
Prior mental health diagnoses	1.76 (.36)**
Stressful life events	1.04 (.02)*
9/11 Exposure: live TV	1.75 (.46)*
9/11 Exposure: direct	9.03 (4.21)***
Near miss experiences	2.76 (.96)**

Note. *N* = 1,433. OR = odds ratio; PTSD = post-traumatic stress disorder; TV = television; SE = standard error.

Model fit: ^a $\chi^2(9, 5626) = 150.11, p < .001$.

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

experiences did not uniquely predict avoidance/numbing ($b = .02, 95\% CI [-.04, .06], p = .45, \phi < .01$) nor hyperarousal ($b = .04, 95\% CI [-.01, .09], p = .08, \phi < .01$). Together, these analyses indicate that reexperiencing best explains the association between near miss experiences and overall PTS symptoms.

Discussion

In the wake of the 9/11 attacks, individuals who had a “near miss” reported higher levels of reexperiencing symptoms, probable PTSD, and persistence of reexperiencing symptoms over time. The phenomenon of survivor guilt partially accounted for these associations. While near miss experiences—unsurprisingly—did not predict PTS symptoms as strongly as direct exposure to the attacks (for either oneself and/or a close other), the fact that near miss experiences were an independent predictor alongside direct exposure indicates that this result is not simply due to knowing people who were themselves exposed to the attacks. Moreover, we found that near miss experiences were more highly associated with post-traumatic stress symptoms than were other forms of indirect exposure (for a similar finding, see Yule et al., 1990). Together, these results suggest that having narrowly avoided disaster when others are not so fortunate may play a role in shaping responses to traumatic events.

Near Misses and Survivor Guilt

Near miss experiences imply some degree of relief: A near miss is presumably better than being directly affected by a traumatic event. Yet near miss experiences also raise the prospect of thinking about the actual misfortune of others. Given the enormity of the losses on 9/11, individuals who experienced a near miss were unlikely to think merely of their own good luck, whether in the form of their own or their loved ones’ survival; the tragic bad luck that befell the 9/11 victims provides a grim actual counterpoint to the near miss and thus a source of

survivor guilt (cf. Teigen & Jensen, 2011). Survivor guilt may function similarly to certain kinds of counterfactual thinking that can occur and provoke rumination and distress following trauma (Davis et al., 1995; Davis et al., 1996; Epstude & Jonas, 2015; Holman & Silver, 1998; Medvec, Madey, & Gilovich, 1995). Counterfactual thoughts, or thoughts about alternate realities that did not come to pass, are common and have implications for well-being (Byrne, 2016; Roese & Epstude, 2017; Roese & Olson, 2014). In particular, researchers distinguish between *downward* and *upward* counterfactual thoughts. Downward counterfactual thoughts are those focused on how things could have turned out worse than they did and are generally associated with higher levels of well-being, reflecting the comparatively positive nature of one's actual lived experience (Byrne, 2016; Roese & Epstude, 2017; Roese & Olson, 2014). By contrast, upward counterfactual thoughts are those that focus on how things could have turned out better than they did and are typically associated with lower levels of well-being since they suggest comparative dissatisfaction with one's actual experience (Byrne, 2016; Roese & Epstude, 2017; Roese & Olson, 2014). Survivor guilt may thus function as a form of upward counterfactual thinking in that it would have been better if those who perished would have survived. This linkage is worth testing in future research.

The Social Context of Trauma

Our findings suggest a more general need for researchers to attend to the social context in which traumatic events occur. In many significant life events, whether winning the lottery or encountering a disaster, more than one person is often affected. When individuals seek to integrate these experiences into their lives in order to make sense of them, presumably they do so primarily with respect to the self. Nonetheless, they may also witness the outcomes of others, and others' outcomes have diverse implications for well-being that may augment or conflict with the implications of self-focused meanings.

Several factors may increase the importance of others' outcomes for the self. For example, the presence of widespread tragedy, as following 9/11, may outweigh benefits of positive consequences for the self simply by making others' outcomes overwhelmingly salient. In addition, being in a relationship with someone who fared more poorly may remove some of the benefits of self-directed benefits of near misses because that person is integrated into one's own self-concept (e.g., Cialdini, Brown, Lewis, Luce, & Neuberg, 1997). Other factors such as valuing the well-being of others (e.g., Van Lange, 1999) or empathy (e.g., Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007) may enhance concern with others' outcomes following a near miss.

Limitations and Future Directions

This study represents one of the first attempts to identify the implications of near miss experiences resulting from a national disaster and the first to be conducted among a national sample

providing longitudinal data. Despite strengths in the study's design, we recognize some limitations. First, we assessed whether or not individuals reported a "near miss" or "survivor guilt" with single items. However, these were items with strong face validity, and the near miss examples provided by respondents were precisely the kinds of experiences we sought to study. The fact that the survivor guilt item included the phrase "some people report feeling guilty," in order to remove self-presentational concerns, could raise the possibility that reporting survivor guilt actually is an attempt to adhere to norms. However, this pattern would not account for survivor guilt's associations with near miss experiences or with ruminations. Nonetheless, future research should use more robust measures of near misses and survivor guilt.

Second, the correlational nature of this research prevents us from making causal statements about the role of near miss experiences, and we cannot rule out reverse causation or confounding in our data. It is possible that early reexperiencing led people to report near miss experiences, and it is also possible that certain individual differences made some individuals more likely to report both near misses and reexperiencing. However, by controlling for lifetime stressful event history and pre-9/11 mental health, we have tried to reduce the plausibility of these explanations. For example, while lifetime stressful events predicted reports of near misses—suggesting the influence of individuals' social networks, how individuals construe events, or other individual differences—we found near misses to predict reexperiencing even while controlling for the experience of lifetime stressful events.

Finally, this study, while conducted in a large national sample, only included a relatively small number of people with near miss experiences. Future research efforts directed specifically at collecting data on near misses could test the generalizability of our findings by examining larger samples of those with near misses in a variety of different contexts.

We believe that future research on traumatic events should investigate the social context in which these events occur. A fruitful avenue of research might be to examine factors that influence whether individuals focus mainly on the meaning of an event for themselves or for others. Examples of such factors might be scope of the event, relationship characteristics, and determinants of taking the perspective of others. Negative life events usually affect more than one person and an individual's perceptions of the "meaning" of the event for oneself alone may be only one piece of the puzzle in adjustment to adversity. Those who narrowly avoid tragedy may give thanks for their good fortunes, but only at the expense of seeing how precarious those fortunes can be.

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Notes

1. Other reports from this data set (e.g. Silver et al., 2002; Silver et al., 2006) had interests in variables (e.g., coping strategies, physical health) assessed at additional time points (i.e., 9–14 days, 6 months post 9/11) with reduced Ns. These waves are not included as they do not provide data of interest to the present set of analyses.
2. We use this terminology to indicate high rates of post-traumatic stress disorder (PTSD) consistent with, though not necessarily indicative of, a diagnosis of PTSD. A near miss may or may not meet DSM criteria for PTSD.
3. All analyses were also conducted with dichotomous variables representing depression and anxiety separately as predictors; results were substantively unchanged.

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