

Finding Social Benefits After a Collective Trauma: Perceiving Societal Changes and Well-Being Following 9/11

Michael J. Poulin

Department of Psychology, State University of New York–Buffalo, Buffalo, NY

Roxane Cohen Silver

Department of Psychology, University of California–Irvine, Irvine, CA

Virginia Gil-Rivas

Department of Psychology, University of North Carolina, Charlotte, NC

E. Alison Holman

Program in Nursing Science, University of California–Irvine, Irvine, CA

Daniel N. McIntosh

Department of Psychology, University of Denver, Denver, CO

Individuals frequently perceive positive changes in themselves following adversity; after a collective trauma, they may perceive such benefits in others or in their society as well. We examined perceived benefits of the September 11, 2001 (9/11) terrorist attacks in a 3-year study of a national sample of adults (N = 1382). Many individuals (57.8%) perceived social benefits of 9/11, including increased prosocial behavior, religiousness, or political engagement. Individuals who found increased national religiosity as a benefit 2 months post-9/11 reported greater positive affect and life satisfaction and lower distress and posttraumatic stress up to 3 years post-9/11. Pre-9/11 religiousness and Republican political affiliation predicted perceiving religion-related social benefits post-9/11. Perceptions of social change are important but understudied responses to stressful events.

Many people find meaning or perceive benefits in traumatic experiences (Lehman et al., 1993; Silver, Boon, & Stones, 1983; Taylor, 1983). Growing evidence suggests that perceiving benefits following trauma often promotes well-being and adjustment (for a meta-analysis, see Helgeson, Reynolds, & Tomich, 2006; also see Joseph & Linley, 2005, for a contrasting view on adversity and growth). Previous research on perceived benefits or growth has focused on individuals' perceptions of positive change within themselves, but most traumatic events affect more than one person in some way, and some traumas may affect entire families, communities, or even societies (e.g., Barton, 1970; Norris, Phifer, & Kaniasty, 1994). An illness or loss in the family, a community

disaster, or a national crisis can produce change, both positive and negative, in an individual's social environment (Tedeschi & Calhoun, 2004). These changes may affect an individual's well-being directly, by changing patterns of social interaction, or indirectly, by altering individuals' views of the social context. In either case, those affected are likely to perceive these changes and appraise them as either beneficial or harmful. Could perceiving social benefits of trauma promote individual well-being in the same manner as perceiving benefits for the self?

A potentially informative context in which to examine social benefits is that of the terrorist attacks of September 11, 2001 (9/11). Although most individuals in the United States did not

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Correspondence concerning this article should be addressed to: Michael Poulin, Department of Psychology, 206 Park Hall, State University of New York–Buffalo, Buffalo, NY 14260-4110. E-mail: mjpoulin@buffalo.edu.

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experience a direct threat during 9/11, the attacks had a national impact. Many individuals across the country reported elevated distress after the attacks (Schuster et al., 2001; Schlenger et al., 2002; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002), much of which was not attributable to objective degree of exposure (Silver et al., 2004). At the same time, positive social changes of multiple kinds were evident following the attacks, including increased altruism, kindness, and solidarity (Abrams, Albright, & Panofsky, 2004; Etzioni, 2002; Steinert, 2003).

The 9/11 attacks also yielded cultural changes that some segments of the population might appraise as positive. In the years following 9/11, the nation experienced a shift towards political conservatism, including increased patriotism, support for the military, willingness to sacrifice personal liberties for national security, and support for President George W. Bush (e.g., Landau et al., 2004; Pyszczynski, Solomon, & Greenberg, 2003; Skitka, Bauman, & Mullen, 2004). In addition, the nation experienced an increase in religiosity, manifest after 9/11 briefly in the form of increased attendance at religious services (Pew, 2001) and lastingly in the form of increased public religious language and private religiosity or spirituality (TIME.com, 2006; Torabi & Seo, 2004).

Despite the great volume of research on benefit finding, to our knowledge no prior research has examined perceptions of social benefits. Moreover, existing research on 9/11 has similarly been focused on benefits for the self (e.g., Ai, Cascio, Santangelo, & Evans-Campbell, 2005; Linley, Joseph, Cooper, Harris, & Meyer, 2003; Milam, Ritt-Olson, Tan, Unger, & Nezami, 2005; Peterson & Seligman, 2003), despite the collective nature of the trauma of 9/11 and its apparent social effects. Thus, the present study sought to examine how individuals' perceptions of social benefits post-9/11, including religious or political change, were related to their own well-being. In addition, we sought to identify factors associated with perceiving social benefits in the wake of 9/11, including effects of 9/11 that only certain segments of the population would be likely to appraise as benefits. That is, though all Americans might agree that increased prosocial attitudes and behavior after 9/11 constituted a social benefit, it is likely that political and religious changes would only be perceived as benefits by those who approved of these changes—specifically, more conservative or religious individuals.

We formulated two hypotheses: (a) Perceiving social benefits would predict greater psychological well-being in the years following 9/11; and (b) religious and politically conservative individuals would perceive higher levels of religious and political social benefits post-9/11, respectively, than would other individuals. These hypotheses were tested using data collected as part of a larger longitudinal study of a national sample of Americans over the 3 years following the 9/11 attacks (see Silver et al., 2002, 2006). We also examined the association of several other important variables with perceiving benefits and psychological adjustment post-9/11, including mental health history, prior lifetime exposure to stress-

ful events, social support, and degree of exposure to the 9/11 attacks.

METHOD

Participants

The study sample, provided by Knowledge Networks Inc. (Menlo Park, CA), an online survey research company, was drawn randomly from Knowledge Networks' nationally representative Web-enabled research panel. The Knowledge Networks panel is developed using traditional probability methods for creating national survey samples and is recruited using stratified random-digit-dialed telephone sampling. To ensure panel representativeness, Knowledge Networks provides Internet access to households as needed. In return, panel members participate in brief Internet surveys three to four times a month. Participation in surveys also earns participants bonus points that they can redeem for merchandise, and individuals recruited into the Knowledge Networks panel whose households are already Web-enabled are compensated with extra bonus points. For the present study, all respondents were compensated with extra bonus points, worth approximately \$10 per survey. Members may leave the panel at any time, and receipt of Internet access is not contingent upon completion of any particular survey.

At the time of the study, the distribution of the Knowledge Networks panel 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). The panel does not respond to surveys significantly differently over time than more "naïve" survey respondents (Dennis, 2001).

Design and Timing of Surveys

Data used in the present study were collected at several time points, or "waves." At each wave, panel members were notified that a survey was available for completion in their password-protected e-mail accounts. Surveys were confidential, self-administered, and accessible any time of day for a designated 3–4 week period. Panel members could complete a survey only once. In addition to the waves described below, which Knowledge Networks conducted for the sole use of the authors, Knowledge Networks provided access to data they had collected from individuals in the sample prior to 9/11 (between April 21, 2000 and September 10, 2001). This information included panelists' mental health history, religious affiliation, and attendance at religious services, and political affiliation. In addition, Knowledge Networks routinely collects background information on their panelists, including gender, age, ethnicity, educational status, and household income, all of which were examined in the present study.

The Wave 1 survey¹ was fielded between November 10, 2001 and December 3, 2001 to 1,643 adults; 1,382 completed it (84% participation rate). The Wave 1 sample consisted of a random subsample of respondents sampled by Knowledge Networks within a few days after 9/11 ($n = 933$), with oversampling from New York, NY ($n = 107$) and three other communities recently exposed to collective traumas: Littleton/Denver, CO; Miami, FL; and Oklahoma City, OK.

All Wave 1 survey participants were eligible to complete the Wave 2 survey, fielded between March 16 and April 11, 2002, and 1,141 (90%) did so. All those who had completed Wave 1 were also eligible to participate in Wave 3, fielded between September 20 and November 3, 2002; 1,098 (79%) completed Wave 3.

After Wave 3, the study only followed respondents from the original nationally representative subsample or from the New York City oversample. These 842 individuals (77% of Wave 3 participants) were invited to complete surveys at three subsequent waves: Wave 4, from March 13 to April 6, 2003 ($N = 667$, 79% response rate); Wave 5, from September 12 to October 31, 2003 ($N = 639$, 76% response rate); and Wave 6, from September 12 to November 2, 2004 ($N = 695$, 84% response rate; approximately 50% of the Wave 1 sample).

Measures

Perceptions of social benefits were assessed at Wave 1 in two ways. First, respondents were asked, "Some people have reported finding unexpected positive consequences in the wake of the September 11 attacks and their aftermath. Have you, personally, been able to find any positive consequences as a result of them?" (1 = *No, not at all*, 2 = *Just a little*, 3 = *Some*, 4 = *Quite a bit*, 5 = *Yes, a great deal*). Second, respondents who reported finding positive consequences (i.e., ratings > 1) were asked, "What positive consequences have you found as a result of the September 11 attacks and their aftermath?" An initial coding scheme for these open-ended responses was created by two authors (VGR and RCS) based on the categories of posttraumatic growth identified by Tedeschi and Calhoun (1996), and then modified to better reflect the data. Seven primary categories emerged from the coding process: increased kindness (e.g., "Most people are kinder and more caring to each other"), increased altruism (e.g., "The outpouring of generosity and support for the rescue efforts and the victims"), increased closeness (e.g., "I think that it has brought people and families closer together"), philosophical changes (e.g., "Life is precious, live every day like it is your last"), increased religiosity (e.g., "More people praying and attending church"), political changes (e.g., "Increased patriotism,

awareness of our government"), and increased national security (e.g., "Heightened security at the airports and in general across the country").

Two additional coders, blind to details about the respondents' 9/11 experiences or life history, then classified the responses according to this scheme. Interrater agreement ($r = .90$) was high; discrepancies were negotiated via discussion between the coders. Individuals' responses could be classified as fitting multiple categories, so categories were not mutually exclusive. Thus, the coding process resulted in seven dichotomous variables, with responses coded "1" on a variable if the response matched that category and coded "0" if the response did not. However, to simplify analyses and presentation for the present study, the first three categories (increased kindness, increased altruism, and increased closeness) were combined into a general "prosocial" benefits category. This resulted in five dichotomous variables, representing philosophical, prosocial, religious, political, and security benefits.

At each wave post-9/11, both positive (positive affect and life satisfaction) and negative (general distress and 9/11-related post-traumatic stress symptoms) dimensions of well-being was assessed. Respondents reported how frequently they experienced eight positive emotions (affection, joy, love, happiness, contentment, caring, pride, and fondness) within the past week (Diener, Smith, & Fujita, 1995), and the mean was used as an index of positive affect. Life satisfaction was assessed using the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Distress was assessed at Wave 1 using the 25-item Hopkins Symptom Checklist (HSCL-25; Derogatis, Lipman, Rickels, Uhlenhuth, & Cori, 1974). At Waves 2–6, distress was measured using the conceptually similar 18-item Brief Symptom Inventory (BSI-18; Derogatis & Savitz, 2000). Posttraumatic stress related to 9/11 was assessed at Wave 1 using the Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1997), and at Waves 2–6 using the conceptually similar PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993). All well-being measures had excellent internal consistency at all waves ($\alpha > .91$).

Religiosity was assessed in three different ways. First, as part of a general lifestyle questionnaire, Knowledge Networks assessed religious affiliation and frequency of attendance at religious services (1 = *Never*, 6 = *More than once a week*). Religious affiliation was reported prior to 9/11 by 77% of respondents ($n = 1071$), and attendance by 67% ($n = 926$). In addition, at Wave 1 all respondents completed a two-item measure of intrinsic religious motivation (Gorsuch & McPherson, 1989), which had good internal consistency ($\alpha = .83$, $r = .61$). Before 9/11, 35% of our sample ($n = 477$) completed a Knowledge Networks-administered political profile survey that included political affiliation (1 = *Strong Republican*; 4 = *Undecided/Independent/Other*; 7 = *Strong Democrat*).

At Wave 1, participants reported their experiences related to the 9/11 attacks. Due to the predominantly indirect, media-driven nature of 9/11 exposure nationwide, these data were used to group

¹ Other reports from this data set (e.g., Silver et al., 2002) had interests in variables (e.g., coping strategies, acute stress symptoms) assessed by Knowledge Networks at a time prior to the data collections reported herein (i.e., 9–14 days post-9/11). For simplicity, we exclude that prior wave, which is not of interest to the present set of analyses.

individuals into one of three levels of exposure: 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 attacked), live media exposure (watching the attacks unfold live on television), and no live exposure (only seeing or learning of the attacks after they had occurred).

Perceived social support was measured at Wave 1 by having respondents rate potential targets (including romantic partner, family, and/or close friends) on two items: "In the past week, how often did the following people help you understand or sort things out?" and "In the past week, how often did the following people provide you with encouragement?" (1 = *Never*, 5 = *All the time*). The mean of these items for all applicable targets was used as an index of perceived social support, and had excellent internal consistency ($\alpha = .90$).

Lifetime exposure to stressful life events was assessed as the total number of 37 negative events (e.g., serious illness or injury, natural disaster, financial hardship) reported by a respondent on a checklist used by this research team in prior studies (e.g., Silver et al., 2002). A Knowledge Networks-administered health questionnaire provided information on respondents' self-reported physician-diagnosed depression or anxiety disorders. An index of pre-9/11 psychological diagnoses was created with values of 0 (no diagnoses), 1 (depression or anxiety), and 2 (both depression and anxiety).

Data Analysis

Testing the first hypothesis, that perceiving social benefits would be positively related to psychological well-being following 9/11, presented the challenge of predicting well-being at multiple time points (Waves 2–6). The best approach for doing this is provided by multilevel regression modeling, a statistical technique that allows a dependent variable to be modeled as a function of (a) its mean value, and (b) random (error) variation across measurement points (Singer & Willett, 2003). Because multilevel modeling fits only one model to represent all points in time, it avoids type I error problems that arise when testing each time point separately, and because it explicitly estimates random error across time points, it prevents error inflation that would result from merely averaging all time points together. Multilevel models such as those reported herein can be interpreted much as ordinary least squares (OLS) regression models except that, because multilevel modeling is a maximum likelihood technique, model fit is evaluated by χ^2 rather than R^2 .

For the present study, all analyses were conducted using STATA 9.0 (Stata Corp., 2005) and multilevel models were built using STATA's xtreg module with maximum likelihood estimation. The first hypothesis was tested using multilevel regression models to predict well-being at Waves 2–6, controlling for Wave 1 well-being. Models for each of the well-being variables (positive affect, life satisfaction, distress, and posttraumatic stress) were constructed

by screening three blocks of variables in separate regressions: demographics (age, gender, ethnicity, education, income level), stress and mental health (pre-9/11 mental health history, exposure to the 9/11 attacks, and number of lifetime stressful events), and social support and Wave 1 intrinsic religiosity. After significant variables from these blocks were entered, the five categories of benefits were entered as predictors as well.

Testing the second hypothesis, that religious and politically conservative individuals would be more likely to perceive religious and political benefits of 9/11, respectively, was done using multiple logistic regressions built as described above, but with pre-9/11 religiosity and political affiliation entered into the models in place of Wave 1 intrinsic religiosity. Analyses that included those variables, assessed only on part of the sample, as significant predictors had lower *ns* than other analyses.

All respondents in the present study participated at Wave 1, but there was varying participation at other time points. Analyses comparing respondents to nonrespondents on Wave 1 variables indicated that these groups did not differ in terms of well-being or the extent to which they perceived benefits of 9/11. Moreover, this type of missing data is acceptable in multilevel modeling, because individuals contribute to estimation of the model at particular time points even if they cannot at all time points (Singer & Willett, 2003). Small amounts of missing data (<2%) on particular measures within a wave were managed by listwise deletion of cases, resulting in only small reductions in *ns*.

RESULTS

Sample Demographics and Characteristics

The initial sample ($N = 1,382$) was demographically very similar to the U.S. population, and was 71.1% White, 9.2% African American, 10.8% Hispanic, and 8.3% other ethnicities such as Asian American or Native American. Women comprised 51.1% of the sample, and ages ranged from 18 to 101 ($M = 48.1$). A prior diagnosis of an anxiety disorder or depression was reported by 10.3% of the sample, with an additional 4.4% reporting both. A small proportion (4.6%) of our sample qualified as having been directly exposed to the 9/11 attacks, but most individuals (59.7%) reported indirect exposure via live television or having learned of the attacks after the fact (35.7%). For descriptive statistics and correlations for other key study variables, see Table 1.

Perceiving Benefits Post-9/11

Perceiving benefits from the 9/11 attacks was reported by 57.8% of our sample at Wave 1 (indicated by a response of at least 2, *just a little*, on the 5-point scale). Participants' open-ended responses predominantly fell into one or more of the five categories of benefits (philosophical, prosocial, religious, political, or security). Figure 1 shows the percentage of the overall sample who reported each of

Table 1. Descriptive Statistics and Correlations Between Key Study Variables 2 Months Post-9/11

Variable	1	2	3	4	5	6	7	8	9
1. W1 Perceived social support	–								
2. W1 Intrinsic religiosity	.20***	–							
3. Pre-9/11 religious service attendance	.10**	.50***	–						
4. Pre-9/11 Republican affiliation	–.07	.06	.08**	–					
5. W1 Perceived benefits post-9/11	.14***	.17***	.15***	.24***	–				
6. W1 Positive affect ^a	.23***	.18***	.13***	.11*	.13***	–			
7. W1 Life satisfaction ^a	.12***	.17***	.13***	.15**	.07*	.49***	–		
8. W1 Distress ^a	.14***	–.04	–.03	–.09	–.02	–.34***	–.42***	–	
9. W1 Posttraumatic stress ^a	.26***	.07**	–.01	–.13**	–.02	–.18***	–.24***	.60***	–
<i>N</i>	1363	1357	926	477	1373	1376	1377	1378	1375
<i>M</i>	2.50	3.30	3.48	4.52	2.16	3.55	4.31	0.35	1.72
<i>SD</i>	1.03	1.33	1.62	1.93	1.22	0.74	1.48	0.41	0.63

^aMean levels remained stable across subsequent waves except for posttraumatic stress, which tended to decline. Correlations at all waves were substantively similar to those shown.

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

these benefits. Responses could be coded as representing more than one category; however, the great majority of responses (70.0%) represented only one benefit category. Correlations between these categories were generally low ($r_s < .11$) with the exception of the correlation between political and security benefits ($r = .48$).

Each of these categories was examined further to determine whether the respondent identified the benefit in terms of change in the self or change in others (e.g., society, the nation). Philosophical benefits (changes to one's understanding of the world) was the only category of benefits reported uniformly as a change in the self. By

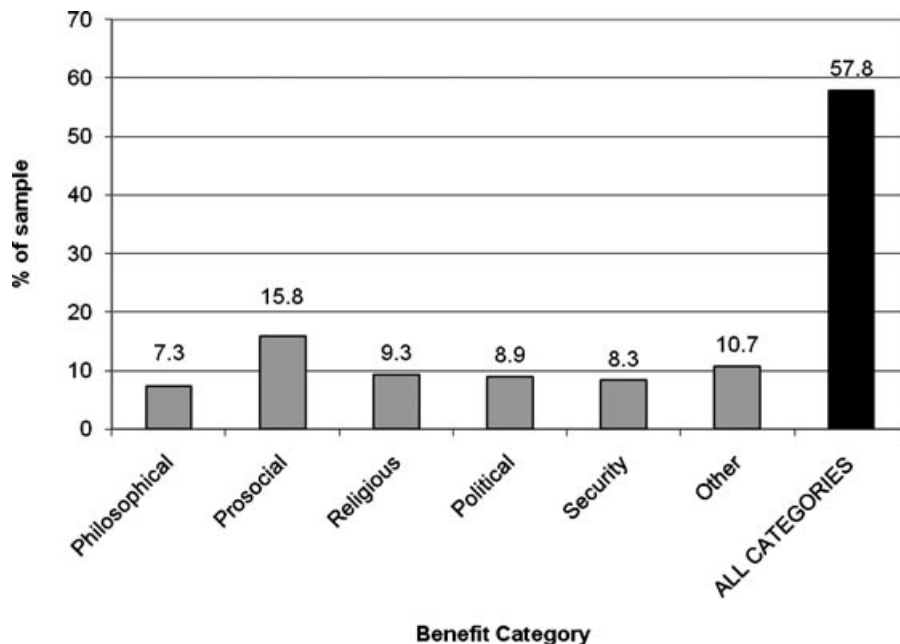


Figure 1. Percentage of sample reporting different categories of perceived benefits 2 months post-9/11 ($N = 1,381$). Because respondents' answers could be coded in more than one category, the sum of individual categories adds to more than the total percentage reporting benefits (57.8%).

Table 2. Multilevel Regression Model of Categories of Benefits Reported 2 Months Post-9/11 Predicting Well-Being From 6–36 Months Post-9/11: Standardized Regression Coefficients (β s)

Predictor variable	Positive affect ^a (<i>n</i> = 1251)	Life satisfaction ^b (<i>n</i> = 1236)	Distress ^c (<i>n</i> = 1263)	Posttraumatic stress ^d (<i>n</i> = 1240)
Positive affect	.50***			
Life satisfaction		.63***		
Distress			.52***	
Posttraumatic stress				.52***
Age		.07***		
Female gender	.08***			
Hispanic ethnicity	-.06**		.07***	.08***
Education		.04*		.04*
Income	.08***	.09***	-.08***	-.09***
Pre-9/11 psychological diagnoses	-.07***	-.04*	.18***	.12***
Stressful life events		-.04*	.05**	
Perceived social support	.05**			
Intrinsic religiosity		.04*		
Social benefits: prosocial	-.06**			
Social benefits: religious	.05**	.04*	-.05**	-.05**

Note. All predictors assessed 2 months post-9/11. Range in *ns* is due to small amounts of missing data on predictor variables.

Model fit: ^a χ^2 (9) = 654.58, $p < .001$; ^b χ^2 (8) = 1032.23, $p < .001$; ^c χ^2 (7) = 772.25, $p < .001$; ^d χ^2 (7) = 645.23, $p < .001$.

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

contrast, security benefits were expressed solely in terms of national changes. Additionally, prosocial benefits were expressed in terms of change in other people 91.1% of the time, religious benefits were expressed in terms of an increase in others' or the nation's religiosity 89.2% of the time, and political benefits were expressed in terms of change in others or the nation 91.2% of the time.²

Perceiving Benefits and Well-Being

The multilevel regression models for positive affect, life satisfaction, distress, and posttraumatic stress symptoms indicated that religious social benefits were associated with all well-being variables over time, including greater positive affect and life satisfaction and lower distress and posttraumatic stress (see Table 2). In addition, perceiving prosocial benefits post-9/11, predicted lower positive affect over time. No other benefit categories were associated with well-being, and neither was the single-item measure of benefit finding in general. Follow-up analyses indicated that the associations between reporting religious social benefits and well-being variables were significant even when controlling for religious affli-

ation, political affiliation, pre-9/11 attendance at religious services, or geographic distance from the World Trade Center.

Correlates of Perceiving Benefits

Multiple logistic regressions for each of the benefit categories revealed different predictors for each category (see Table 3). Pre-9/11 attendance at religious services was associated with greater likelihood of reporting religious social benefits, as was Republican political affiliation. Republican political affiliation was also significantly associated with reporting political social benefits.

DISCUSSION

In the wake of a national disaster, the 9/11 terrorist attacks, the majority of our sample perceived benefits for people around them and the nation as a whole—what we have labeled social benefits. To date, there has been no research identifying these types of benefits, their predictors, or their possible adaptive significance for different individuals. Below, we discuss how our findings address these issues and what the significance of social benefits might be for future research on responses to collective stressors.

We hypothesized that perceiving social benefits following the 9/11 attacks would generally be predictive of well-being, and this hypothesis was partially supported by our findings for religious social benefits. Individuals who reported religious social benefits reported better well-being across each of our four measures

² Because a small percentage of individuals reported prosocial, religious, and political benefits as being personal, all analyses reported herein were also conducted with individuals who reported each category as personal dropped from the analyses. In no case did dropping these individuals lead to significantly different results.

Table 3. Logistic Regression Models of Variables Related to Reporting Benefits 2 Months Post-9/11: Odds Ratios for Categories of Benefits

Predictor variable	Philosophical ^b (n = 1366)		Prosocial ^c (n = 1346)		Religious ^d (n = 405)		Political ^e (n = 477)		Security ^f (n = 1377)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Female gender			1.38*	1.07–1.78						
Other ethnicity ^a	1.99*	1.10–3.61								
Education	1.16*	1.02–1.31	1.21***	1.12–1.30			1.26*	1.00–1.58		
Stressful life events	1.05**	1.02–1.08	1.06***	1.04–1.08					1.03*	1.00–1.06
Perceived social support			1.15*	1.02–1.30						
Pre-9/11 religious service attendance					1.77***	1.39–2.26				
Pre-9/11 Republican affiliation					1.26**	1.07–1.48	1.27**	1.06–1.52		

Note. When pre-9/11 religious service attendance or Republican affiliation are included, *ns* are much smaller because these data were not available on all participants. Range in *ns* otherwise is due to small amounts of missing data on predictor variables.

^aEthnicity other than White, Black, or Hispanic. Model fit: ^b $\chi^2(3) = 20.15, p < .001$. ^c $\chi^2(4) = 71.83, p < .001$. ^d $\chi^2(2) = 34.91, p < .001$. ^e $\chi^2(2) = 12.34, p < .01$. ^f $\chi^2(1) = 4.18, p < .05$. * $p < .05$. ** $p < .01$. *** $p < .001$.

over the 3 years after 9/11, even controlling for prior levels of well-being. What can explain the long-lasting and robust—albeit relatively small—association between perceiving religious social benefits after 9/11 and well-being over time? One possible explanation is that perceiving religious benefits is just a proxy measure of religiosity, which is known to be positively associated with well-being (e.g., Hackney & Sanders, 2003; Koenig, McCullough, & Larson, 2001). However, at each wave and across all well-being measures, religious social benefits were associated with well-being after controlling for the respondent’s level of intrinsic religiosity. Moreover, these associations were not accounted for by pre-9/11 religious affiliation or attendance at religious services.

In our view, a plausible explanation for the association between religious benefits and well-being is that religious individuals found increased societal religiosity to be beneficial to themselves, as well. That is, religious individuals may have been gratified that society was increasingly embracing their way of life. Religion serves as a resource for coping with trauma in a wide variety of ways (e.g., Vickberg et al., 2001; Walsh, King, Jones, Tookman, & Blizard, 2002; for a review, see Pargament, 1997), and feeling that religious beliefs are supported may enhance its effectiveness in general. However, a more direct explanation is provided by theory and research on terror management theory (TMT; Pyszczynski et al., 2003; Rosenblatt, Greenberg, Solomon, & Pyszczynski, 1989). Especially in the wake of a terror-inducing event like 9/11, increased national acceptance of religiosity could act as a form of support for a religious cultural worldview, thereby enhancing well-being. Interestingly, some recent research has suggested that TMT is at odds with posttraumatic growth or benefit finding (cf. Lykins, Segerstrom, Averill, Evans, & Kemeny, 2007), but this interpretation of our findings would suggest that TMT is consistent with growth or benefits realized in one’s society.

Several other categories of social benefits were not associated with better well-being. In fact, the most commonly reported category of benefits—prosocial benefits—predicted lower positive affect. Although our data do not provide a reason for this unexpected finding, it is possible that individuals who perceived increased prosocial behavior in others were distressed that they themselves did not rise to the occasion in a similar fashion. Alternately, these individuals may have been especially saddened at the relatively short-lived nature of the national unity that resulted from 9/11—a unity they appreciated more than others. Though speculative, these possibilities should be examined in further work. In addition, although we did not find that political benefits predicted well-being, this may not be surprising in light of the fact that the political benefits respondents reported were not as explicitly tied to cultural worldviews (i.e., political ideology) as we expected, as described below.

As previously noted, some kinds of social change are likely to be perceived as beneficial only by certain groups of individuals. Yet, it was one such kind of change—increased national religiosity—that we found most potently to predict well-being following 9/11. We

had hypothesized that religiosity and political conservatism would be positively associated with reporting religious and political categories of social benefits, respectively. This hypothesis was confirmed. With respect to political benefits, we had anticipated that many individuals would report increased political conservatism or increased support for the President or Republicans as benefits. Many respondents did indeed report political benefits of this sort, but a close examination of responses within the political benefit category revealed that most individuals reported nonpartisan benefits such as greater political engagement and reduced partisanship. Such a perception would not be disproportionately gratifying to members of one political party over another, which may explain why political benefits were not associated with well-being in the same manner as religious benefits.

With respect to the association between religiosity and reporting religious social benefits, we believe it is reasonable to conclude that only religious individuals, for the most part, would be likely to appraise a national increase in religiosity as positive. Moreover, this should be especially true for individuals who regard widespread acceptance or dissemination of their religious beliefs as central to their faith. It is interesting, therefore, to note that follow-up analyses revealed that both Republican political affiliation and fundamentalist or nondenominational Christian religious affiliation were independently associated with reporting religious social benefits ($OR = 4.91, p < .05$).

Although our large, diverse sample and 3-year longitudinal design lend strength to the results obtained in the present study, we acknowledge several limitations. Most notably, the associations we found between perceiving religious social benefits and well-being represented small effects. If the values we obtained for this association (β s near .05) are accurate, these findings would be unlikely to have much clinical significance. However, we suspect that these results reflect the fact that this study was examining a novel prediction—that social benefits matter—and did not benefit from the existence of previous measures designed to examine this issue. Perceiving social benefits was assessed with a general open-ended item, and responses were probably not exhaustive with respect to the benefits respondents perceived. Moreover, this meant that perception of social benefits was assessed as a dichotomous variable, constraining the natural variance that would differentiate those who perceive a benefit strongly versus weakly. Given these limitations, finding any associations between perceived social benefits and well-being suggests that larger effects may be detected in future research that uses more sensitive and extensive measures of the construct.

An additional limitation of our study is that though it controlled for well-being assessed at the same time as perceived social benefits as well as several potential confounds, it could not establish causal direction or potential causal mechanisms linking perceived social benefits with well-being. Future work could go beyond the present study by assessing perceived social benefits

at multiple waves and by including additional measures (e.g., a measure of mortality salience) as potential mechanisms for the association.

Finally, in interpreting our results, we made some basic assumptions about the nature of cultural change in the United States following 9/11—namely, that political conservatism and religiosity rose in national prominence. There are data to support both claims (see Etzioni, 2002, for a review); they are nonetheless open to debate. Broad cultural change is difficult to assess, and it is possible that both shifts were short-lived phenomena that have not endured, that they occurred but were due mainly to factors other than 9/11, or that they did not occur at all. Moreover, cultural change at any one point can be superseded by subsequent changes. The 3 years following 9/11 were tumultuous times for the United States in many respects, given persistent anxiety about terrorism, two wars, and political polarization. It is likely that multiple assessments of the benefits of 9/11 over those years would have yielded different perceived benefits with their own patterns of associations with well-being. For this reason, as well as for reasons of inferring causality, it would be ideal for future research on perceived social benefits to be longitudinal in design.

In our view, the most important implication of our findings for future research is that, for collective traumas, individuals' responses may be marked less by a direct focus on the event's implications for the self than on the implications for others or for the broader society. This is an idea that has not been raised before, to our knowledge, and has not previously been tested. Future stress and trauma research, especially on large-scale stressful events that affect societies, should address perceptions of social benefits as well as personal benefits. Just as there are standardized measures to assess personal posttraumatic and stress-related growth (e.g., Park et al., 1996; Tedeschi & Calhoun, 1996), scales should be developed to assess perceptions of different positive changes that can occur in one's social network, one's community, and the broader society that may be associated with individual well-being. Perceptions of social benefits may be a promising new avenue for linking individuals' well-being to the state of the society.

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