


# Finding Benefits in the Aftermath of Australia's Black Saturday Bushfires: Can Distant Witnesses Find Benefits and Do Benefits Found Relate to Better Adjustment?

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## Abstract

This study aimed to extend the meaning literature beyond finding meaning in personal trauma by examining the benefits found by persons who were distant witnesses to Australia's Black Saturday bushfires. One hundred and twenty-five university students who witnessed the bushfires through the media completed measures of meaning making coping, benefits found, and adjustment. The most strongly endorsed categories of benefits found by distant witnesses were increased faith in people and increased compassion. After controlling for demographics, the duration of media exposure to the bushfires and meaning making coping, hierarchical multiple regression analyses demonstrated that the perceived benefit of enhanced self-efficacy predicted poorer adjustment, whereas the perceived benefits of increased spirituality and enhanced family closeness predicted better adjustment. Future longitudinal research is necessary to examine the direction of the relationships between categories of benefits found and adjustment. Clinical implications of the research are discussed.

## Keywords

perceived benefits, meaning making, adjustment, natural disaster, distant witnesses

Although interest in the construct of meaning is not new, in recent years researchers in a range of fields (e.g., clinical psychology, health psychology, and positive psychology) have focused on empirically examining meaning and its role in our adjustment to stressful life experiences (for a review, see Park, 2010). Although there is increasing research on the meaning people find following trauma they have witnessed through the media (e.g., Ai, Cascio, Santangelo, & Evans-Campbell, 2005; Updegraff, Silver, & Holman, 2008), few studies have examined meaning found following media exposure to a natural disaster, such as a bushfire (wildfire or firestorm). Research into the meaning distant witnesses have found following a natural disaster is important in order to further meaning making theory and provide a more comprehensive understanding of the human response to disaster.

On Saturday the 7th of February 2009, 173 people lost their lives and many others were seriously injured in the worst bushfires in Australian history (Victorian Bushfire Reconstruction and Recovery Authority, 2009). During this Saturday, known as "Black Saturday," the bushfires also caused the loss of infrastructure and vegetation and the destruction of more than 3,400 homes, schools, and businesses (Victorian Bushfire Reconstruction and Recovery Authority, 2009). Although many Australians directly witnessed and were directly affected by this disaster, the persistent exposure to images of the Black Saturday bushfires on

the television, radio, and internet raised concern about the psychological impact of the bushfires on all Australians. This concern was reflected in a special edition of the Bulletin of the Australian Psychological Society (Gordon, 2009).

The Black Saturday bushfires occurred in South-eastern Victoria where fire is a part of the natural landscape (Moloney, 2009). Although bushfires are considered a natural disaster, the fact that some of the fires on Black Saturday were deliberately lit resulted in many Australians trying to make sense of not only the power of mother nature but also how an individual could light a fire that led to the loss of so many lives (Ogloff, 2009). The process of meaning making, which Victor Frankl (2004) first proposed as a key component of adjustment to adversity, was evident in the conversations of ordinary Australians, the media, and academic pursuits in the aftermath of the fires (e.g., Gordon, 2009; Moloney, 2009).

Although the bulk of the meaning literature has focused on personally experienced disaster, disaster observed by

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distant witnesses, such as repeated exposure to images of the September 11 terrorist attacks in the United States, can also lead to a search for meaning as an individual's fundamental assumptions about his or her security and invulnerability are broken down (Updegraff et al., 2008). Because we could find no published empirical investigation into the meaning found by Australians who were distant witnesses to the Black Saturday bushfires, this study aims to examine the meaning found by distant witnesses and the role that meaning found plays in adjustment.

### An Integrated Model of Meaning Making

A number of meaning making theories have been put forward, such as cognitive adaptation theory (Taylor, 1983), a "stress and coping" conceptualization of meaning (Park & Folkman, 1997), and assumptive worlds theory (Janoff-Bulman & Frantz, 1997; Janoff-Bulman & Yopyk, 2004). Based on the degree of similarity between theories, Park (2010) proposed an integrated model of meaning making that articulates the key tenets of meaning making theories.

The integrated meaning making model (Park, 2010) proposes that when there is a discrepancy between global meaning (the general orienting systems that provide us with cognitive frameworks to interpret experience) and the appraised event meaning (e.g., degree of threat), distress ensues. It is proposed that this distress initiates a search for meaning, which can include meaning making coping. By searching for meaning, individuals attempt to reduce the discrepancy between global meaning and appraised event meaning. When this search for meaning is successful and meaning is made, this process leads to better adjustment. Meaning made has been conceptualized in a variety of ways by different theorists. One of the most influential meaning making theories, assumptive worlds theory (Janoff-Bulman & Yopyk, 2004), identifies benefits found as a key indicator of meaning made.

### Finding Benefits as a Construal of Meaning

In their assumptive worlds theory, Janoff-Bulman and colleagues (Janoff-Bulman & Frantz, 1997; Janoff-Bulman & Yopyk, 2004) postulated that highly stressful life events, such as a major bushfire, are likely to challenge an individual's fundamental assumptions about his or her invulnerability and worthiness as a person, and the world as benevolent and predictable. In restoring meaning, one key construal of meaning that Janoff-Bulman and Yopyk (2004) refer to is benefit finding or meaning as significance, which is the process of finding benefits in adverse events or circumstances (Davis, Nolen-Hoeksema, & Larson, 1998). According to a recent meta-analysis (Helgeson, Reynolds, & Tomich, 2006), individuals have reported identifying benefits in a wide range of stressful events such as war (e.g., Fontana & Rosenheck, 1998), bereavement (Cadell, Regehr, &

Hemsworth, 2003), physical illness (Tomich & Helgeson, 2004), caregiving (e.g., Samios, Pakenham, & Sofronoff, 2009), and natural disasters (e.g., Dolinska, 2003).

An early study by Thompson (1985) examined categories of positive meaning in persons who had their apartment partially or totally destroyed by a major fire in California in 1982. Most participants reported finding benefits, which included finding out about how helpful others can be, learning a lesson from the experience, and receiving a benefit (e.g., new furniture and better apartment). More recent research has demonstrated that persons affected by disaster can perceive benefits from their experience but that rates of benefits found depend on the nature of the disaster. McMillen, Smith, and Fisher (1997) found that survivors of a natural disaster (a tornado in Florida) perceived higher rates of benefits than survivors of mass violence (mass killings in Texas). This research also demonstrated that the types of benefits found varied according to disaster type. For the natural disaster, the most frequently reported benefit types included enhanced closeness (62%), enhanced community closeness (41%), and personal growth (35%). Other benefit themes reported following the natural disaster were increased efficacy and material gain. Although persons directly affected by fires and other stressful situations find benefits, do persons who are shaken by the vivid and pervasive images of disaster on the television also search for and find benefits in the disaster?

### Can Distant Witnesses Find Benefits?

Research has demonstrated that the psychological effects of major national disasters, such as the September 11 terrorist attacks, are not limited to the individuals who directly experience the disaster (Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). Following September 11, the meaning literature began to examine finding meaning in disasters experienced at a distance because events such as September 11 (Updegraff et al., 2008), the 2004 Madrid terrorist attacks (Vázquez, Hervás, & Pérez-Sales, 2008), and the 2004 Asian tsunami (Rajkumar, Premkumar, & Tharyan, 2008) can challenge our fundamental assumptions about a world that is secure, predictable, and comprehensible.

Research examining 931 distant witnesses of the September 11 terrorist attacks demonstrated that even though participants were not directly exposed to the attacks, most were actively searching for meaning 2 months after the attacks and 1 year later (Updegraff et al., 2008). Although most participants reported searching for meaning, most of the participants were unable to find meaning. The existing research on finding meaning in what Updegraff and colleagues referred to as "collective trauma" has not examined the categories of meaning made. Thus, this study will specifically examine the categories of benefits found from the "collective trauma" of the Black Saturday bushfires, in addition to the factors that relate to different categories of benefits found.

## Correlates of Finding Benefits in Distant Witnesses

A meta-analysis by Helgeson and colleagues (2006) that examined 87 cross-sectional studies on perceived benefits identified demographic and meaning making variables that were related to finding benefits. Female gender, non-White race, younger age, and religious beliefs were identified as demographic correlates of greater benefit finding. Meaning making coping (positive reappraisal and acceptance coping and less use of denial) was also related to finding benefits. Although finding benefits was not specifically examined in Updegraff et al.'s (2008) study of finding meaning in the September 11 terrorist attacks, this research also found that demographics (female gender, university education) and meaning making coping (greater use of positive reframing and instrumental support and less use of emotional support and denial) were related to finding meaning. Although the participants learned about the attacks predominantly by watching television, the degree of media exposure to the attacks did not relate to meaning found.

## The Relationship Between Finding Benefits and Adjustment in Distant Witnesses

Many theorists hold that searching for meaning will lead to better adjustment only in the case that meaning is actually found (e.g., Janoff-Bulman & Yopyk, 2004; Park & Folkman, 1997). However, Helgeson et al.'s (2006) meta-analysis demonstrated that the link between finding benefits and better adjustment depends on a number of factors, including how adjustment is measured. The meta-analysis results indicated that benefit finding was related to better adjustment when adjustment was operationalized as less depression and greater positive well-being. This meta-analysis included only cross-sectional studies, and although many researchers conceptualize adjustment as the outcome variable, it is also possible that better adjusted individuals are better able to find benefits. A longitudinal study examining finding meaning in collective trauma demonstrated that finding meaning predicted lower posttraumatic stress symptoms, even after controlling for mental health prior to the collective trauma (Updegraff et al., 2008).

## The Present Study

More research is needed to further extend the meaning literature beyond finding meaning in personally experienced disaster. The Black Saturday bushfires provided a unique opportunity to examine finding meaning in persons who were distant witnesses. This study aims to investigate (a) whether distant witnesses find benefits in their experience, (b) the categories of benefits found by distant witnesses following the Black Saturday bushfires, (c) the factors (demographics, contextual variables, meaning making

processes) that relate to meaning made (specifically benefits found), and (d) the relationship between benefits found and adjustment.

With regard to the first and second study aims it was hypothesized that similar to persons who personally experience disaster, distant witnesses will find benefits and the categories of benefits will be similar to those who personally experience disaster. Consistent with Updegraff et al.'s (2008) collective trauma research, for the third aim it was hypothesized that demographics (female gender and university education) and meaning making coping (greater use of positive reframing and seeking instrumental support and less use of seeking emotional support and denial) would be related to greater benefits found. Finally, with regard to the fourth aim, consistent with Park's (2010) integrated meaning making model, greater benefits found were hypothesized to be related to better adjustment (less depression and anxiety and greater life satisfaction and positive affect).

## Method

### Participants and Recruitment

This study on unanticipated adversity analyzed data from a sample of 125 students from a university in southeast Queensland, Australia, two and a half months after Black Saturday. Students were invited to participate in the study via an advertisement placed on the psychology research notice board. Those students who were eligible to obtain course credit for their participation in the study were awarded credit. A subset of the sample ( $n = 82$ ) completed an additional open-ended question to yield detailed qualitative information about benefits found by distant witnesses. Independent-groups *t*-tests found no significant differences on demographic or key study variables between students who completed the additional qualitative component of the research and those who did not.

Participants were aged between 16 and 52 years ( $M = 25.31$ ,  $SD = 8.09$ ), and the majority of the participants were female ( $n = 84$ , 67%). The amount of time participants were exposed to the bushfire coverage ranged from less than 1 hr to 48 hrs ( $M = 2.90$ ,  $SD = 6.63$ ) with participants identifying television (58%), internet (33%), print (4%), and radio (2%) as their primary source of exposure to the bushfire tragedy. Eleven participants (9%) reported that they had a direct relationship with a victim of the Black Saturday bushfires, 111 participants (89%) reported that they did not, and a further 3 participants (2%) did not disclose this information. Additional demographic characteristics of the sample are summarized in Table 1.

### Materials

Descriptive and psychometric data for all measures are summarized in Table 2. As it can be seen in Table 2, all internal

**Table 1.** Demographic Characteristics of the Sample

Characteristic	% (n)
Relationship status	
Single	52.8 (66)
Long-term relationship (but not married)	32.8 (41)
Married	10.4 (13)
Divorced	1.6 (2)
Nationality	
Australian	66.4 (83)
Other	31.2 (39)
Religious/spiritual beliefs	
Yes	38.4 (48)
No	61.6 (77)
Highest level of education completed	
Secondary year 10	4.8 (6)
Secondary year 12	38.4 (48)
Trade	3.2 (4)
Tertiary undergraduate	38.4 (48)
Tertiary postgraduate	13.6 (17)
Employment	
Unemployed	35.2 (44)
Casual or part-time employment	41.6 (52)
Permanent employment or self-employed	20.8 (26)

Note:  $N = 125$ . Percentages and frequencies do not add up to 100% due to rounding and missing data.

reliability coefficients for those measures included in analyses were adequate.

**Demographic and contextual variables.** Several demographic variables were assessed, including the following: gender, age, relationship status, nationality, ethnicity, religious/spiritual beliefs, education, and employment. The duration and type (i.e., television, radio, internet) of media exposure participants had to the bushfire coverage was also assessed.

**Meaning making coping.** Subscales of the Brief Cope (Carver, 1997) were used to measure meaning making. Each subscale consists of two items. Participants rated their use of each coping statement from 0 (*I don't do this at all*) to 3 (*I do this a lot*). The subscales were active coping, planning, positive reframing, acceptance, humor, religion, seeking emotional support, seeking instrumental support, self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. Cronbach's alpha reliabilities were above .70 for all subscales, with two exceptions. The alphas for self-distraction and venting were .64 and .67, respectively, and thus, these subscales were not used in analyses.

**Benefits found.** Benefits found were assessed in three ways. First, a closed question similar to that used by Davis, Nolen-Hoeksema, and Larson (1998) was used to assess whether participants had found benefits: "Sometimes people

**Table 2.** Descriptive and Psychometric Data for Measures of Meaning Making Processes, Benefits Found, Adjustment, and Social Desirability

Scale	<i>M</i>	<i>SD</i>	Reliability <sup>a</sup>
Meaning making processes			
Active coping	4.55	1.48	.84
Planning	4.47	1.42	.79
Positive reframing	4.04	1.69	.82
Acceptance	4.30	1.63	.75
Humor	3.14	1.89	.89
Religion	1.51	2.07	.73
Seeking emotional support	3.22	1.81	.82
Seeking instrumental support	3.56	1.80	.92
Denial	0.79	1.47	.91
Substance use	0.88	1.38	.89
Behavioral disengagement	0.98	1.46	.83
Self-blame	2.79	2.06	.84
Benefits found			
Enhanced self-efficacy	0.57	0.76	.88
Increased community closeness	0.65	0.83	.82
Increased spirituality	0.40	0.76	.81
Increased compassion	1.67	1.09	.86
Increased faith in people	1.72	1.12	.85
Lifestyle changes	0.72	0.86	.83
Enhanced family closeness	1.34	1.25	.74
Adjustment			
Depression	8.31	9.54	.90
Anxiety	6.66	8.66	.88
Life satisfaction	23.37	7.34	.91
Positive affect	32.51	8.15	.90
Social desirability	6.08	3.23	.77

Note:  $N = 125$ . Means having the same subscript (a,b,c,d,e,f,g,h,i,j,k,l,m,n,o) are significantly different from each other using the paired-samples *t*-test procedure with a Bonferroni correction of  $\alpha = .002$ .

<sup>a</sup>Cronbach's alpha reliability.

find benefits from a natural disaster, such as the Black Saturday bushfires. For example, some people feel they learn something about themselves or others. Do you feel that you have been able to find something positive from the Victorian bushfires? Yes/No." Second, for those participants who responded "Yes" to the previous question, he or she was asked to "please describe the benefits you have found from the Victorian bushfires." This question is also similar to that used by Davis et al. This open-ended question was

completed by a subset of the sample participants to yield qualitative information about the categories of benefits found by distant witnesses following the bushfires.

Finally, the Perceived Benefit Scales (PBS) by McMillan and Fisher (1998) were used to quantitatively assess different benefit finding factors identified following the bushfires. The PBS consists of 30 perceived benefit items, in addition to 8 unscored items used to decrease response bias. Participants rated the extent to which each item described their experience from 0 (*not at all like my experience*) to 3 (*very much like my experience*). The 8 PBS subscales (enhanced self-efficacy, increased community closeness, increased spirituality, increased compassion, increased faith in people, lifestyle changes, enhanced family closeness, and material gain) were created by calculating mean scores. Subscale intercorrelations ranged from .04 to .78 (mean  $r = .54$ ; mean shared variance = 29%). To examine convergent validity of the PBS subscales, point-biserial correlations between the PBS subscales and the dichotomous benefit finding variable (*benefits found* = 1, *benefits not found* = 0) were examined. All PBS subscales with the exception of material gain were significantly correlated with the dichotomous variable providing evidence of convergent validity for all scales except material gain. Material gain was excluded from quantitative analyses.

**Adjustment.** The depression and anxiety subscales of the 21-item Depression, Anxiety and Stress Scales (DASS-21; Lovibond & Lovibond, 1995) were used to measure distress. Participants rated each statement from 0 (*not at all*) to 3 (*very much/most of the time*). The five-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was used to measure life satisfaction. Participants rated each item on a 7-point scale (1 *strongly disagree* to 7 *strongly agree*). Positive affect items from the Positive and Negative Affect Schedule—Expanded Form (PANAS-X; Watson & Clark, 1994) were used to measure positive affect. Participants rated from 1 (*very slightly or not at all*) to 5 (*extremely*) the extent to which they had experienced each of the 10 positive mood states over the past few weeks.

**Social desirability.** The 13-item short-form of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) was used to measure social desirability. Participants were required to endorse either “true” or “false” for each of the 13 items depending on whether the statement was true or not true of themselves.

## Procedure

Ethical approval for the study was granted by the university’s Human Research Ethics Committee. After reading an explanatory statement that provided prospective participants with information about the study, participants gave informed consent to participate by completing the questionnaire either on campus or at their home. Completed questionnaires were returned to the researchers on campus.

## Results

### Analysis Plan

First, participants’ responses to the closed and open-ended perceived benefits questions were examined to address the first and second research questions of whether distant witnesses can find benefits and what categories of benefits they find. Following preliminary correlations to examine whether the PBS subscales were influenced by a social desirability response bias, the means for the PBS subscales were compared using paired-samples *t*-tests to examine which scales were most strongly endorsed by distant witnesses. Correlations were then performed to examine the factors that relate to benefits found and hierarchical multiple regressions were performed to examine whether benefits found predict adjustment (depression, anxiety, life satisfaction, and positive affect).

All quantitative analyses were performed using SPSS (Version 17), and an alpha level of .05 was used unless stated otherwise. Due to extensive missing data for 12 participants, the data for these 12 participants were excluded from all quantitative analyses, resulting in the sample size of 125 participants. A missing-value analysis demonstrated that less than 5% of the data were missing, and mean substitution was used for missing values on the continuous variables.

### Can Distant Witnesses Find Benefits in the Bushfires?

Of the 116 participants who responded to the closed question, 57 (49.1%) participants reported identifying benefits in the Black Saturday bushfires and 59 (50.8%) reported finding no benefits.

### What Categories of Benefits Do Distant Witnesses Find?

**Qualitative approach.** Of the 82 participants who completed the additional qualitative component of the research project, 47 (57%) reported finding benefits. Of this 47, all except one specified the benefit(s) they had found. The 46 participants listed a total of 70 benefits. The 70 responses were transcribed and then organized into 7 categories. Although the categories were mutually exclusive, respondents who offered multiple explanations were coded into each of the relevant categories. An independent rater agreed with the content categories developed and was asked to arrange the benefits found thematically into categories. This independent researcher produced an identical set of categories. Interrater reliability checks were carried out on the allocation of responses to the 7 categories of benefits found. The agreement between raters was very good (*Cohen’s Kappa* = .86) with 92% agreement rates for the categories. Disagreements were negotiated between the coders.

Table 3 provides a list of the 7 benefit finding categories derived from content analyses. Example responses for each

category are also presented in Table 3. The most frequently reported benefit found from Black Saturday was increased faith in people (20%).

**Quantitative approach.** Prior to examining the mean scores for PBS subscales, Pearson's correlations were performed on the PBS subscales and social desirability. Social desirability was unrelated to all PBS subscales. As it can be seen in Table 2, the most strongly endorsed PBS subscale was increased faith in people followed by increased compassion. Paired-samples *t*-tests comparing the subscales using a Bonferroni correction of  $p < .002$  (.05/21) found that the means for the most strongly endorsed subscales of increased faith in people and increased compassion were significantly higher than the means for the other subscales. The paired-samples *t*-tests also found that the subscale with the lowest mean, increased spirituality, was significantly different to all other subscales.

### What Factors Relate to Benefits Found?

To ascertain whether the PBS subscales varied as a function of demographic and contextual variables, correlations were performed on the PBS subscales and continuous variables (age and the number of hours of media exposure to the bushfires) and ANOVAs were performed on categorical data (gender, relationship status, nationality, ethnicity, religious-spiritual beliefs [yes/no], employment, education, type of media exposure). Because of the large number of relationships examined, a Bonferroni adjustment of  $p < .001$  (.05/56) was used for the ANOVAs.

None of the PBS subscales were significantly related to age. Two of the PBS subscales were positively related to the number of hours of media exposure to the bushfires. Specifically, higher scores on enhanced self-efficacy,  $r(123) = .30, p = .001$ , and increased community closeness,  $r(123) = .25, p = .005$ , were related to greater media exposure to the bushfires. Participants who reported that they had religious-spiritual beliefs scored higher on increased spirituality,  $F(1, 122) = 15.36, p < .001$ .

In order to examine the coping subscales of the Brief Cope (Carver, 1997) that relate to benefits found, correlations were performed between Brief Cope subscales (with the exception of self-distraction and venting subscales, which demonstrated poor internal consistency) and the PBS subscales using a Bonferroni correction of  $p < .001$  (.05/84). Significant positive correlations were found between the religion subscale of the Brief Cope and four perceived benefit subscales, such that higher scores on religious coping were related to higher scores on enhanced self-efficacy,  $r(123) = .34, p < .001$ ; increased spirituality,  $r(123) = .54, p < .001$ ; lifestyle changes,  $r(123) = .36, p < .001$ ; and increased community closeness,  $r(123) = .42, p < .001$ .

### Do Perceived Benefits Predict Adjustment?

Preliminary correlations were performed between the PBS subscales (with the exception of material gain, which

**Table 3.** Categories of Benefits Found

Category	% (n)
<i>Increased faith in people</i> For example, "My faith in humanity was reaffirmed."	20 (28)
<i>Enhanced community closeness</i> For example, "I have acquired a greater respect for the community."	12 (17)
<i>Increased appreciation of life</i> For example, "Reminds me that life is temporary and we need to appreciate every day."	11 (16)
<i>Enhanced family and other relationships</i> For example, "It has pushed me to cherish the ones I love more and has driven me to show them how much I care for them everyday."	8 (12)
<i>Lifestyle changes</i> For example, "I don't prioritize material wealth."	8 (11)
<i>Increased compassion</i> For example, "I have become more compassionate and giving to others".	6 (9)
<i>Enhanced self-efficacy</i> For example, "It gives me hope and makes me think I too can rebuild in the face of disaster."	5 (7)

Note:  $N = 46$ .

demonstrated poor convergent validity) and indicators of adjustment (depression, anxiety, life satisfaction, and positive affect). Higher scores on anxiety were related to higher scores on enhanced self-efficacy,  $r(123) = .25, p = .005$ ; lifestyle changes,  $r(123) = .19, p = .032$ ; and community closeness,  $r(123) = .24, p = .007$ . Higher scores on positive affect were related to increased compassion,  $r(123) = .18, p = .045$ , and increased faith in people,  $r(123) = .21, p = .021$ .

**Check for covariates.** The number of hours of media exposure, religious-spiritual belief, and religious coping were related to one or more perceived benefit scale. Therefore, duration of media exposure, religious-spiritual belief, and religious coping were entered into the hierarchical multiple regression as covariates.

The demographic and contextual variables that relate to the indicators of adjustment were examined by performing correlations (age and number of hours of media exposure) and one-way ANOVAs (gender, relationship status, nationality, ethnicity, religious-spiritual beliefs [yes/no], education, employment, type of media exposure) using a Bonferroni correction for ANOVAs of  $p < .002$  (.05/32). The only variable that had a significant relationship with an indicator of adjustment was age. Age was negatively related to anxiety,  $r(123) = -.26, p = .004$ , such that older participants scored lower on anxiety. Thus, age was also entered into the regression equation predicting anxiety as a covariate.

Coping variables that covary with the indicators of adjustment were identified by performing correlations between coping subscales and adjustment variables. Using a Bonferroni correction of  $p < .001$  (.05/8), six subscales (active coping, denial, substance use, behavioral disengagement, positive

reframing, and self-blame) demonstrated significant relationships with one or more indicators of adjustment. The sample size of 125 precluded the inclusion of all coping variables that covaried with adjustment. Thus, positive reframing, which was considered to most closely assess meaning making that would lead to benefits found, was the only coping variable, in addition to religious coping, that was entered into the hierarchical multiple regression equations.

**Assumptions of hierarchical multiple regression.** The removal of two influential data points for the regression predicting anxiety resulted in a substantive change in the interpretation of the data. Thus, the analysis with two participants excluded was reported for the regression predicting anxiety. Tolerance was not approaching zero and multicollinearity was not considered a threat to the stability of the regression analyses. According to the residual scatterplot of the regression-standardized residual and the regression-standardized predicted value for each of the regression equations, the assumptions of normality, linearity, and homoscedasticity were met.

**Hierarchical multiple regression analyses predicting adjustment.** For all hierarchical multiple regression analyses, religious-spiritual belief was entered as a covariate at Step 1, duration of media exposure at Step 2, meaning making coping at Step 3, and perceived benefits at Step 4. The regression predicting anxiety also had age entered as a covariate at Step 1. As it can be seen in Table 4, the overall model accounted for significant amounts of variance (29%-41%) in each adjustment variable. The demographics entered at Step 1 accounted for a significant amount of variance in anxiety (6%) and positive affect (6%). Age was a significant negative predictor of anxiety, such that older participants reported less anxiety. Religious-spiritual belief was a significant positive predictor of positive affect, such that participants who reported religious-spiritual beliefs had higher scores on positive affect. The duration of media exposure explained a significant increase in variance at Step 2 in the equations predicting depression (5%) and anxiety (6%), such that greater media exposure to the bushfires predicted higher scores on depression and anxiety. The addition of meaning making coping variables at Step 3 accounted for a significant increase in variance for each of the adjustment variables (20%, 7%, 30%, and 22% in depression, anxiety, life satisfaction, and positive affect, respectively). Religious coping predicted poorer adjustment (higher scores on depression and anxiety), and positive reframing coping predicted better adjustment (lower scores on depression and higher scores on life satisfaction and positive affect). The addition of the PBS subscales at Step 4 accounted for a significant increase in variance in depression (10%) and anxiety (11%). Enhanced self-efficacy was a significant positive predictor of depression and anxiety, such that higher scores on enhanced self-efficacy were related to higher scores on depression and anxiety. Increased spirituality was a negative predictor of depression and anxiety and a positive predictor of life satisfaction, such that higher scores on increased spirituality

predicted lower scores on depression and anxiety and higher scores on life satisfaction. Finally, higher scores on enhanced family closeness predicted lower scores on depression and higher scores on life satisfaction.

## Discussion

The overarching aim of this study was to extend the meaning literature beyond finding meaning in personally experienced adversity by examining finding meaning in persons who were distant witnesses to the Black Saturday bushfires. The first specific aim of the study was to investigate whether individuals who witnessed the bushfires through the media had found benefits from witnessing the bushfires. Consistent with the hypothesis that participants would find benefits, almost half of the sample participants who responded to the dichotomous question reported that they had found benefits from witnessing the Black Saturday bushfires. This figure is greater than that reported by Updegraff and colleagues (2008) in their study examining whether individuals could find meaning in the collective trauma of September 11. They found that at 2 months post-September 11 most of their sample (almost 60%) were unable to find meaning. The greater percentage of participants reporting finding meaning in the current study may be due to the different operationalization of finding meaning, in addition to the fact that the bushfires were primarily a natural disaster whereas September 11 was a mass killing. This second explanation is consistent with previous research that found higher rates of perceived benefits following a natural disaster compared with a mass killing (McMillen et al., 1997). This suggests that people are able to find greater meaning from both personally experienced and indirectly experienced events in which there appears to be less intentional harm involved.

The second specific aim was to examine the categories of benefits found by distant witnesses following the Black Saturday bushfires. Responses to an open-ended question about the types of benefits found by distant witnesses demonstrated that a range of benefits were found. Content analyses identified different benefit categories (increased faith in people, enhanced community closeness, increased appreciation of life, enhanced family and other relationships, lifestyle changes, increased compassion, and enhanced self-efficacy), all of which have been found in previous research (e.g., McMillen & Fisher, 1998; Tedeschi & Calhoun, 1996). The benefit category increased faith in people was identified by more than one quarter of participants, possibly due to the fact that although the initial media coverage focused on the devastation, the bulk of the coverage focused on the role of volunteers in relief centers and further afield. These preliminary findings suggest that the categories of benefits found by distant witnesses are similar to those found by individuals who personally experience negative life events. This indicates that the PBS (McMillen & Fisher, 1998), which was designed to measure benefits perceived from personally

experienced adversity, may be a useful scale to measure the benefits perceived by distant witnesses.

The subscales of the PBS (McMillen & Fisher, 1998) were examined for their psychometric properties in this sample of distant witnesses. All subscales except material gain demonstrated convergent validity with the dichotomous measure of perceived benefits and the subscales were not correlated with social desirability, indicating that the participants' reports of benefits found were not affected by a social desirability response bias. The subscales of increased faith in people and increased compassion were most strongly endorsed by distant witnesses. The increased compassion subscale was also strongly endorsed by participants in McMillen and Fisher's community sample used to validate the PBS; however, the strong endorsement of the increased faith in people subscale appears to be unique to the present sample of participants who witnessed the disaster through the Australian media, which highlighted individuals and communities supporting one another.

The third study aim was to investigate the demographic, contextual, and meaning making factors that relate to benefits found by distant witnesses. Contrary to prediction, the present study found that the only demographic characteristic related to benefits found was religious-spiritual belief, which was related to the perceived benefit of increased spirituality. The finding that religious-spiritual belief is related to a category of benefits found is consistent with meta-analysis results found by Helgeson and colleagues (2006). Although persons with religious-spiritual beliefs may be more likely to find greater benefits, especially of the spiritual type, we measured perceived benefits, and thus, it is unknown whether real changes in spirituality occurred.

Regarding contextual factors, greater media exposure to the bushfires was related to greater perceived benefits (enhanced self-efficacy and increased community closeness), which is inconsistent with previous collective trauma research on September 11 (e.g., Updegraff et al., 2008). The present study assessed different categories of perceived benefits using a multiitem scale, whereas previous research assessed meaning found using one item (Updegraff et al., 2008). By measuring different categories of benefits found, the present study has demonstrated that different categories of benefits have differential relationships with media exposure and, specifically, that individuals who had greater media exposure were more likely to identify their enhanced self-efficacy and increased community closeness as a perceived benefit. An alternative explanation for this finding is that the levels of indirect exposure to the trauma in this study are lower compared with that of September 11. Perhaps a certain level of indirect exposure is necessary to drive a search for benefits, however, when exposure is too great it becomes difficult to find benefits.

The only meaning making variable to be related to benefits found in this study was religious coping. This finding suggests that distant witnesses who turn to religion to manage distress find greater benefits (specifically enhanced

self-efficacy, increased spirituality, lifestyle changes, and increased community closeness); however, the direction of the relationship between religious coping and finding benefits needs to be ascertained in future longitudinal research.

The final aim of the study was to examine the relationship between perceived benefits and adjustment. After controlling for covariate demographics, duration of media exposure, religious coping, and positive reframing coping, the addition of perceived benefits to the model accounted for a significant increase in variance in depression and anxiety only. The perceived benefit categories of increased spirituality and enhanced family closeness predicted better adjustment, which provides support for the hypothesis that benefits found would relate to better adjustment. This finding is also consistent with Updegraff et al.'s (2008) research, which demonstrated that greater meaning found related to less anxiety (less future fears and posttraumatic stress symptoms). However, contrary to prediction enhanced self-efficacy predicted greater distress (greater depression and anxiety). This study was cross-sectional, and thus, the direction of the relationship between enhanced self-efficacy and distress is difficult to ascertain. It is possible that when distant traumatic events occur, people who are more distressed are more likely to search for and find benefits related specifically to themselves and their qualities as a person in order to restore their fundamental assumptions about themselves and their place in the world. This finding that a category of perceived benefits was not related to better adjustment provides further support for Pakenham's (2011) assertion that we should be cautious to adopt the simplistic view that all categories of meaning making should always be related to less distress. According to Pakenham, distress may in fact be a trigger, correlate, and/or outcome of some categories of meaning making at certain points in the ongoing process of meaning making.

This study has several limitations that are common in the field of disaster research, which is motivated by a sense of urgency and concern (Norris, Friedman, & Watson, 2002). The limitations include the following: the convenience sampling of university students, which limits the generalizability of findings; the lack of longitudinal data, which precludes the ability to examine the direction of the relationship between perceived benefits and adjustment; and the lack of pre-event measures of adjustment, which did not allow for pre-event adjustment to be controlled for in regression analyses. Nevertheless, this study qualitatively and quantitatively examined benefits found in a sample of distant witnesses of the Black Saturday bushfires. This study also examined the relationships between perceived benefit dimensions and both positive (positive affect and life satisfaction) and negative (depression and anxiety) indicators of adjustment within the context of an integrated meaning making model (Park, 2010).

Future research should further examine the measurement of perceived benefits from disaster not personally experienced by performing a confirmatory factor analysis of the PBS using a large sample of distant witnesses. Furthermore,



**Table 4.** Hierarchical Regression Analyses of the Effects of Demographics, Media Exposure, Meaning Making, and Perceived Benefits on Adjustment

Predictor	Adjustment							
	Depression (N = 125)		Anxiety (N = 123)		Life satisfaction (N = 125)		Positive affect (N = 125)	
	$\Delta R^2$	$\beta^a$	$\Delta R^2$	$\beta^a$	$\Delta R^2$	$\beta^a$	$\Delta R^2$	$\beta^a$
Step 1: Demographics	.02		.06*		.01		.06*	
Religious-spiritual belief <sup>b</sup>		-.03		.01		-.10		.24*
Age				-.24*				
Step 2: Contextual variables	.05*		.06**		.01		.01	
Duration of media exposure to the bushfires		.23*		.25**		-.07		-.10
Step 3: Meaning making	.20***		.07*		.30***		.22***	
Religion		.24*		.31**		-.06		-.06
Positive reframing		-.47***		-.18		.58***		.49***
Step 4: Perceived benefits	.10*		.11*		.09		.06	
Enhanced self-efficacy		.38*		.39*		.10		.02
Increased community closeness		-.00		.17		-.24		-.04
Increased spirituality		-.35*		-.30*		.36*		-.02
Increased compassion		-.07		-.11		-.17		.00
Increased faith in people		.20		.02		-.05		-.02
Lifestyle changes		.04		.07		-.08		-.09
Enhanced family closeness		-.31*		-.21		.35*		.36
Total R <sup>2</sup>	.37		.29		.41		.35	
Total F	5.15***		3.55***		3.81***		3.03**	

<sup>a</sup>Standardized beta weight at entry.

<sup>b</sup>Religious-spiritual belief: yes = 1, no = 0.

future research should examine benefits found and other types of meaning made by distant witnesses utilizing a longitudinal design that incorporates all variables in Park's integrated meaning making model. This study is an important step for the further development of meaning making theory because it highlights that individuals can find benefits in negative life events that they have not personally experienced. This study has also provided preliminary evidence that different benefits found in adversity witnessed from a distance have differential relationships with adjustment. Clinical implications of this research include clinicians exploring with clients the meaning they have made following collective trauma (e.g., "I have grown as a person because of witnessing this national disaster"), which although not personally experienced, may breakdown basic world assumptions. In this regard, a blend of cognitive restructuring and client-centered and existential approaches might be helpful (see Wong, 1998).

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