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Making Meaning of Disaster Experience in Highly Trauma-exposed Survivors of the Oklahoma City Bombing

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Abstract

Survivors of disasters can be expected to form meaningful perspectives on their experiences that shape their trajectories of recovery; thus, these perspectives are important to study. If humans are naturally compelled to create meaning from traumatic experiences, the creation of meaning should be evident in survivors' discussion of the effects of the disaster in their lives. Therefore, the purpose of this study of highly trauma-exposed disaster survivors was to identify meaningful aspects or outcomes of their disaster experiences in their perspectives. This study examined a random sample (N=182) of survivors of the Oklahoma City bombing six months after the disaster using open-ended questions. Text responses (N=650) were compiled, themes identified by multiple coders, responses coded into the themes, interrater reliability established, and the themes were then interpreted. Six themes were identified and grouped into three general categories: personal aspirations (reprioritizing life and altruism and self-improvement), connection with others (a freestanding category/theme), and making meaning (appreciation for life, religion and spirituality, and contemplating life, death, and humanity), which contained the majority of the responses. The findings from this study affirm the human need to make meaning from the experience of a traumatic disaster and suggest the potential relevance to survivors' recovery of therapies based on the creation of meaning and the promotion of positive growth.

Keywords

terrorism; disaster; meaning making; perspectives; qualitative methods

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Introduction

Severe exposure to a disaster has the potential to be a life-altering event (Rubens et al., 2018). The increasing occurrence of both natural and human-caused disasters in recent decades (Goldmann & Galea, 2014) has led to an expanding pool of research on the mental health effects of these extreme events. The majority of this research has focused on negative mental health outcomes, PTSD in particular (Norris et al., 2002). Yet, this research has established that most disaster survivors do not develop psychopathology after disasters (Bonanno et al., 2010; North et al., 2012). Even survivors without new postdisaster psychopathology can be expected to be greatly affected by their disaster experience; thus, the larger realm of personal reactions to disasters that shapes trajectories of human recovery deserves further study.

Human reactions to disasters include many negative effects outside of psychopathology that have been widely studied, including nonspecific distress (Harada et al., 2015), grief and bereavement (Ekanayake et al., 2013; Forbes et al., 2015), and negative moral cognitions (Kroll, 2003) such as shame, guilt, remorse (Joseph et al., 1993) or desire for revenge (Ayvaci et al., 2019; Meagan et al., 2019). Considerably less research has focused on the potential positive aspects or outcomes of disaster experiences. Most of these more positively-oriented disaster studies have centered on the concepts of “posttraumatic growth” (Tedeschi & Calhoun, 1996) or “stress-related growth” (Park et al., 1996; Park & Fenster, 2004), finding that many disasters survivors do experience positive changes in the wake of their disaster experiences (Ai et al., 2005; Hong et al., 2019; Lowe et al., 2013). A limitation of this literature has been a focus on pre-specified constructs. These studies of positive growth experience focus on categories independent of the process through which these categories emerge.

An important process in making positive changes after traumatic experiences is the creation of meaning. Viktor Frankl, a psychodynamic psychotherapist, postulated that humans have an innate drive to make meaning. This drive is amplified under immense suffering or threat of death (Frankl, 1946, 1963). Based on his examination of his survival in a concentration camp, Frankl argued that the ability to create meaning under such conditions was closely related to the likelihood of surviving (Frankl, 1946, 1963). Contemporary psychology has further developed the concepts of making meaning after horrific events in studying survivors of major trauma (Janoff-Bulman, 1992; Taylor, 1983). Departing from Frankl, who viewed making meaning as a value in itself, positive or negative, more recent theorists have focused on the positive aspects of making meaning. Recent efforts to extend Frankl’s theory into contexts of disaster trauma have further extended the positive aspects of meaning-making processes as a central aspect of coping with traumatic experience (Aten et al., 2019; Davis et al., 2019; Hollifield et al., 2008; Park, 2016).

A focus on individual processes of making meaning in relation to psychological adaptation after disaster trauma exposure would suggest a methodological research approach that is inductive rather than deductive. Thus, the use of quantitative methods in most disaster research (Randle et al., 2018a) precludes the opportunity to examine survivors’ meaning-

making processes in a comprehensive approach unconstrained by existing theory. Qualitative methods, by contrast, allow survivors to elaborate on whatever is most meaningful or important to them in their own words (Joseph et al., 2009; Padgett, 2017). If the need to create meaning in the midst of traumatic experiences is fundamental to human nature, as Frankl suggests, the creation of meaning should emerge from survivors' open-ended discussion of their personal perspectives of how their disaster experience shaped their lives. Therefore, this study of highly trauma-exposed Oklahoma City (OKC) bombing survivors was conducted to identify meaningful aspects or outcomes of their disaster experiences as described in response to open-ended questions. The qualitative methods allow for conceptualizing aspects of making meaning to inform the development of coping interventions for survivors of terrorism.

Methods

The sample for this study consisted of 182 participants randomly selected by a computer algorithm from the Oklahoma State Department of Health registry of 1,092 directly-exposed adult Oklahoma City bombing survivors. The participation rate was 71% and the sample was biased toward inclusion of survivors located in the most heavily damaged areas. Further details of the sampling methods are provided in a prior publication (North et al., 1999). Institutional review board approval for this study was obtained from Washington University and all participants provided written informed consent upon enrollment into this study.

Approximately six months after the bombing, the participants completed structured interviews including the Disaster Supplement (Robins & Smith, 1983) which obtained detailed information about the participants' experience of the bombing and its effects on their lives. The Disaster Supplement included five questions inquiring how the bombing affected the participants' lives and about changes in their perspectives and philosophies, including their religious and spiritual beliefs. Table 1 lists the five questions used to collect the quantitative and qualitative data for this study. Four of these five questions collected dichotomous yes/no responses, and affirmative response prompted the interviewer to ask the respondent to elaborate. One of these four questions also collected information in three categories (strengthened/weakened/other change). The data from these questions are summarized as counts and percentages.

This study used a modified phenomenological approach similar to methods previously used by members of this team as described in several publications (Dang et al., 2021; Johnson et al., 2017; North et al., 2015; North et al., 2014; North et al., 2013). For this study, the focus was on the ways in which survivors made positive or negative meaning of the disaster and its consequences, rather than taking an entirely open-ended approach to investigate their experiences more broadly. The choice of this specific inquiry necessitated modification of the approach from completely phenomenological to one in which the survivors were asked to reflect on their personal reactions and perspectives in the context of the disaster.

The first question in Table 1 collected only text responses. Participants' exact responses to these questions were graphically recorded by the interviewer and later transferred to a Microsoft Excel document with text responses to each of the five questions for each

individual, in preparation for analysis of the collective content. One researcher (M.M.) reviewed the collection of text responses to identify themes and developed inclusion and exclusion criteria for each theme. Two researchers then independently coded the responses to one or more of the identified themes, allowing multiple codes as applicable. Interrater reliability was achieved between the two raters' coding of text responses into themes, with Cohen's kappa scores ranging from .87 to 1.00, all in the excellent range (Cohen, 1960; McHugh, 2012). Coding differences were resolved by discussion between the two raters to achieve consensus. Next, one researcher (M.M.) coded all of the text responses from the five questions in these interviews into the identified themes.

The relative proportions of the content with valence in positive, negative, and neutral orientations were tabulated. Questions 1–4 were directionally unconstrained for valence, but question 5 asked specifically for a positive response. For these questions, positive responses were identified based on descriptions of improvements or changes for the better, negative responses were the opposite, and neutral responses were not completely positive or negative.

Seven themes were originally identified in the collection of text responses: reprioritizing life, appreciation for life, connection with others, religion and spirituality, contemplating life and death, altruism and self-improvement, and realization of mortality. Inspection of the data suggested that all of the material in the realization of mortality theme was conceptually represented in two other themes (religion and spirituality, and contemplating life, death, and humanity) and thus did not constitute a separate theme. Therefore, the content of the realization of mortality theme was redistributed into these two other themes, resulting in a total of six themes. The resulting six themes were then grouped into three general categories: personal aspirations, connection with others, and making meaning. The personal aspirations category includes two themes (reprioritizing life and altruism and self-improvement) that reflect changes individuals planned to make after surviving the disaster. The material within the connection with others entity represents a freestanding category as well as a theme, reflecting changes in relationships with others (family, community) as a consequence of the disaster. The making meaning category includes themes (appreciation for life, religion and spirituality, contemplating life, death, and humanity) pertaining to survivors' endeavors to understand the existential meaning of surviving the disaster.

Results

Research sample

The demographic characteristics of the sample (N=182) have been described in greater detail in a previous publication (North et al., 1999). In summary, at the time of this study, the sample had approximately equal representation of men (48%) and women (52%), a mean (SD) of 43.0 (11.5) years of age, and was predominately non-Hispanic white (89%). Nearly two-thirds (63%) were currently married. Nearly half (43%) had completed college, including 18% of the entire sample with a postgraduate education. This sample was highly exposed to the bomb blast, with 31% located in the Murrah Federal Building where the bomb was detonated and 87% overall sustaining injuries in the bombing.

Summary of categorical data and qualitative responses recorded from interview questions

Table 1 presents the numbers and proportions of categorical responses to the interview questions, with the exception of the first question about how the disaster affect the respondent's life, which solicited only a text response. Approximately two-thirds of the sample indicated that they intended to do things differently in the future as a result of having been in the bombing. Just over half of the sample had developed philosophies or perspectives regarding their bombing experience. Approximately half reported that the bombing had affected their religious or spiritual beliefs, and this change was overwhelmingly positive with very few reporting weakened faith. The vast majority of the sample (88%) identified positive outcomes or results that had emerged from the disaster.

All of the 182 participants contributed qualitative text responses to the five questions. The content of their text was coded into the six qualitative themes for a total of 650 responses. The numbers of responses coded into each theme are provided in Table 2. The altruism and self-improvement theme was smaller than the other five themes, which were all roughly equivalent to one another in numbers of coded responses. In the following section, the content of each of the six themes is summarized and illustrative quotes from the responses are provided.

Personal aspirations

The first category, consisting of two themes, includes survivor responses that reflect desired changes in personal goals, values, or ideals precipitated by the disaster. These desired changes were focused specifically on the survivors themselves and the kind of individuals they aspired to be.

Reprioritizing life—This theme characterizes how respondents evaluated or altered their lives to align with their newfound priorities. Many of the responses indicated the emergence of major new perspectives on what is really important in life. The respondents noted that the existing structure of their lives at the time of the disaster was not consistent with their new life perspective. Several comments reflected plans to restructure their lives to align them with this new perspective.

Many responses referred to a generalized awareness of life priorities and the need to reprioritize without specific details. For example, "I have a new perspective on what's really important." These responses indicated a desire to balance life priorities, focus on things that are really important, differentiate them from things that are relatively unimportant, and de-emphasize things that are trivial, for example: "some things are trivial now that used to be important." This new perspective led some respondents to worry less: "I'm more carefree… and not as uptight" and "I'm more laid back now, I don't take things so seriously." Some respondents decided to not fret over things that they could not do anything about: "Don't worry about things that I have no control over."

In addition to generalities, some responses detailed changes in life priorities. Family was the first priority for many of the respondents. This was specifically expressed as a desire to "spend more time with my family" and "be there for my child." The importance of family

was operationalized in several responses as more important than other previous priorities: “things, except for family, just aren’t that important.” A number of respondents stated a formal intent to prioritize family before other things, especially work or money, described by one as “not be so much of a workaholic but be at home more with my wife and family.” Others prioritized religion and spirituality, for example: “Family and God come first.”

Several respondents refocused on living in the moment rather than worrying about the future. This was operationalized as: “Do things now instead of putting them off,” and “Do what I want to do!” It was also operationalized as living more fully in the current moment: “It’s time I start living and enjoying life” and “I want to live my life richer, I want to be happy.” They recognized the importance of maximizing the present because time may be limited, e.g., “Take advantage of the time you have, because you may not be around tomorrow,” and “There is only so much time—we need to live it.”

Some responses indicated a desire to reprioritize their work lives: “change career orientation” or “get a new job and career.” Three respondents specifically noted the wisdom of avoiding government jobs. Specific career moves mentioned were: “I entered law school,” “I want to start a business,” “I want to be a mortician,” and “I am going to school to become a physical therapist.”

Altruism and self-improvement—This smallest theme is a collection of positive statements describing acts of kindness and helpfulness by others, personal feelings of compassion, desire to be a better person, and wishes for all humanity to care more for others, as a result of having survived the bombing. There were descriptions of outpourings of empathy for the disaster victims, and “People came together very selflessly and did what they could to help.” Several respondents commented on the importance of tolerance and patience. One respondent aspired to “get up with a smile on my face and refuse to hate anyone.” Another expressed a wish for this positivity to spread to other people: “I hope people learn the most significant thing in life is love and care for others.”

A number of respondents indicated that they had developed a desire for self-improvement and to “be a better person.” One respondent vowed to “work harder to think about people.” Specific plans to help other people included “being a volunteer,” “working on the reunion and memorial committee,” “opening a community youth program,” and “getting involved with giving.” Several respondents expressed intent to do good in more general ways, such as, “I am more committed to making this a better and safer place to live,” and “I want to be a light to people.” One respondent proclaimed, “I want to be a voice for survivors.”

Connection with others

The second category comprises the observations of the survivors regarding the renewed sense of connectedness among others and their general community as a result of the disaster. This category expands beyond the focus within the individual to interpersonal interactions and connections to the overall community.

All of the connections within the survivors’ responses moved in a positive direction. Respondents reported feeling “closer to family” and noted that the bombing “brought my

family closer together." They also specifically mentioned romantic relationships: "it made my marriage better," "I'm closer emotionally with my husband," and "it re-sparked love with my husband." Respondents described their friendships as stronger and closer: "I'm now able to express emotions to my closest friends." Some found new friends through bonding over shared disaster experience, as well as "closer friendships with injured friends." Relationships with coworkers also changed. Respondents described increased "camaraderie and emotional connection" and "closeness with the people I work with, it's like a family." They described themselves as "more considerate and closer to coworkers" and "we realized how much we care for one another." Although all of these changes described were from the respondent to others, there were also changes from others to the respondent: "My boyfriend has changed and has been really supportive."

Numerous passages contained references to connections at the community level and with "people" more broadly. This was characterized as "the love and caring from all over the nation, cooperation from everywhere, everyone was great;" "the world came to our aid." One respondent commented that the bombing had "brought the people of America together" which another described as "the unity of humanity." The respondents expressed pride in the people of their state: "Oklahomans came together and…rallied to help all," and the disaster volunteers "showed how state and community pulled together to help victims." As a result, "People in Oklahoma City are a lot closer today than they've ever been.

Making meaning

The third category, comprised of three themes (appreciation for life, religion and spirituality, and contemplating life, death, and humanity), includes survivors' efforts to understand their disaster experience in a broader existential context. This category consists of the majority of the coded responses.

Appreciation for life—This theme represents a collection of respondents' newfound gratitude for various aspects of life. Many respondents expressed this new appreciation for life in general terms and others provided specific details. Gratitude and thankfulness for having survived the bombing were common responses, described as: "I'm grateful to be alive," "It was the luckiest day of my life," and "It feels like I was given a second chance in life." Six respondents recommended, "Stop and smell the roses." A number of respondents said they no longer take things for granted. Several respondents focused on greater enjoyment from life: "I'm going to enjoy little things a little more….If there is some morning I want to sit on my patio, I'm going to do it." No comments reflected loss of value for life or consideration of wanting to die.

A common focus of appreciation was for relationships, both individual and collective: "I prized my family more" and "I realized that friends and community are very important." One respondent stated, "It makes me think a little more when I go to work, about saying a proper goodbye to my husband; you never know when is the last time you are going to see someone." Several respondents especially appreciated the disaster responders who provided immediate aid to the survivors: "I appreciate the police, the hospitals, everybody more." One respondent remarked on the rapidity of the response and the benefit of disaster

planning. Some responses emphasized the importance of community support: “We couldn’t have gotten through this individually; people without church or family couldn’t do this…so much good as surpassed that bad pain.” Respondents described an “outpouring of love and support from all over.” One said, “So many people wanted to help; Oklahomans are really loving and care about each other,” and another said, “The people of Oklahoma showed the rest of the world the proper way to handle a disaster.”

Religion and spirituality—The content of this theme is largely derived from responses to the question about how the experience of the bombing affected their religious or spiritual beliefs. Changes represented in this theme generally represented strengthening of faith and belief, paralleling the overwhelmingly positive direction identified in the quantitative responses to the question about the change in religion or spirituality. The responses in this theme provided not only religious or spiritual perspectives on the experience of the bombing itself, but also more broadly referred to the future and people in general. One respondent described “a religious reawakening.” Another came to a new realization: “There’s much more beyond this life and it’s important that I work to access that.” The religious and spiritual changes were described by many as an intensely personal experience, such as: “The Lord took care of me” and “At a time of need I was scared and called out for God, and He was there when there was no one else to depend on.” Others referred to changes in their religiosity and spirituality as a collective experience, such as “a renewed spirituality of the country” and “public expression of a belief in God.”

For some, their new religious and spiritual perspectives contained elements of determinism and predestination. One respondent described religious determinism very concretely in regard to the perpetrator of the bombing: “God controls everything; He was controlling [the actions of] McVeigh.” Another respondent characterized God as exerting control over the fate of the people who were in the bomb blast. Some said they had come to realize that they were destined to have a greater purpose in life because of having survived the bombing. Yet another respondent was convinced of being predestined within a divine plan: “The only reason I am alive is that God has a reason; there’s something I need to do, otherwise I wouldn’t be alive,” and another was certain that “God’s got a plan for my life.” Others said they believed that “God was trying to show me, to give me a second chance to get my life together and make a better life for myself and my family,” and “The hand of God protected me so I could help others.”

Contemplating life, death, and humanity—This theme covers non-religious pondering over life and death, with a deeper understanding of how precarious life is, that death is unpredictable, and that one’s own mortality is inevitable. This theme also reflected new perspectives on the role of fatalism in life and death and revision of prior conceptualizations of humanity.

Some respondents described a new sense of the impermanence, brevity, and uncertainty of life: “I’m more aware of how fragile life can be,” “I know I’m more vulnerable and that life is short,” and “It robbed me of the confidence that things like this would never happen to me.” Others described a new appreciation of how quickly and unpredictably life can end: “It made me realize your life can be snuffed out in seconds” and “It really showed me how

everything can change in a heartbeat." Several comments directly referred to the inevitability of mortality and death: "I realized I will die someday," "I feel like I'm living on borrowed time," and "Our bodies are terminal; we are not meant to live forever."

The bombing instilled a sense of fatalism for some respondents: "It confirmed my belief that if it's your time to go it's your time," and "It wasn't my time to go." One respondent was fully cognizant that "I am not in control." For another, survival of the bombing was confirmation that "there must be a special purpose for me." Some respondents described new uncertainties about mankind: "People are not what I thought they were; there are ruthless people on this earth," and "I'm not as trusting of others."

Counts of other collections of text responses—Other collections of text responses with common characteristics that were distributed across different themes warrant mention. Two such collections of text responses arose serendipitously during the coding and presentation of the content of this material: 1) an abundance of platitudes and 2) relative amounts of positive text responses elicited by the different interview questions.

Common and familiar platitudes were represented in 12% (80/650) of the coded responses. The type of platitude expressed most commonly was that life is fragile and brief (17 responses), and the next most frequently expressed type of platitude was that of living one day at a time (11 responses). Platitudes occurred across all themes but were most evident in the themes of reprioritizing life; appreciation for life; connections with others; and contemplating life, death, and humanity. Platitudes commonly recurred within the same themes; for example, "life is fragile" was found repeatedly in the contemplating life and death theme.

The first question, "How would you say the experience of this disaster has affected your life?" (allowing individuals to provide both positive and negative responses), yielded more positive (n=107) than negative (n=94) or neutral (n=15) responses. In contrast, the fifth question which was constrained specifically to asking only about positive outcomes ("Can you think of anything positive that came about as a result of the disaster?"), generated 160 positive responses (and, by design, no response from the remainder of the sample of 182).

Discussion

This study examined responses of 182 survivors of the Oklahoma City bombing to interview questions about the impact of their disaster experience on their lives and perspectives. The survivors' responses were overwhelmingly positive and were organized into three general categories: personal aspirations, connection with others, and making meaning, which received the majority of the responses. These three categories can be conceptualized visually as concentric circles with penetrable boundaries, as represented in the classic model of ecological systems theory (Bronfenbrenner, 1979; North et al., 2016). In this model, humans are viewed as developing through interactions with various systems in each concentric circle, from microsystems within individuals, to intermediate mesosystems, such as interpersonal relationships, to macro-level societal and cultural systems, which can

include religious, spiritual, or philosophical resources for making meaning (Bronfenbrenner, 1979).

The microsystem category of personal aspirations with two themes captures the effects of the disaster on personal values, ideals, and goals of these survivors. The content of the reprioritizing life theme revealed that the experience of the event led them to reconsider what is most important to them in life. A number of responses coded in this theme described lifetime aspirations that the individual had before the disaster and how these aspirations had changed as a result of the bombing experience, and some of those responses even included how the survivors were acting to realize their current aspirations. Reflections by many survivors that as a consequence of their bombing experience they had come to appreciate that life is short propelled them to want start to act on their aspirations with urgency.

In the other theme of the microsystem category, altruism and self-improvement, many of the specific comments were oriented toward other people. This finding is consistent with prior empirical disaster studies' findings that altruistic attitudes are inspired by these events (Drury et al., 2009; Vollhardt & Staub, 2011). The altruistic responses in the current study may emerge from several different processes. Disasters may elicit empathy and solidarity, both of which are known to motivate altruism (Maki et al., 2019; Russell & Mentzel, 1990). Actions initiated to compensate for feelings of survivor guilt may be a source of altruism (Drury et al., 2009). Disaster survivors may also cope with a loss of security and sense of vulnerability by seeking safety and a sense of belonging by personal immersion in disaster recovery through altruistic efforts to restore the community and aid distressed members (Gailliot et al., 2008; Maki et al., 2019).

The mesosystem category of connection with others, consisting of a single theme, addresses disaster-related changes in personal relationships of individuals to significant others and their communities. The survivors in this study reported increased closeness with specific others after the disaster, such as with romantic partners, children, friends, other loved ones, and fellow survivors, an observation that has been widely reported elsewhere (Segal et al., 2018; Smieja et al., 2006). Many comments in this category characterized the community as more unified. This sense of community consisted of identification with other individuals and a sense of identity as a member of the group of survivors who shared the disaster experience. Similarly, observations of "fusing" individual identities into a larger communal sense of identity defined by shared disaster experiences have been described in prior empirical studies (Buhrmester et al., 2015; Segal et al., 2018; Smieja et al., 2006; Whitehouse et al., 2017) as well as in some qualitative studies of terrorism (Randle et al., 2018b).

The macrosystem category of meaning-making concerns the survivors' ways of processing ultimate questions or concerns arising from their disaster experience, as expressed in the themes of appreciation for life; religion and spirituality; and contemplating life, death, and humanity. These three themes appeared to represent subtly different approaches or emphases in making meaning. Survivors expressing appreciation for life tended to describe the disaster itself as a powerful lesson that life is precarious and precious; those mentioning religious and spiritual concepts seemed to use them as preexisting structures for making meaningful sense of the event; and those contemplating life, death, and humanity seemed to express

broader perspectives or philosophies not necessarily involving specific religious or spiritual concepts.

The theme of appreciation for life consisted primarily of passages reflecting a straightforward sentiment of gratitude. Notably, no responses reflected loss of appreciation for life and none expressed a desire to end one's life after having survived the disaster. This finding would suggest that increased rates of suicide and suicidality should not necessarily be expected after disasters; the published literature is inconsistent on this point (Bromet & Dew, 1995; Rezaeian, 2008), and there is very little literature pertaining to terrorist attacks, but one 9/11 study found no change in suicide rates in the New York City population attributable to the attacks (Mezuk et al., 2009).

In the religion and spirituality theme, meanings were typically rooted in theological ideas, often explicitly mentioning God. Responses coded in this theme were overwhelmingly positive in nature and generally affirming, with only a few reflecting ambivalence, and none purely negative. These findings echo previous research on faith and spirituality in the context of disaster exposure (Aten et al., 2019; Davis et al., 2019; Hollifield et al., 2008; Hong et al., 2019). Responses in this theme were primarily focused on faith rather than religious practice and behaviors, emphasizing the importance of spirituality and the nature of the relationship with God as being personal, e.g.,: "God's got a plan for my life." An issue arising repeatedly in this theme was feeling out of control, which was typically resolved with a sense of closure through attributing control to God.

Responses in the life, death, and humanity theme specifically included efforts to make meaning directly out of confrontations with human vulnerability and mortality. As in the religion and spirituality theme, feeling out of control was a common sentiment, with acknowledgement of the capriciousness of the bomb blast and of the likelihood of surviving it. In contrast to the religion and spirituality theme, in which this feeling was generally resolved by relinquishing control to God, in this theme it was sometimes resolvable by major changes to overall perspectives on life restoring a sense control, but more often conceded to not having control.

All three of the themes in the macrosystem contained a substantial proportion of responses consisting of common aphorisms, and the appreciation for life theme consisted almost entirely of aphorisms. It is possible that the cognitive availability of these aphorisms increased the likelihood of their being recalled. It is also possible that these phrases reflect a commonly understood shorthand for concepts that convey a large amount of meaning or help to articulate ideas that might otherwise be difficult to express. In the religion and spirituality theme, these aphorisms provide a comforting and readily available heuristic to make meaning of horrific events. It may be the case that making meaning using religious or spiritual aphorisms is, at least in part, a product of prior involvement in religious institutions. Although meaning making occurs across a lifespan, in mass casualty events such as terrorist bombings, this activity is magnified. The struggle to make meaning reported in this theme resonates with Park's (2016) model of making meaning positing that after experiencing a disaster, individuals attempt to reconcile that experience with their previous global meaning system.

This study featured several strengths along with a few limitations. The study sample was representative of all disaster-exposed Oklahoma City bombing survivors. The use of qualitative methods eliciting undirected responses allowed exploration of the participants' perspectives unconstrained by assumptions of the researchers. Although the data were collected approximately 25 years ago, the findings add important knowledge to the field addressing issues that have not been reported in other published research since that time, providing novel findings and new insights into personal perspectives on the experience of a disaster and making meaning from it. It seems likely that the processes of making meaning and gaining perspectives on such extreme experience would not fundamentally change in the time since the Oklahoma City bombing and that the findings would continue to have enduring relevance today. As such, the findings from this dataset are likely to be highly applicable to disaster survivors even decades later.

A methodological limitation of this study was the recording of qualitative data by hand by interviewers rather than by audio recording. Even though interviewers attempted to record responses verbatim, some responses may have been affected by interviewer error. Another limitation was the focus of questions specifically directing responses toward positive effects of the experience of disaster and the effect of the disaster on religious and spiritual beliefs, potentially biasing three themes (connection with others; altruism and self-improvement; and religion and spirituality). Finally, this study's findings are not necessarily representative of disaster survivors in other locations or survivors of natural or technological disasters.

The findings from this study affirm the human drive to make meaning from the experience of the disaster, described around 75 years ago by Frankl (1946). This study's findings further suggest the potential relevance to disaster survivors of therapies based on making meaning and promoting positive growth noted in the literature as helping members of other types of populations (Masterson-Duva et al., 2020; Vos & Vitali, 2018). The consistent focus on relationships with others and the experience of similarity with other survivors suggest the potential for group-level interventions centered on the creation of meaning, such as those proposed by Yalom (1995).

Although the findings support the importance of meaning making immediately post disaster, Frankl suggested that meaning making represents a human drive and continues over the course of a lifespan. This suggests that it would be fruitful to study meaning making as an ongoing process over time to examine whether exposure to disaster trauma has long-term effects on individuals' behavior and relationships with others and whether meanings expressed post disaster remain stable or change based on postdisaster experiences. Given the salience of such an extreme event in people's lives, it would not be surprising that many of the reactions observed shortly after a disaster would endure for years and possibly decades, although the dynamic nature of the human mind might also lead to development of personal perspectives and meaning derived over the course of time. Future studies following the course of these constructs systematically studied across years and decades are needed to determine the relative durability and progression of the perspectives and meaning derived from such extreme experience.

Finally, before the findings from this study can be considered to be applicable beyond this one bombing survivor sample and this one study at one point in time shortly after the disaster, further research is needed to replicate the major findings that have emerged from this dataset in broader contexts. The methods for this study have been described in detail in this article as well as in prior publications by this research team and can be followed closely so that the methods can be carefully duplicated in future studies. Although a starting point for replication studies would be with similar directly-exposed adult survivors of a severe terrorist incident, additional studies can be conducted on other relevant population groups including first responders, child disaster survivor groups, family members, and the larger disaster-affected community. Various approaches to collection of data may be utilized, including focus groups, individual qualitative interviews, and written or spoken narratives. More rigorous data collection using transcriptions of audiorecorded participant responses can be expected to provide greater richness of detail and more extensive elaboration of the material provided by the participants. In all of this work, to achieve similar elaboration by survivors to of whatever is most meaningful or important to them in their own words, it will be paramount to adhere to nondirective facilitation of query into participants' personal experience.

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Table 1.

Interview questions and categorical responses

	% (n/N) Yes
1. How would you say the experience of this disaster has affected your life?	
2. Are you going to do anything differently in the future as a result of this experience?	68 (117/173)
3. Have you developed any philosophy or perspective to help you resolve this experience in your mind?	56 (101/180)
4. Did the experience affect your religious or spiritual beliefs?	49 (89/181)
Yes, strengthened	83 (74/89)
Yes, weakened	7 (6/89)
Yes, qualitative non-directional change only	10 (9/89)
5. Sometimes the most awful events have their good outcomes; can you think of anything positive that came about as a result of the disaster?	88 (160/182)

Table 2.

Frequencies and proportions of coded items within established themes

Category **Theme**	**# (N=650)**	**%**
Personal aspirations	172	26
Reprioritizing life	122	19
Altruism and self-improvement	50	8
Connection with others	121	19
Making meaning	357	55
Appreciation for life	116	18
Religion and spirituality	125	19
Contemplating life, death, and humanity	116	18