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Making Sense of the Meaning Literature: An Integrative Review of Meaning Making and Its Effects on Adjustment to Stressful Life Events

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Interest in meaning and meaning making in the context of stressful life events continues to grow, but research is hampered by conceptual and methodological limitations. Drawing on current theories, the author first presents an integrated model of meaning making. This model distinguishes between the constructs of global and situational meaning and between “meaning-making efforts” and “meaning made,” and it elaborates subconstructs within these constructs. Using this model, the author reviews the empirical research regarding meaning in the context of adjustment to stressful events, outlining what has been established to date and evaluating the strengths and weaknesses of current empirical work. Results suggest that theory on meaning and meaning making has developed apace, but empirical research has failed to keep up with these developments, creating a significant gap between the rich but abstract theories and empirical tests of them. Given current empirical findings, some aspects of the meaning-making model appear to be well supported but others are not, and the quality of meaning-making efforts and meanings made may be at least as important as their quantity. This article concludes with specific suggestions for future research.

Keywords: meaning making, stress, trauma, cognitive processing, worldviews

In recent years, interest in meaning has proliferated in many areas of psychology, including positive psychology (e.g., Steger, in press), cultural psychology (e.g., Mendoza-Denton & Hansen, 2007), emotions (e.g., King, Hicks, Krull, & Del Gaiso, 2006), health psychology (e.g., White, 2004), and clinical psychology (e.g., Hayes, Laurenceau, Feldman, Strauss, & Cardaciotto, 2007). Yet pinning down the definition of meaning is difficult (Klinger, 1998). Baumeister (1991) proposed a reasonable definition of meaning as a “mental representation of possible relationships among things, events, and relationships. Thus, meaning *connects* things” (p. 15). Although difficult to define, the notion of meaning as central to human life is a popular one. Meaning appears particularly important in confronting highly stressful life experiences, and much recent research has focused on meaning making (i.e., the restoration of meaning in the context of highly stressful situations). This article draws on current theories of meaning making to develop an integrated model, and then this model is used to evaluate the extent to which empirical findings regarding meaning in adjusting to stressful events support its various propositions. Suggestions for future research conclude the article.

Theoretical Perspectives on Meaning Making

Myriad perspectives can be brought to bear on this issue; some center on disruptions in life narratives and themes occasioned by stressful encounters (e.g., Crossley, 2000; Gilbert, 2002) or on reorganization of autobiographical memory in their aftermath (Bluck &

Habermas, 2001). Others emphasize reconfigurations of underlying cognitive structures (e.g., personal construct theory; Walker & Winter, 2007) or contemporary cognitive science (e.g., Barsalou, 2008). Taking any theoretical perspective on meaning making illuminates certain aspects but also necessarily entails obscuring others.

One useful model for organizing the literature concerning adaptation to life stressors, adopted for the present review,¹ is drawn from the work of a number of influential theorists (e.g., Bonanno & Kaltman, 1999; Davis, Wortman, Lehman, & Silver, 2000; Janoff-Bulman, 1992; Joseph & Linley, 2005; Lepore & Helgeson, 1998; Neimeyer, 2001; Taylor, 1983; Thompson & Janigian, 1988). Although differing in some particulars, these perspectives converge on a set of essential tenets for which there is a surprisingly high degree of consensus (Lepore, Silver, Wortman, & Wayment, 1996).² These tenets include the following: (a) People possess orienting systems, referred to here as global meaning, that provide them with cognitive frameworks with which to interpret their experiences and with motivation; (b) When encountering

¹ Because meaning in the context of highly stressful events is a broad topic, taking some theoretical perspective is necessary for sorting through of the vast swathes of ideas and data. Any model presents some limitations, and no model is currently predominant. The model underlying this article was developed from multiple prominent sources (see Figure 1) and should be subjected to empirical test alongside other alternatives, such as those noted here.

² It is important to note that these theorists differed in some aspects regarding specific elements of their theoretical viewpoints. For example, of the theorists whose work most strongly shaped the present meaning-making model, most were quite explicit about the “shattering” or discrepancy idea (e.g., Epstein, 1991; Janoff-Bulman, 1992; Joseph & Linley, 2005; Silver et al., 1983). Others described threats to self or beliefs or implied that threats to existential beliefs were driving the need to make meaning and often implicitly referred to violations of worldviews, but they did not make this notion the keystone of their theory (e.g., Lazarus & Folkman, 1984; Lepore, 2001).

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situations that have the potential to challenge or stress their global meaning, individuals appraise the situations and assign meaning to them; (c) The extent to which that appraised meaning is discrepant with their global meaning determines the extent to which they experience distress; (d) The distress caused by discrepancy initiates a process of meaning making; (e) Through meaning-making efforts, individuals attempt to reduce the discrepancy between appraised and global meaning and restore a sense of the world as meaningful and their own lives as worthwhile; and (f) This process, when successful, leads to better adjustment to the stressful event (for reviews, see Collie & Long, 2005; Gillies & Neimeyer, 2006; Greenberg, 1995; Lee, Cohen, Edgar, Laizner, & Gagnon, 2004; O'Connor, 2002; Skaggs & Barron, 2006). These tenets form the basis for the meaning-making model proposed by Park and Folkman (1997) and further developed here (see Figure 1). The components of the meaning-making model are described below.

Global Meaning

Global meaning refers to individuals' general orienting systems (Pargament, 1997), consisting of beliefs, goals, and subjective feelings (Dittman-Kohli & Westerhof, 1999; Reker & Wong, 1988). Global beliefs comprise broad views regarding justice, control, predictability, coherence, and so on, as well as individuals' self-views (Janoff-Bulman, 1992; Leary & Tangney, 2003; Parkes, 1993; see Koltko-Rivera, 2004), and form the core schemas through which people interpret their experiences of the world (Janoff-Bulman & Frantz, 1997; Mischel & Morf, 2003).

Global goals are internal representations of desired processes, events, or outcomes (Austin & Vancouver, 1996). Goals can be

desired end states (Karoly, 1999) or states already possessed that one seeks to maintain, such as health or relationships with loved ones (Klinger, 1998). Among the most commonly reported global goals are relationships, work, religion, knowledge, and achievement (Emmons, 2003). Goals are organized hierarchically, with superordinate higher level goals determining midlevel and lower level goals (Vallacher & Wegner, 1987).

A subjective sense of meaning refers to feelings of "meaningfulness" (Klinger, 1977), a sense that one has purpose or direction (Reker & Wong, 1988), and is thought to derive from seeing one's actions as oriented toward a desired future state or goal (cf. King et al., 2006; McGregor & Little, 1998). Whether this subjective sense of meaning should be considered an aspect of global meaning or a derivative thereof is currently in dispute (see Steger, in press).

Global meaning is assumed to be constructed early in life and modified on the basis of personal experiences (Austin & Vancouver, 1996; Singer & Salovey, 1991). The extent to which people are aware of their global beliefs and goals has not been established (Austin & Vancouver, 1996; Klinger, 1998; Martin & Tesser, 1996; Uleman, 1996), but global meaning nonetheless appears to powerfully influence individuals' thoughts, actions, and emotional responses.

Situational Meaning

Situational meaning refers to meaning in the context of a particular environmental encounter. Situational meaning thus begins with the occurrence of a potentially stressful event and describes an ongoing set of processes and outcomes, including assignment of meaning to the event (appraised meaning), determination of dis-

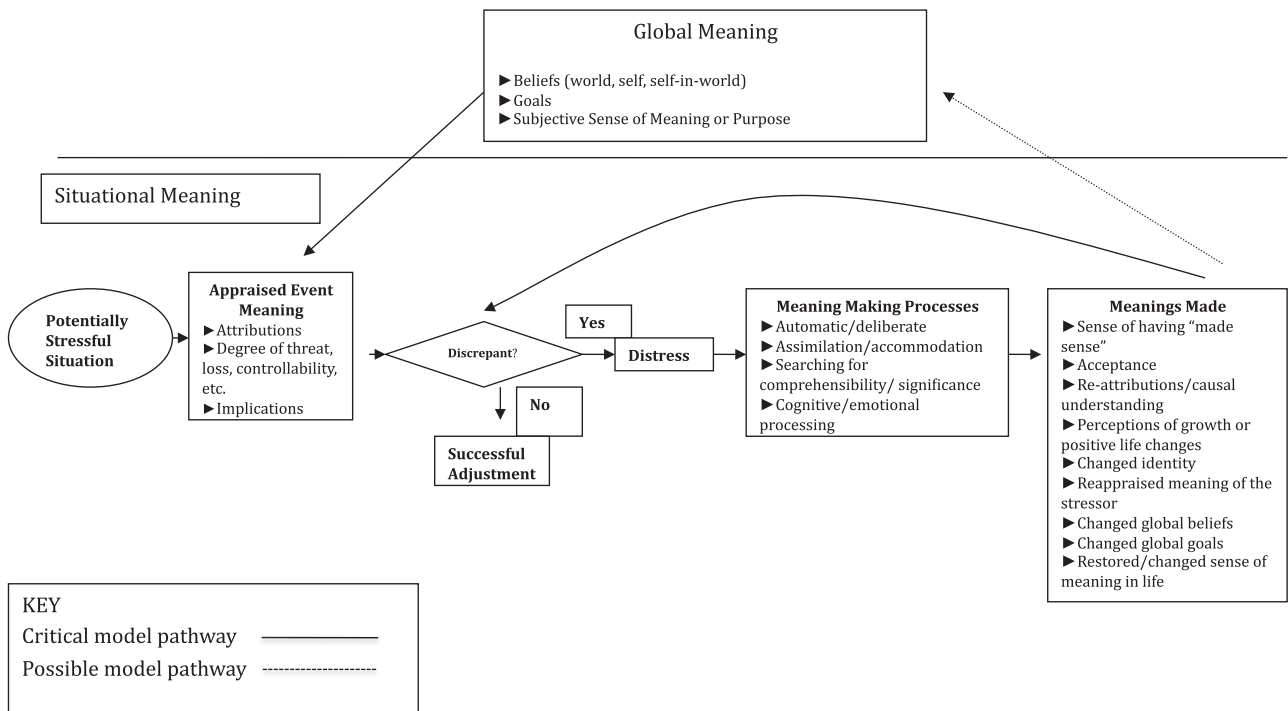


Figure 1. The meaning-making model.

crepancies between appraised and global meaning, meaning making, meanings made, and adjustment to the event (see Figure 1). Situational meaning theory has been particularly advanced by Lazarus and Folkman (e.g., 1984), Taylor (e.g., 1983), Wortman and Silver (e.g., 1987, 2001), and Janoff-Bulman (e.g., 1992). Below, the components of situational meaning are described in detail.

Appraised meaning of the event. Initial appraisals of an event's meaning involve a variety of determinations (e.g., extent to which the event is threatening and controllable, initial attributions about why the event occurred, and implications for one's future; for reviews, see Aldwin, 2007; Sweeney, 2008). Thompson and Janigian (1988) labeled this initial appraisal *implicit meaning*, noting, "Any event has an implicit meaning to the people undergoing it; there is no need to search for this type of meaning" (p. 262). Appraised meaning may be instantaneously determined but is subject to continuous revision (Bonanno & Kaltman, 1999; Janoff-Bulman, 1992; Lazarus, 1991).

Discrepancies between appraised and global meaning. After appraising an event, according to the meaning-making model, individuals determine the fit or discrepancy between that appraised meaning and their global meaning. Perceptions of discrepancy (e.g., with one's sense of the controllability or comprehensibility of the world) are thought to create the distress that drives meaning-making efforts (Carver & Scheier, 1998; Dalgleish, 2004; Horowitz, 1975; Janoff-Bulman & Frieze, 1983; Watkins, 2008).³ Further, the extent of discrepancy between the appraised meaning of the event and the individual's global meaning is thought to determine the level of distress experienced (e.g., Everly & Lating, 2004; Koss & Figueredo, 2004).

However, situational appraisals can be discrepant with more than just beliefs (Lazarus, 1991). As noted above, global meaning also consists of goals and a subjective sense of purpose. Although most meaning-making theorists emphasize violations of global beliefs as the most potent aspect of discrepancy, the violation of goals (e.g., the extent to which the event is not what the person wants to have had happen or to which other goals are rendered less attainable) and concomitant loss of sense of purpose may be even more powerful in generating distress (Austin & Vancouver, 1996; Dalgleish, 2004; Martin & Tesser, 1996; Rasmussen, Wrosch, Scheier, & Carver, 2006).

Experimental research, from early studies of cognitive dissonance (Cooper, 2007; Festinger, 1957) to more recent work on violations of expectations (e.g., Heine, Proulx, & Vohs, 2006) and implicit theories (e.g., Plaks, Grant, & Dweck, 2005), has demonstrated that discrepancies among beliefs, behavior, and expectations can generate distress and intense motivation to reduce this discrepancy. Discrepancies between global and appraised meaning are similarly hypothesized by the meaning-making model to generate distress and efforts to reduce those discrepancies through making meaning.

Meaning-making processes. The meaning-making model posits that recovering from a stressful event involves reducing the discrepancy between its appraised meaning and global beliefs and goals (Joseph & Linley, 2005). *Meaning making* refers to the processes in which people engage to reduce this discrepancy. Various categorical schemes have been proposed to describe meaning making. These schemes are useful for appreciating the nature and scope of meaning making. Because they focus on

different dimensions of meaning making, these categorical distinctions are overlapping rather than mutually exclusive. Four of the most common distinctions drawn—automatic/deliberate, assimilation/accommodation processes, searching for comprehensibility/significance, and cognitive/emotional processing—are described here.

Automatic versus deliberate processes. Meaning making has been conceptualized as both automatic and unconscious processes (e.g., Creamer, Burgess, & Pattison, 1992; Horowitz, 1986) and as effortful coping activities (e.g., Boehmer, Luszczynska, & Schwarzer, 2007; Folkman, 1997).⁴ Similarly, trauma recovery is often conceptualized as consisting of both automatic and effortful processing (e.g., Gray, Maguen, & Litz, 2007; Moulds & Bryant, 2004).

Automatic or unconscious processes have long been assumed to be implicated in discrepancy reduction (Greenberg, 1995; Horowitz, 1986). Singled out in this regard is the experiencing of intrusive thoughts about one's stressful event and avoidance of reminders, a recursive process thought to reduce discrepancy and help integrate the appraised meaning of the stressor with global meaning (Lepore, 2001). Other processes may also occur beyond deliberate efforts. For example, important life goals may shift through processes beyond intentionality, such as when previously ignored cognitions that undermine the attractiveness of blocked goals become more available along with "cognitive content that renders an initially aversive situation more acceptable" (Brandstätter, 2002, p. 383).

Deliberate meaning making refers to a broad category of efforts to deal with a situation through meaning-related strategies. A number of coping activities assessed by conventional coping instruments reflect meaning-focused coping (Park & Folkman, 1997). These efforts can be directed toward changing either appraised or global meaning. Meaning-making coping is distinguished from other coping efforts by its motive of decreasing the global-appraised meaning discrepancy that is generating distress (Folkman & Moskowitz, 2007). Folkman (1997) identified meaning-making coping as "(a) using positive reappraisal, (b) revising goals and planning goal-directed problem-focused coping, and (c) activating spiritual beliefs and experiences" (p. 1216).

Additional meaning-making coping strategies have been proposed that are not explicitly assessed on standard coping inventories, such as the COPE (Carver, Scheier, & Weintraub, 1989). For example, reducing discrepancies between situational and global meaning can occur through making downward comparisons with less fortunate others or even manufacturing hypothetical worse scenarios so that one feels relatively advantaged (Buunk & Gibbons, 2007; Taylor, Wood, & Lichtman, 1983; White & Lehman, 2005). The appraised meaning of a situation can also be modified by selectively focusing on its positive attributes and seeking to identify benefits or remind oneself of those benefits (Tennen &

³ As noted earlier, theorists vary in the extent to which they consider discrepancy as central to meaning-making phenomena.

⁴ Although coping is usually conceptualized as involving conscious, deliberate effort (Tennen, Affleck, Armeli, & Carney, 2000), some theorists have suggested that the boundaries between deliberate and more automatic types of meaning-focused coping may not be so crisply delineated (Folkman & Moskowitz, 2007).

Affleck, 2002). Finding a more acceptable reason for an event's occurrence can also transform the meaning of a situation (Kubany & Manke, 1995; Westphal & Bonanno, 2007). Meaning-focused coping efforts can also be directed toward goals (e.g., downgrading one's aspirations; Brandtstädter, 2006; Carver & Scheier, 2000).

Assimilation versus accommodation processes. If discrepancies between global and appraised meaning are to be resolved, one or the other (or both) must change (Thompson & Janigian, 1988). Meaning making that involves changing situational appraised meaning to be more consistent with existing global meaning has been termed *assimilation*, and that which involves changing global beliefs or goals has been termed *accommodation* (Joseph & Linley, 2005; Parkes, 2001). Some theorists have proposed that assimilation is more common and that global beliefs change only when individuals are confronted with events too immensely discrepant with global meaning to allow assimilation (Janoff-Bulman, 1992). However, others have proposed that accommodation might be relatively common and perhaps more advantageous, particularly when individuals face major and irreversible stressors (e.g., Brandtstädter, 2002). In such circumstances, accommodation allows reorientation to other, more promising goals and thus may promote better adjustment (Brandtstädter, 2002, 2006; Wrosch, Scheier, Carver, & Schulz, 2003). Further, Joseph and Linley (2005) argued that only accommodation can lead to the made meaning of posttraumatic growth (p. 268). Assimilation and accommodation are somewhat metaphoric processes and, to some extent, often seem to co-occur (Block, 1982).

Searching for comprehensibility versus searching for significance. In a highly influential *American Psychologist* article, Taylor (1983) wrote,

Meaning is an effort to understand the event: why it happened and what impact it has had. The search for meaning attempts to answer the question, What is the significance of the event? Meaning is exemplified by, but not exclusively determined by, the results of an attributional search that answers the question, What caused the event to happen? . . . Meaning is also reflected in the answer to the question, What does my life mean now? (p. 1161)

This distinction between searching for comprehensibility and searching for significance has been adopted by a number of researchers. Janoff-Bulman and Frantz (1997) distinguished between searching for meaning as comprehensibility (attempts to make the event make sense or "fit with a system of accepted rules or theories"; p. 91) and searching for significance (determining the "value or worth" of an event; p. 91), positing that these occur in a temporal sequence.

Cognitive versus emotional processing. Some theorists distinguished "processing" of information, following stressful events, that is more cognitive in nature, emphasizing the reworking of one's beliefs (e.g., Creamer et al., 1992), from that which is more emotional, emphasizing the experiencing and exploring of one's emotions. (e.g., Foa & Kozak, 1986; for a review, see Kennedy-Moore & Watson, 2001). Rachman (1980) introduced the term *emotional processing*, referring to "a process whereby emotional disturbances are absorbed, and decline to the extent that other experiences and behaviour can proceed without disruption" (Rachman, 2001, p. 165). Foa and her colleagues (e.g., Foa, Huppert, & Cahill, 2006; Foa & Kozak, 1985) further described emotional processing as the activation of maladaptive fear structures, along

with the acquisition of information inconsistent with some existing elements within those fear structures, to modify pathological associations (Foa et al., 2006). Emotional processing also involves exposure and habituation along with the regulation of negative affect (Ehlers & Clark, 2006) and attempts to understand what one is feeling (Stanton, Kirk, Cameron, & Danoff-Burg, 2000).

In contrast, cognitive processing emphasizes the cognitive aspects of integrating experiential data with preexisting schemas (Janoff-Bulman, 1992; Williams, Davis, & Millsap, 2002). Cognitive processing involves reappraisals and repeated comparisons between one's experience and one's existing beliefs to modify one or the other (Creswell et al., 2007; DuHamel et al., 2004; Greenberg, 1995), which is achieved through thoughtful reflection, including awareness of the emotions an event evokes and the effect it might have on one's future (Bower, Kemeny, Taylor, & Fahey, 1998).

Given these definitions, cognitive and emotional processing may differ in emphasis rather than in essential underlying mechanisms (Gray et al., 2007; Greenberg, 1995). Further, expressive writing studies have suggested that both emotional and cognitive processes are important in meaning making (e.g., Hunt, Schloss, Moonat, Poulos, & Wieland, 2007; Sloan, Marx, Epstein, & Lexington, 2007; Ullrich & Lutgendorf, 2002). Hayes et al. (2007), noting the overlap among these constructs, proposed the term *cognitive-emotional processing*.

Meanings made. Meanings made refers to the products of meaning-making processes. That is, meanings made are end results or changes derived from attempts to reduce discrepancies or violations between appraised and global meaning. Many different meanings can be made; among them are the following.

Sense of having "made sense." According to meaning-making theorists, this outcome should be among the most common (e.g., Davis, Nolen-Hoeksema, & Larson, 1998; Wortman & Silver, 1987). However, the inner experiences to which individuals are referring when reporting they feel the event now makes sense are unclear. Several studies probing participants' reports of having made sense indicate vast variations in understanding of questions regarding making sense. For example, bereaved family members referred to acceptance, growth, predictability, and other notions in describing the sense they had made (Davis et al., 1998). One participant stated "It makes sense, but I hate it. I don't understand why cancer has to be, but it just is." Another said he had made sense of his loss and continued, "The sense of his death is that there is no sense. Those things just happen" (Davis et al., 1998, p. 561). In open-ended responses, people with multiple sclerosis described their "sense made" mostly in terms of new opportunities, goals, and personal growth (Pakenham, 2007), which sounds very much like posttraumatic growth, described below. Because questions regarding having made sense are widely used to assess meaning made (e.g., see Tables 2 and 3), a better understanding of how individuals understand this concept and these types of questions is urgently needed.

Acceptance. The extent to which individuals report having achieved a sense of acceptance or of having come to terms with their event has also been considered meaning made (Evers et al., 2001). Individuals' open-ended responses regarding having made sense cited in Davis et al. (1998) and Pakenham (2007) evinced a great deal of acceptance, suggesting that acceptance is a common type of made meaning. Davis and Morgan (2008) argued that

acceptance is an understudied but potentially important response to adversity.

Reattributions and causal understanding. Several theorists have proposed that an understanding of the cause of an event is an important type of meaning made (e.g., Janoff-Bulman & Frantz, 1997; cf. Thompson & Janigian, 1988). Although attributions are assumed to occur instantaneously as part of the appraisal process (Lazarus, 1991), researchers typically assess attributions long after the event has occurred and consider them products of meaning-making attempts (e.g., Davis et al., 1998; Dollinger, 1986; see Tables 2 and 3). Such attributions may more accurately be considered reattributions, as they have likely undergone considerable alteration since the event (Westphal & Bonanno, 2007).

Perceptions of growth or positive life changes. This type of meaning made is perhaps the most commonly assessed (e.g., Abbey & Halman, 1995) and has garnered increased attention in recent years (e.g., Calhoun & Tedeschi, 2006). Many people report positive changes, such as improved relationships, enhanced personal resources and coping skills, and greater appreciation for life, as a result of highly stressful experiences (Park & Helgeson, 2006). Although such changes are usually conceptualized as personal growth, people also identify other positive changes, some of which are simply perks (e.g., diabetic children getting snacks; Helgeson, Lopez, & Mennella, 2009) or fortunate side benefits (e.g., financial gain; McMillen, Smith, & Fisher, 1997). In all of these ways, the appraised meaning of the stressor is transformed to a more positive (and presumably less discrepant) one, regardless of whether the perceived changes are veridical (Park, 2008a).

Changed identity/integration of the stressful experience into identity. Another potentially important outcome of meaning making involves *identity reconstruction*, shifts in one's personal biographical narrative as a result of experience (Gillies & Neimeyer, 2006). For example, cancer survivorship has been described as involving integration of the cancer experience into one's self-concept, along with a sense of "living through and beyond cancer," resulting in a revised identity (Zebrack, 2000). In spite of the theorized importance of identity change, very little research has focused on it as an outcome of meaning making (cf. Neimeyer, Baldwin, & Gillies, 2006).

Reappraised meaning of the stressor. Individuals often transform the appraised meaning of an event, rendering it less noxious and more consistent with their preexisting global beliefs and desires. For example, individuals may come to see an event as benign relative to that experienced by others (Taylor et al., 1983) and sometimes see themselves as relatively fortunate that the event was not worse (Thompson, 1985). They may also reappraise the nature of the event, as in reconstructing their relationship with the deceased in bereavement (Bonanno & Kaltman, 1999), or reevaluate the implications of the event in more positive ways (Resick et al., 2008).

Changed global beliefs. In addition to resolving discrepancies by changing the appraised meaning of stressors, individuals can make changes in their global meaning. For example, global belief changes may involve coming to see life as more fragile or changing one's view of God as being less powerful or benevolent than previously thought (Epstein, 1991; Park, 2005a).

Changed global goals. Meaning making can also result in identifying goals that are not attainable and abandoning them or substituting alternative goals (Martin & Tesser, 1996; Thompson

& Janigian, 1988). For example, couples going through fertility treatment may decide that having a biological child is less important than rearing a child and shift their efforts toward adoption (Clark, Henry, & Taylor, 1991). There are many instances of people experiencing great traumas or losses, such as through violence or war, and going on to devote their lives to a related cause (Armour, 2003; Grossman, Sorsoli, & Kia-Keating, 2006).

Restored or changed sense of meaning in life. Through meaning making, people may experience reductions or increases in their sense of meaning in life (Janoff-Bulman & Frantz, 1997). Few studies have focused on changes in or restoration of a sense of meaning in life as an outcome of meaning making, but such restoration may be an important outcome of the meaning-making process (Jim, Richardson, Golden-Kreutz, & Andersen, 2006; Park, Malone, Suresh, Bliss, & Rosen, 2008).

Meaning making and adjustment. Meaning making is widely (but not universally) considered essential for adjusting to stressful events (e.g., Gillies & Neimeyer, 2006). However, many theorists have proposed that meaning-making attempts should lead to better adjustment only to the extent that individuals achieve some product (i.e., meaning made) through the process (Park & Folkman, 1997; Segerstrom, Stanton, Alden, & Shortridge, 2003). That is, distress is mediated through discrepancy, and reductions in distress are dependent on reductions in discrepancy. Thus, attempting to make meaning is not necessarily linked with adjustment but may merely signal ongoing discrepancy between an individual's global meaning and an event's appraised meaning. Until meaning-making attempts result in some change or product that reduces the discrepancy between appraised and global meaning, they may be positively related to distress; over time, meanings made (and concomitant decreases in discrepancies) should be related to better adjustment. Meaning-making attempts are expected to decrease as meaning is made, and continued attempts to make meaning without some product (meaning made) have been described as a type of rumination associated with increased distress (Nolen-Hoeksema & Larson, 1999). In the context of bereavement, Michael and Snyder (2005) argued that cognitive processing involves "getting closer to finding a solution that lessens [negative] feelings" by focusing on reducing "discrepancies between cognitive models of the world pre-death and new information derived from the experience" (p. 437) and that rumination involves "repetitive thoughts focused on negative emotions and what these emotions mean without getting any closer to finding a solution" (p. 437). Others have defined rumination more broadly, referring to repeated thoughts and images in attempting to reach a blocked goal (Martin & Tesser, 1996). In fact, the widely used Ruminative Responses Scale (Nolen-Hoeksema & Morrow, 1991) consists of two factors: depressive brooding and reflection (Treynor, Gonzalez, & Nolen-Hoeksema, 2003).

Not everyone agrees that meaning making is critical in adjusting to stressful events. Several researchers have argued that those who do not attempt to make meaning are as well off, or better off, than those who do (e.g., Bonanno, Papa, Lalande, Zhang, & Noll, 2005). Wortman and Silver (2001) described the importance of grief work, a variant of meaning making, as a "myth" (p. 411). They noted that there is little evidence that grief work is related to better adjustment to loss (see also Stroebe, Schut, & Stroebe, 2005). Similarly, Bonanno et al. (2005) argued that meaning-

making efforts represent unproductive rumination reflecting distress rather than adaptive recovery processes.

Despite these challenges, many theorists have elaborated elements of meaning making using some variant of the model depicted in Figure 1, and researchers have proceeded to examine issues of meaning making in individuals dealing with a variety of stressful events. Much of this research is in the areas of bereavement and cancer; some has focused on various other health threats and stressors (see Tables 1, 2, and 3). However, little effort has been expended in integrating this research or in critically evaluating the empirical support for the general meaning-making model.

Research Evidence for the Meaning-Making Model

The basic meaning-making model has been described by numerous authors in compelling and elegant language (e.g., Janoff-Bulman, 1992) and is widely accepted among theorists, researchers, and clinicians. Unfortunately, empirical work has not matched the richness or complexity of theories regarding meaning and meaning making, perhaps partly because the abstract and complex nature of the theoretical models renders them more amenable to hypothesis generation than to hypothesis testing. If the abstract and metaphoric concepts of the meaning-making model are to be tested, they must be translated into operational definitions that allow empirical study. Invariably, these operational definitions fall short of capturing the depth and breadth of the constructs and processes themselves (Davis et al., 2000; Thompson & Janigian, 1988). This section describes methodological considerations and limitations in the existing body of literature on meaning making and then reviews the evidence regarding the meaning-making model.

Considerations in Research on Meaning Making

Failure to comprehensively examine meaning making. Most studies have focused on only a part of meaning-making, precluding a full test of the model. For example, researchers often focus on current global beliefs but fail to assess, even retrospectively, what those beliefs may have been pretrauma (e.g., Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). Many researchers documented the effects of individuals' attempts to make meaning on adjustment without assessing whether those attempts resulted in any meanings made (see all studies in Table 1). This is particularly problematic for drawing conclusions.

When evaluating evidence regarding the meaning-making model, it is essential to know which elements of the model were examined. Tables 1–3 highlight these elements in relevant studies.⁵ Table 1 contains studies that explicitly focused on meaning-making processes and adjustment but that did not assess meanings made. Studies that failed to assess meanings made cannot separate the effects of successful meaning making from maladaptive rumination and continued fruitless searching. Other studies examined meanings made and adjustment but not meaning making per se (see Table 2).⁶ Table 3 presents studies that explicitly assessed both meaning making and meaning made.

Problematic assessment time frames. Meaning making is considered a dynamic process that unfolds over time, yet the majority of studies have used cross-sectional designs; even the most sophisticated studies measured only a few time periods and

almost always did so retrospectively (cf. Davis et al., 1998; Mancini & Bonanno, 2008). Assessing participants only once precludes assessment of changes in meaning over time and introduces hopeless confounds (e.g., searching for meaning and distress; see Tables 1 and 3), and assessing participants after the fact precludes direct examination of important aspects of the model (e.g., pre-to-post changes in global meaning). Also problematic is that theorists tend to be vague regarding the time course along which these processes occur, which makes it difficult to determine how well studies have captured the appropriate time period. For example, Janoff-Bulman and Frantz (1997) suggested that initial efforts at making meaning focus on reestablishing a sense of comprehensibility of the world and “life in general” and later efforts shift to questions of personal significance and value, yet they did not specify any actual time period.

Lack of standardized language and use of imprecise language. Terminology across studies is inconsistent (Davis et al., 2000), making the summarizing of literature difficult (White, 2004). Examples include a series of studies by Bower et al. (1998; Bower, Kemeny, Taylor, & Fahey, 2003), in which the construct that most researchers refer to as growth or benefits was labeled “discovering positive meaning,” and a series of studies by Neimeyer and his colleagues (e.g., Currier, Holland, & Neimeyer, 2006) focusing on “sensemaking,” described as a process but clearly measuring, instead, products of a search (e.g., “have made sense”; see Table 2).

Individuals' lack of awareness of global and situational meaning and of meaning making. Meaning-making theories typically describe meaning and meaning-making processes as existing, at least to some extent, below awareness, although it has been argued that highly stressful events make people aware of their meaning systems (e.g., Janoff-Bulman & Frantz, 1997). Even so, it remains to be demonstrated that individuals are aware of (and therefore capable of reporting on) their efforts to reduce violations by assimilating or accommodating their appraised and global meaning. Further, even if individuals can accurately report the coping that they employed that might be considered meaning-making efforts, those individuals may not recognize why they engaged in those behaviors. For example, individuals might report having talked with others about their stressful event but may be unaware of the reinterpretations provided by their social network.

(text continues on page 267)

⁵ These tables include studies in which quantitative methods were used to explicitly examine meaning-making processes and adjustment within a meaning-making framework. They do not include intervention studies, given that the focus of this review is the accuracy of the meaning-making model in characterizing adjustment to stressful events. Intervention studies are discussed where relevant, as in the section on expressive writing.

⁶ The exception to this lack of attention to products of meaning making and links to adjustment is the specific made meaning of posttraumatic or stress-related growth, also known as perceived benefits, benefit finding, or adversarial growth (see Park, 2008a). There is a large literature on this topic, which has itself been the focus of several recent reviews and meta-analyses (Helgeson et al., 2006). Few of these studies of growth have been cast within the meaning-making model. Therefore, studies that have focused solely on posttraumatic growth are not included in Tables 2 and 3. However, studies that examined growth along with other aspects of meaning making or meanings made are included in Tables 2 and 3.

Table 1
Studies Explicitly Assessing Attempts at Meaning Making and Adjustment (Without Assessing Meaning Made)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Findings regarding adjustment
Boehmer et al. (2007)	175 patients with gastrointestinal, colorectal, or lung cancer; longitudinal (1 and 6 months postsurgery)	Cognitive strategies used to reinterpret the meaning of a situation	Meaning-focused coping (combined scores of Brief COPE subscales of Positive Reframing and Acceptance)	Meaning-focused coping predicted better subsequent emotional and social (but not physical) well-being.
Bonanno et al. (2005)	68 U.S. participants (45 conjugally bereaved, 23 parentally bereaved) and 74 People's Republic of China participants (45 conjugally bereaved, 29 parentally bereaved); longitudinal (4 and 18 months postloss)	Grief processing (working through the loss, including thinking about and expressing the thoughts, memories, and emotions associated with the loss)	Summary score of scale assessing frequency of thinking about the deceased, searching for meaning, having positive memories of the deceased, talking about the deceased, and expressing feelings about the deceased	Time 1 grief processing predicted poorer Time 2 adjustment for U.S. participants but was unrelated to adjustment for participants in China.
Christie et al. (2009)	57 patients with prostate cancer; longitudinal (prior to treatment and 1 and 6 months posttreatment)	Thinking and talking about a stressful situation allows people to integrate a stressor into their lives, so that its negative impact decreases.	Decline in intrusive thoughts over time is the indicator that cognitive processing has occurred.	Social discussions were related to lower negative affect (but unrelated to positive affect), an effect mediated by change scores in intrusive thoughts.
Cleiren (1993)	309 (278 at follow-up) family members bereaved (by suicide, traffic fatalities, or illness); longitudinal (4 and 14 months postloss)	Not defined	How often are you occupied with questions such as "Why did this have to happen to me?" or "What is the meaning of this?" (0–3)	Meaning making was related to higher levels of distress (e.g., intrusions, avoidance, depression) at both times, apparently more strongly at follow-up.
Creamer et al. (1992)	158 survivors of a mass office building shooting; longitudinal (4, 8, and 14 months postshooting)	New information inherent in the traumatic experience must be processed until it can be brought into accord with preexisting inner models. In addition, modification of preexisting schemas may take place to accommodate the new information.	Intrusions subscale of the IES (e.g., "I thought about it when I didn't mean to")	A high level of intrusions, although associated with high distress symptom levels cross-sectionally, was associated with reduced symptom levels at subsequent periods.
Danhauer et al. (2005)	94 cognitively intact older adults in nursing homes; cross-sectional	Meaning-based coping strategies through which individuals cognitively change their interpretations of events or standards for comparison	Three measures: COPE Religious Coping and Positive Reappraisal subscales (assessed dispositionally) and perceived recent uplifts	All 3 measures were unrelated to physical health. Controlling for demographics and health, no meaning making was related to depression or negative affect. Only uplifts predicted positive affect.
DuHamel et al. (2004)	91 mothers of children undergoing bone marrow transplant; longitudinal (peritransplant and 3 months later)	Integration of the event into the worldview of the individual through accommodation and/or assimilation (e.g., she might see the event as a call to alter her priorities and focus on her family and social relationships)	Intrusions/avoidance (IES)	Time 1 meaning making was related to more distress at both Time 1 and Time 2.

(table continues)

Table 1 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Findings regarding adjustment
Farran et al. (1997)	215 caregivers of patients with Alzheimer's; cross-sectional	Transformative process based on existential principles; people create meaning by transforming how they think and feel about a situation.	Finding Meaning Through Caregiving Scale: Subscales of Provisional Meaning (focusing on small, day-to-day positives) and Ultimate Meaning (essentially religious coping)	Provisional and ultimate meaning making were related to less depression. Provisional meaning making was also related to less role strain.
Gignac & Gottlieb (1996)	51 caregivers of persons with dementia; cross-sectional	Cognitive efforts to manage the meaning of the situation by adopting a cognitive perspective that minimizes care recipients' control for the situation	Interviews were coded for coping; one type was "meaning making," which included making causal attributions, "searching for meaning," "trying to understand care recipient," and "normalizing the experience/one's feelings"	Meaning making coping was related to more physical problems, unrelated to distress.
Graham et al. (2008)	102 patients with chronic pain; longitudinal (approximately 2 months follow-up)	A process that involves changing appraisals of specific situations or global beliefs about the world or self	Coded narratives for meaning making (speculation about circumstances related to pain and anger, the degree to which the patient showed insight and understanding). This approach appears to assess a combination of meaning making and meaning made.	Meaning making mediated the effectiveness of expressive writing on depression but not pain control or severity.
Harvey et al. (1991)	25 women who had experienced nonconsensual sexual activity on average 18 years earlier; cross-sectional	Working at comprehensive account making, along with confiding that proves useful to the survivor, should help recast the survivor's sense of vulnerability within a structure of meaning about the trauma, especially a structure that provides a sense of understanding of why the trauma occurred, its long-term impacts, and its possible value in the survivor's life (p. 520).	Open-ended questionnaire items coded for extent of explicit mention of account-making activity, including formal therapy, helpful discussion of the event with others, diary/journal recording, periods of private reflection about the event and its implications (scale of 0–10)	Account making was negatively correlated with negative affect and positively correlated with successful coping (as coded by researchers) but was not related to negative impact of assault on close relationships.
Hayes et al. (2005)	29 clients being treated for diagnosed depression; longitudinal (6 months of therapy and 3 monthly follow-ups)	Processing was hypothesized to be a central variable of change across theoretical orientations in psychotherapy; exposure-based interventions are a potent way to facilitate shifts in perspectives and emotional responding (p. 113).	Narratives coded for processing (exploring and questioning issues and material related to depression, with some insight or perspective shift; significant insight or a perspective shift often has emotional and behavioral manifestations). Unclear to what extent coding captured processing vs. products of that processing.	Higher levels of meaning making (processing) were related to subsequent reductions in depression and increases in growth and self-esteem.

(table continues)

Table 1 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Findings regarding adjustment
Lepore & Helgeson (1998)	178 survivors of prostate cancer; cross-sectional	Cognitive processing (mental activities that help people to interpret traumatic events in personally meaningful terms, integrate threatening or confusing aspects of the experience into a coherent and nonthreatening conceptual framework, and reach a state of emotional acceptance)	Intrusive Thoughts (Intrusions scale of the IES)	Negative relation between intrusive thoughts and mental health, especially for those constrained in discussing their cancer.
Lepore et al. (1996)	171 bereaved mothers of SIDS infants (same as others in Table 2); longitudinal (3 weeks, 3 months, 18 months [<i>n</i> = 98] postloss)	Cognitive processing of the trauma-related information until it can be incorporated into preexisting inner models or until the preexistent schemas can be modified to accommodate the new information, can take the form of exposure to aversive thoughts, memories, and images (p. 272)	Intrusive thoughts (Intrusions subscale of the IES)	Controlling for initial level of distress, Time 1 intrusive thoughts was positively related to depressive symptoms over time among socially constrained mothers. However, higher levels of Time 1 intrusive thoughts predicted decreased Time 3 depressive symptoms among mothers with unconstrained social relationships.
Nolen-Hoeksema et al. (1997)	30 bereaved partners of men who died of AIDS; longitudinal over 1 year	“Attempts to understand the loss and his own reaction to the loss” (p. 857)	Postbereavement narratives coded for <i>self-analysis</i> , a “tendency to analyze his personality and how he was handling the loss, assess what the relationship with the partner had meant for the participant’s life, acknowledge that grieving is a process and that recovery takes a long time, and search for meaning in the loss”	Bereavement-related self-analysis predicted increased depression and reduced positive morale 1 year later, even controlling for initial levels, but also related to greater positive morale 1 month after the loss and fewer intrusive thoughts about the loss 12 months later.
Park et al. (2001)	82 HIV+ and 162 HIV- gay men who were caregivers and 61 HIV+ gay men who were not caregivers; longitudinal (bimonthly over 2 years)	Changing the appraised meaning of the situation to be more consistent with the person’s beliefs and goals	Positive Reappraisal subscale from the Ways of Coping Questionnaire	Meaning making was cross-sectionally and longitudinally related to less depressed mood, an effect not moderated by the controllability of the stressor.
Roberts et al. (2006)	89 men with prostate cancer shortly after treatment and 3 months later; longitudinal	Cognitive processing: Confronting, contemplating, and reevaluating a stressful event may facilitate adjustment by helping people to either assimilate the event into their preexisting mental models or change their mental models to accommodate the event.	Intrusive thoughts and searching for meaning (combined responses to questions on frequency of “searching to make sense of your illness” and “wondering why you got cancer or asking, ‘Why me?’”)	Both intrusions and searching for meaning were related to poorer mental health and physical health cross-sectionally and longitudinally.

(table continues)

Table 1 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Findings regarding adjustment
Salsman et al. (2009)	55 posttreatment survivors of colorectal cancer (mean 13 months postdiagnosis); longitudinal (3-month follow-up)	Cognitive processing is a means of facilitating schema revision or trauma reappraisal. "Repeated confrontation with memories of the trauma may be useful in facilitating cognitive processing and promoting healthy adaptation" (p. 31).	IES Intrusions subscale and 4-item Cognitive Rehearsal subscale from the Rumination subscale (e.g., "When I have a problem, I tend to think of it a lot of the time")	Baseline IES Intrusions predicted PTSD symptoms at follow up; baseline rehearsal predicted follow-up posttraumatic growth (marginally significant).
Stanton, Danoff-Burg, et al. (2000)	92 patients with breast cancer; longitudinal (shortly after treatment and 3 months later)	Working through emotions attendant on stressful or traumatic experiences	COPE subscales of Emotional Processing and Positive Reappraisal	Longitudinally, emotional processing was positively related to 1 of 5 outcomes (increased distress); positive reappraisal was related to none.
Stein et al. (2009)	111 college students reporting on a significant loss (about half were deaths) that they had experienced at some point; cross-sectional	Religious and benefit-finding forms of coping help adults make sense of personal loss, and personal strivings provide direction and meaning in everyday life.	Extent to which loss impacts strivings and motivates individuals to achieve their strivings; Religious Coping subscales from the RCOPE, stress-related growth	Extent to which loss was impeding strivings and use of punishing God reappraisals was related to higher depression and loneliness; stress-related growth was also inversely related to loneliness.
Stroebe & Stroebe (1991)	30 men and 30 women conjugally bereaved 4-7 months prior; longitudinal (follow-up 18 months later)	Working through grief	Six-item scale assessed suppression (vs. confrontation) of grief (e.g., "I avoid anything that would be too painful a reminder")	Confronting grief related to decreased depression scores at follow-up for men only.
Tait & Silver (1989)	45 adults reporting on their most stressful event, which had occurred an average of 22 years prior; cross-sectional	Cognitive and emotional search for a meaningful and acceptable interpretation of event	Ongoing involvement (frequency of searching for meaning in the event, need to discuss the event, and need to discuss responses to event)	Ongoing involvement was negatively related to self-assessed recovery and current life satisfaction, positively related to rumination.
Tomich & Helgeson (2002)	164 women diagnosed with breast cancer 5.5 years earlier and 164 age-matched control women reporting on the most stressful event that occurred about 5 years prior; cross-sectional	Reflect on the meaning of the experience to change one's life schemes or one's perception of the event to assimilate or accommodate	Combined scores on 2 questions: "In the past month, how much . . . energy have you spent trying to figure out why [the event] happened to you?" and "Have you found yourself searching to make some sense of or find meaning in your experience?"	Survivors who were still searching for meaning had poorer mental functioning, less positive affect, and more negative affect. Healthy controls who were still searching for meaning had poorer mental functioning and more negative affect. Searching for meaning was unrelated to physical functioning in either group.
Williams et al. (2002)	229 college students reporting on various traumas; cross-sectional	Find acceptable meaning in the trauma, on both an emotional and a cognitive level, and focus on different types of mental evidence to support these more positive meanings	Cognitive Processing of Trauma Scale (subscales of Denial, Positive Cognitive Restructuring, Resolution, Regret, Downward Comparison)	Denial and regret were related to higher levels of intrusions and avoidance, lower levels of growth; positive cognitive restructuring, resolution, and downward comparison were related to higher levels of growth, lower levels of intrusions and avoidance.

(table continues)

Table 1 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Findings regarding adjustment
Zakowski et al. (2001)	104 women with a family history of breast cancer; cross-sectional	Automatic intrusive cognitions reflect an automatic processing strategy that may facilitate integration of global and situational meaning, especially if accompanied by deliberate processing.	IES and Emotional Expressivity Scale (tendency to express emotions)	IES was related to higher levels of distress; emotional expressivity was not. However, emotional expressivity moderated (lessened) impact of events on distress.

Note. IES = Impact of Event Scale; SIDS = sudden infant death syndrome; PTSD = posttraumatic stress disorder.

Operational definitions. Problematic translation of rich theoretical conceptualizations to operational definitions is perhaps the biggest limitation of current meaning research. Not only may individuals lack awareness of or ability to report on the inner processes assumed to be occurring, but most studies of processes related to meaning making assessed a limited scope (i.e., only part of what might constitute meaning making). For example, some examined meaning-making coping using subscales from broad-spectrum coping measures such as the COPE (Carver et al., 1989; e.g., reinterpretation), and others assessed only emotional processing (focusing on understanding one’s feelings) without including cognitive processes (e.g., Stanton, Danoff-Burg, & Huggins, 2002).

Tables 1 and 3 illustrate the varied operational definitions of meaning making that have been used. Many studies assessed meaning making with very simple questions, such as “How often have you found yourself searching to make sense of your illness?” or “How often have you found yourself wondering why you got cancer or asking, ‘Why Me?’” (e.g., Roberts, Lepore, & Helgeson, 2006). Although they perhaps have some face validity, such questions have been shown to have very different meanings to different people (Davis et al., 1998). For example, one study asked mothers who had been sexually abused as children to describe the meaning they had made or found. Results were diverse and alarmingly misaligned with typical research descriptions of meaning made. Among the predominant answers were shattered assumptions about the world and the self. Other meanings made involved negative changes in themselves (e.g., damaged trust), attributions, positive changes in self-views, and positive outcomes of their coping efforts (Wright, Crawford, & Sebastian, 2007). In a study of mothers of children undergoing bone marrow transplantation, the items “searching for meaning” and “searching for positive meaning” were not correlated, nor were the items “found meaning” and “found positive meaning” (Wu et al., 2008).

The classification of intrusive thoughts vis-à-vis meaning making is also problematic. Sometimes used as a measure of distress (e.g., Pruitt & Zoellner, 2008), intrusions (or the entire Impact of Event Scale [IES]; Horowitz, Wilner, & Alvarez, 1979) have also been used as an index of meaning making (i.e., cognitive processing; e.g., DuHamel et al., 2004; Lepore & Helgeson, 1998; Lutgendorf & Antoni, 1999; Salsman, Segerstrom, Brechting, Carlson, & Andrykowski, 2009; Zakowski, Valdimarsdottir, & Bovbjerg, 2001). Creamer et al. (1992) argued that intrusions are better seen as an index of cognitive processing (see also Horowitz, 1986, 1992), but trauma researchers regard intrusive thoughts as a cardinal symptom of posttraumatic stress disorder (PTSD; Beck et al., 2008; Dalgleish, 2004).

Empirical Evidence Regarding the Meaning-Making Model

This section addresses essential questions regarding specific aspects of the meaning-making model on the basis of available empirical research. Because the contours of research examining meaning making are nebulous, an exhaustive review of all relevant literature (Cooper, 2003) is impossible. For example, one type of meaning making involves positive reappraisal or reinterpretation; studies on that topic alone (as part of coping) number in the thousands (Aldwin, 2007; Folkman & Moskowitz, 2000). Therefore, (text continues on page 272)

Table 2
Details of Studies Assessing Meanings Made and Adjustment (Without Assessing Meaning Making Attempts)

Study	Sample/design	Conceptual definition of meanings made	Operational definition of meaning made	Findings regarding adjustment
Affleck et al. (1985)	42 mothers of infants in neonatal intensive care; cross-sectional	Accommodations of the self to the environment, successfully ascribing a purpose to one's misfortune, in an attempt to rebuild shattered assumptions	Having an answer to the question "Why me? Why am I the one whose child had to be hospitalized in an intensive care unit?"	Having made meaning was related to more positive mood and less avoidance but unrelated to intrusive thoughts.
Currier et al. (2006)	1,056 bereaved undergraduates (loss of loved one in past 2 years); cross-sectional	Restoration of meaning (entails adapting one's personal world of meaning to make sense of the loss)	Single question, "How much sense would you say you have made of the loss?" (1 = <i>no sense</i> to 4 = <i>a good deal of sense</i>)	Meaning made (having made sense) was inversely related to complicated grief.
Dirksen (1995)	31 long-term survivors of melanoma; cross-sectional	Causal attributions to comprehend why an event occurred and the personal significance of that event (<i>search for meaning</i> was used to refer to meaning made)	Search for Meaning Scale: Summary score for attribution items (e.g., "I believe there is a specific reason as to why the cancer occurred") and impact of diagnosis on life (e.g., "I have found that due to the cancer experience my priorities in life have changed"); all rated on 1–5 scale	Score on the Search for Meaning Scale was unrelated to well-being (Index of Well-Being Scale).
Draucker (1989)	142 adult survivors of incest; cross-sectional	The adaptation process involves searching for meaning in the experience, an "effort to understand the event: why it happened and what impact it has had." A "successful search includes both subjective satisfaction with the meaning found and the ability to then put the search aside."	Combined items: how successful they had been at finding meaning or discovering a way to make sense of their incest and how frequently they continued to search for meaning (not clear how these items were combined)	Successful search for meaning was related to less depression and social impairment.
Holland et al. (2006)	Same sample as Currier et al. (2006)	Products of meaning reconstruction (making sense, benefit finding)	Making sense: "How much sense would you say you have made of the loss?" (<i>no sense</i> to <i>a good deal of sense</i>). Benefit finding: "Despite your loss, have you been able to find any benefit from your experience of the loss?" (<i>no benefit</i> to <i>great benefit</i>).	Having made sense was related to less complicated grief, but benefit finding was unrelated. However, the interaction of benefit finding and having made sense was related to less complicated grief, such that lowest grief resulted from high sense making but low benefits.
Keese et al. (2008)	156 bereaved parents (mean time since loss = 6 years, mean age of child = 17 years); cross-sectional	The successful integration of "a seemingly incomprehensible loss into the pre-loss meaning structures that gave their life stories an overarching sense of purpose, predictability, and order" (p. 1147)	Sense making: "Have there been any ways in which you have been able to make sense of the loss of your child?" Benefit finding: "Despite the loss, have you been able to find any benefit from your experience of the loss?"	Made meaning of sense making and, to a lesser extent, benefit finding were related to lower distress and less severe grief symptoms.
Koss & Figueredo (2004)	59 survivors of sexual assault; longitudinal (4 assessments 4–24 months postassault)	<i>Cognitive processing</i> , a set of constructs including attributions and beliefs that stimulate the psychosocial distress that characterizes the long-term aftermath of rape (p. 1063)	Changes over time in global beliefs (combined scale scores from McPearl Belief Scale) and attributions of self-blame for the sexual assault	Shifts toward more positive global beliefs and appraised meaning (less self-blame) were related to better adjustment (PTSD symptoms, psychopathology, social adjustment).

(table continues)

Table 2 (continued)

Study	Sample/design	Conceptual definition of meanings made	Operational definition of meaning made	Findings regarding adjustment
McLean & Pratt (2006)	At Time 1, 896 high school students (mean age = 17 years); longitudinal (2- and 6-year follow-ups; <i>n</i> at Time 3 = 287)	The report of lessons or insights. Lessons are specific meanings that are often behaviorally driven and are applied only to similar kinds of events in parallel situations. Insights are broader meanings that extend to other parts of the self beyond those indicated in the narrated event.	Participants wrote narratives regarding an important turning point, which were coded as 0 (no meaning reported); 1 (a lesson reported, defined as meanings that were often behavioral and did not extend the meaning beyond the original recalled event); 2 (vague meanings more sophisticated than lessons but not as explicit as insights); or 3 (insights, meanings that extend beyond the specific event to explicit transformations in one's understanding of oneself, the world, or relationships).	Meaning made was positively related to subsequent optimism, generativity, and identity development.
Moore et al. (2006)	123 patients with extremity venous thrombosis (EVT) within a month of diagnosis; cross-sectional	Finding meaning involves 2 routes, identifying a cause or explanation (not really possible with EVT) and making positive appraisals about the impact of the threat. Thus a person may engage in cognitive appraisals of the personal implications of the event and, as a result, may restructure and reprioritize certain aspects of his or her life.	Extent to which patients had shifted their perspectives and priorities as a result of EVT. Sum of 3 questions about "searching for meaning" (e.g., "Having a thrombosis has made me think more about things that are important to me"; $\alpha = .85$) Actually measures meaning made.	Searching for meaning (i.e., found meaning) was related to more anxiety and thrombosis worries and to lower mental-health-related quality of life but unrelated to depression.
Neimeyer et al. (2006)	Same sample as Currier et al. (2006)	Products of meaning reconstruction (making sense, benefit finding, reorganizing identity)	Sense making: "How much sense would you say you have made of the loss?" (1 = <i>no sense</i> to 4 = <i>a good deal of sense</i>). Benefit finding: "Despite the loss, have you been able to find any benefit from your experience of the loss?" (1 = <i>no benefit</i> to 5 = <i>great benefit</i>). Identity change: "Do you feel that you are different, or that your sense of identity has changed, as a result of this loss?" (1 = <i>no different</i> to 5 = <i>very different</i>).	Amount of identity reconstruction was positively related to separation distress and traumatic distress. Benefit finding and sense making were associated with less separation distress and traumatic distress.
Pakenham (2007)	408 persons with MS (same as Pakenham, 2008b); longitudinal (over 1 year)	Sense making: Rebuilding one's assumptive world in the face of significant adversity; meaning as comprehensibility (sense making)	"People make sense of their having an illness in different ways. For example, some have made sense of their having an illness by believing that it is fate or that their illness is like a 'wake-up call' to change their life style. Do you feel that you have been able to make sense of, or comprehend, your having MS? Yes/No." If the respondents answered yes to this question, they were asked to "explain what sense you have made of your having MS." Items were coded, factor analyzed, and turned into the Sense Making Scale, which was given at Time 2 and had six subscales.	Various dimensions of sense making at Time 2 predicted Time 2 adjustment in regressions, controlling for Time 1 adjustment, illness factors, religiousness, and demographics. All Sense Making Scale factors except causal attributions predicted one or more dependent variables. Redefined life purpose was related to higher life satisfaction and positive states of mind (PSOM) and lower depression. Acceptance was associated with higher PSOM and lower depression and anxiety. Spiritual perspective was related to better caregiver adjustment ratings of the care receiver. However, changed values and priorities and luck were related to lower PSOM, and changed values and priorities was also related to higher depression and anxiety.

(table continues)

Table 2 (continued)

Study	Sample/design	Conceptual definition of meanings made	Operational definition of meaning made	Findings regarding adjustment
Pakenham (2008a)	232 caregivers of persons with MS (same sample as Pakenham, 2008c); longitudinal (but analyses were Time 2 cross-sectional)	Meaning reconstruction: Making sense of adversity is achieved through developing new worldviews or via modifying existing assumptive schemas or worldviews.	Same as Pakenham (2008c). Analyses were conducted with the specific categories as predictors of adjustment. These six categories were: catalyst for change, relationship ties, incomprehensible, causal attribution, spiritual perspectives, and acceptance.	Viewing caregiving as a catalyst for change and as incomprehensible were related to more distress, and acceptance and relationship ties were related to less distress. Spiritual perspective and causal attribution were minimally related to distress.
Pakenham (2008b)	408 persons with MS (diagnosed approximately 10 years prior); cross-sectional	Sense making refers to “the extent to which people have managed to integrate or reconcile their appraised (or reappraised) meaning of the event with their global meaning”	Two questions: “Do you feel that you have been able to make sense of or comprehend your having MS? Yes/No.” If respondents answered yes, they were asked to explain “what sense you have made of your having MS” (an open-ended question). Number of sense-making categories was used in analyses.	Sense making was correlated with lower disability and disease severity and, after controlling for illness and religious-spiritual belief, predicted lower levels of depression and higher levels of positive states of mind and life satisfaction.
Pakenham (2008c)	232 caregivers of persons with MS; cross-sectional	Meaning reconstruction: Making sense of adversity is achieved through developing new worldviews or via modifying existing assumptive schemas or worldviews.	Two questions: “Do you feel that you have been able to make sense of or comprehend . . . having MS and your caring for and/ or supporting him/her? (Yes/no).” If respondents answered yes, they were asked to “explain what sense you have made of [care recipient’s name] having MS and your caring for and/or supporting him/her.” Open-ended responses were coded and analyses were conducted with number of sense-making categories.	Meaning made (number of sense-making categories) was related to higher levels of life satisfaction but unrelated to anxiety, depression, or positive states of mind.
Pakenham et al. (2004)	47 mothers and 12 fathers of a child with Asperger syndrome; cross-sectional	Meaning making (development of an understanding of the event and its implications by first trying to make sense of the situation; sense making) and then identifying benefits (finding some benefit in the experience for one’s life)	Two items assessed having made sense: “Do you feel that you have been able to make sense of (develop an understanding of) having a child with Asperger syndrome? Yes/No.” If the respondents answered yes, they were asked to “explain how you have made sense of (developed an understanding of) having a child with Asperger syndrome.” Open-ended responses were coded and analyses were conducted with total number of categories identified. Two items assessed benefit finding: “Have you found any benefits from having a child with Asperger syndrome?” If respondents answered yes, they were asked to “please describe the benefits you have found from having a child with Asperger syndrome.”	Neither type of meaning made (made sense, found benefits) was related to adjustment (perceived health, distress, social adjustment).
Rini et al. (2004)	100 mothers of children undergoing bone marrow transplantation; longitudinal (over 1 year)	Basic beliefs can be challenged by severe stressors, and adjustment to such events involves rebuilding basic beliefs.	Changes in 4 subscales of Janoff-Bulman’s World Assumptions Scale (Benevolence, Contingency, Chance, Self-Worth)	Mothers whose belief in chance decreased in the year following bone marrow transplantation showed improvement in physical functioning but not mental functioning. No effects for changes in the other 3 beliefs.

(table continues)

Table 2 (continued)

Study	Sample/design	Conceptual definition of meanings made	Operational definition of meaning made	Findings regarding adjustment
Russell et al. (2006)	146 patients with MS; cross-sectional	Prioritizing values and goals, seeking answers to existential questions, and reflecting upon the story of one's life	Answers to 3 questions considered together and coded as having made meaning (high, moderate, low). Question 32: "What is your belief about why MS came into your life when it did? How do you make sense of the questions: 'Why me?' 'Why now?' 'Why MS?'" Question 47: "How have you tried to make meaning out of your experience of having MS?" (e.g., religion/spirituality, talking with friends). Question 48: "What has been most helpful to you in making meaning out of your experience of having MS?"	Those with high and moderate levels of meaning made had higher levels of life satisfaction and quality of life than those who did not have made meaning.
Samios et al. (2008)	218 parents of children with Asperger syndrome; longitudinal over 1 year	Developing explanations for adverse circumstances and events; achieved through developing new worldviews or by modifying existing worldviews	Sense-Making Scale for Parents of Children with Asperger Syndrome. Six subscales: Spiritual Sense Making, Causal Attributions, Changed Perspective, Reframing, Luck/Fate, and Identification.	In cross-sectional analyses, controlling for demographics, spiritual perspective and causal attributions both positively predicted anxiety. Identification positively predicted depression. Reframing negatively predicted depression and anxiety and positively predicted positive affect. Luck/fate positively predicted anxiety. No Time 1 made meaning predicted Time 2 adjustment after controlling for Time 1 adjustment.
Thompson (1985)	32 people whose homes had been damaged by fire; longitudinal (shortly after the fire and 1 year later)	"To make sense of the experience = To determine why it happened, who (if anyone) is to be held responsible, and what meaning the event has for one's life and one's view of the world" (p. 280)	Found positive meaning (combined score of questions about extent of focus on the positive: identified side benefits, made social comparisons, imagined worse situations, forgot the negative, and redefined the fire)	Found positive meaning was related to less distress and better adjustment at both time periods (only cross-sectional analyses reported).
Tunaley et al. (1993)	22 women who had experienced a miscarriage; cross-sectional	Search for meaning (an understanding of the event)	Asked whether the woman had any explanation for her loss (yes/no)	Having an explanation for miscarriage was associated with fewer intrusive thoughts but was not associated with depression, anxiety, or avoidance.
Wood & Conway (2006)	77 undergraduate students describing a life-defining event; cross-sectional	A process that results in an integration of an event with one's positive sense of self	Summary measure: (a) "This past event has had a big impact on me"; (b) "I feel that I have grown as a person since experiencing this past event"; (c) "Having had this experience, I have more insight into who I am and what is important to me"; (d) "Having had this experience, I have learned more about what life is all about"; (e) "Having had this experience, I have learned more about what other people are like"; (f) "Even when I think of the event now, I think about how it has affected me"; and (g) "I have often spent time thinking about what this event means to me." (Primarily meaning made but mixed with some meaning making).	Meaning made was unrelated to event-related positive or negative emotion experienced at the time or the present.

(table continues)

Table 2 (continued)

Study	Sample/design	Conceptual definition of meanings made	Operational definition of meaning made	Findings regarding adjustment
Wright et al. (2007)	60 adult mothers who had experienced child sexual abuse; cross-sectional	Cognitive restructuring focuses on changing one's perspective regarding a traumatic event. Two restructuring strategies are benefit finding ("seeing the silver lining" in a trauma) and meaning making (finding purpose in, or a reason for, the trauma).	Participants rated how much meaning they had made or found from the childhood sexual abuse experience on a 7-point scale. Participants also rated their perception of perceived benefits on a 7-point scale. Those who had perceived some benefit were asked to provide a written answer detailing the types of benefit.	Benefit types were minimally related to adjustment (some to isolation or marital satisfaction, none to depressive symptoms). Ratings of having found meaning or perceived benefits were unrelated to any indices of adjustment.

Note. PTSD = posttraumatic stress disorder; MS = multiple sclerosis.

this review focuses on quantitative studies that explicitly examined meaning-making processes and products (or variants such as sense making) or that directly address the core meaning-making issues reviewed below.

What aspects of global meaning are important to assess?

According to the model, meaning making is set into motion when some fact or feature of the environment or reality is appraised in a way that is discrepant with one's global meaning (see Figure 1). Thus, conceptualization and assessment of global meaning is a critical issue. Some researchers (e.g., Rini et al., 2004) have operationalized global meaning with the World Assumptions Scale (WAS; Janoff-Bulman, 1989), which measures eight global beliefs (i.e., benevolence of people and the impersonal world, self-esteem, luck, randomness, controllability, justice, and self-control). Others have argued that global beliefs are much broader. For example, Koltko-Rivera (2004) described 42 worldview dimensions, including those of the WAS as well as many others (e.g., time orientation, relations to authority). Although much more complex, this categorization of global beliefs is not entirely adequate. For example, Koltko-Rivera considered spirituality as a separate set of dimensions, yet others maintain that spirituality often infuses all aspects of global meaning (e.g., McIntosh, 1995; Park, 2005a). Further, neither Koltko-Rivera's categorization nor others that have been put forth (e.g., Ibrahim & Kahn, 1987) include beliefs about one's identity, changes in which have been proposed to be a central aspect of meaning made (e.g., Neimeyer, 2001). Further, global meaning is broader than beliefs. Global goals and their violation are important components of the meaning-making model (see Figure 1). Although some categorization schemes have been advanced regarding goals and values (e.g., Emmons, 1986; Ford & Nichols, 1987; Pöhlmann, Gruss, & Joraschky, 2006; for a review, see Maes & Karoly, 2005), this aspect of global meaning has been absent from most studies of meaning making.

In addition, as noted above, the subjective sense of life meaningfulness or purpose is sometimes considered an aspect global meaning (e.g., Johnson-Vickberg et al., 2001; Park, Edmondson, Fenster, & Blank, 2008). A broad conceptualization of the composition of global meaning is clearly important, but there is no agreement on what constitutes "broad enough." Perhaps a better approach is to identify aspects of global meaning that are most central and whose violation are most likely to create distress and initiate meaning making. Empirical research on this issue is nonexistent.

How have meaning making and meaning made been characterized in the literature? How well have these characterizations captured meaning-making processes and meanings made?

These issues are critical because study results are often widely disseminated and cited without close attention to the particulars of their methods (Davis et al., 2000). The studies described in Tables 1–3 illustrate the diversity of approaches that have been taken to conceptualize and operationalize meaning making and meaning made. Although meaning making has generally been characterized as efforts to restore congruence between global meaning and situational meaning (see Tables 1 and 3), the specific emphases vary. For example, many studies focused on cognitive efforts (e.g., Davis & Morgan, 2008; Gignac & Gottlieb, 1996), including reinterpretation (e.g., Tomich & Helgeson, 2002); others focused on emotional "working through" (e.g., Stanton, Danoff-Burg, et al., 2000); and still others explicitly focused on both

(text continues on page 282)

Table 3
Details of Studies Explicitly Focused on Effects of Both Meaning-Making Attempts and Meanings Made on Adjustment

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Bonanno et al. (2004)	185 widowed persons (161 women and 24 men) from the Changing Lives of Older Couples nationally representative sample of older adults; longitudinal (6 months, on average, prior to loss and 6 and 18 months postloss)	Search for meaning (no elaboration given)	“During the past month, have you found yourself searching to make sense of or find some meaning in your husband/wife’s death” (1 = <i>never</i> to 4 = <i>often</i>)	Finding meaning (no elaboration given)	“Have you made any sense of or found any meaning in your husband’s/wife’s death?” (1 = <i>no</i> to 4 = <i>a great deal</i>) Also assessed posttraumatic growth (2 items on becoming stronger and more confident)	At 6 months postloss, resilient and depressed-improved individuals searched for meaning less than those in all other groups. Finding meaning variable was unrelated to distress. The percentage that searched for and found meaning was higher in the resilient group at 6 months and higher in chronic grievers at 18 months. Growth was unrelated to resilience.
Bower et al. (1998)	40 HIV+ bereaved men	Confronting the reality of the stressor and considering its implications for one’s life and future (p. 979)	Coded from interviews: Deliberate, effortful, or long-lasting thinking about the death	Finding meaning: a way to integrate victimizing events into their belief systems and reestablish a positive view of the world	Coded from interviews: Major shift in values, priorities, or perspectives in response to the loss	Those who searched and found had less rapid declines in CD4 T cell levels and lower rates of AIDS-related mortality than those who did not search or searched and did not find, controlling for health status at baseline, health behaviors, and other covariates.
and Nolen-Hoeksema & Larson (1999)	Longitudinal (preloss in hospice; 6, 13, and 18 months postloss)				“Have you found anything positive in this experience?”	
Davis & Morgan (2008)	315 adults living with tinnitus; cross-sectional	Either reinterpreting an event to make it consistent with worldviews or self-views or accommodating one’s worldviews or self-views so as to acknowledge the new information implied by the event	Selective incidence question: (a) if they had ever asked “why me?” (yes/no); (b) if they had asked this question in the past 2 weeks (never, rarely, sometimes, often, or all the time)	Arrive at an understanding of the crisis, particularly why it happened to him or her; identify positive life changes resulting from the tinnitus; acceptance/resolution	Whether they (a) had an answer to the question (yes/no); (b) had perceived growth from the tinnitus (yes/no); (c) acceptance scale	Those never asking the question were better off than those who asked (in terms of depression and well-being), regardless of whether they had an answer. Frequency of asking the question was associated with less acceptance, less well-being, and more depression.
Davis et al. (2000)	93 people who had lost a spouse or child in a motor vehicle accident 4–7 years prior; cross-sectional.	Interpreting the event as consistent with existing views of self and world or changing self- or worldviews to be consistent with the interpretation of the loss	“Some people have said that they find themselves searching to make some sense or find some meaning in their loved one’s death. Have you ever done this since your [son’s/daughter’s/ husband’s/wife’s] death?”	Having accepted or come to terms with the loss/resolved the loss by having an explanation for the event rendering it consistent with one’s understanding of the nature of the social world	“Have you made any sense of or found any meaning in your [son’s/daughter’s/ husband’s/wife’s] death?”	Those who had never searched for meaning were significantly better adjusted (well-being and stress) than those who reported searching for but not finding meaning. Those who searched for and found meaning were not different from either group.

(table continues)

Table 3 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Downey et al. (1990)	124 parents who had lost a baby from SIDS; longitudinal (2–4 weeks, 3 months, 18 months postloss)	Concern with issues of meaning (no further elaboration)	“Some SIDS parents have said that they find themselves searching to make some sense or find some meaning in their baby’s death. Have you ever done this [this past week, since your baby died]?”	Finding meaning (no further elaboration)	“At present, can you make any sense or find any meaning in your baby’s death?” “How have you done so?”	Those who were not searching for meaning had better adjustment at all time points (on affect and SCL measures of distress) than those who were searching for meaning at this point. Those finding meaning did not differ from those who never searched for meaning, and both groups were better adjusted than those who were searching without finding meaning.
Eton et al. (2005)	165 spouses of patients with prostate cancer; cross-sectional	Personally threatening events such as the experience of a potentially life-threatening illness trigger a psychological need to make sense of the experience.	A two-question index: “How often have you found yourself searching to make sense of your husband’s illness?” and “How often have you found yourself wondering why he got cancer?” Possible scores range from 2 (low search for meaning) to 10 (high search for meaning).	Not defined; spousal reports of psychological resolution of the cancer experience (“finding meaning”)	Extent to which the spouse believed that she had been able to find meaning in the cancer experience, from 1 (<i>not at all</i>) to 5 (<i>completely</i>)	Greater search for meaning was associated with higher general and cancer-specific distress in spouses. The more that spouses were able to make sense of their husband’s illness, the lower their levels of general and cancer-specific distress. Did not examine relations between meaning making and meaning made.
Fife (1995)	422 persons with various types of cancer; cross-sectional	Coping that maintains a sense of meaning that is not devastating to the self and allows the individual to maintain a sense of wholeness and personal integrity	Positive reinterpretation coping, seeking spiritual support coping	Meaning refers to individuals’ understanding of the implications an illness has for their identity and for the future. In particular, it pertains to individuals’ perceptions of their ability to accomplish future goals; to maintain relationships; and to sustain a sense of personal vitality, competence, and power.	The Constructed Meaning Scale (e.g., “I feel . . . cancer is something I will never recover from; . . . cancer is serious, but I will be able to return to life as it was before my illness; . . . cancer has changed my life permanently so it will never be as good again; . . . I have made a complete recovery from my illness; . . . that I am the same person as I was before my illness”)	Positive reinterpretation and seeking religious spiritual support were (marginally) related to made meaning. Made meaning was related to more positive mood and less negative mood.

(table continues)

Table 3 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Fife (2005)	76 persons diagnosed with some type of cancer (mostly breast and lung cancer and leukemia) and 130 persons with HIV/AIDS at various stages; cross-sectional	Coping strategies or specific behaviors individuals employ that affect the formulation of meaning.	Modified Ways of Coping subscales of Positive Refocusing, Avoidance, Active Coping, Seeking Spiritual Support, and Active Emotion-Focused Coping	The individual's identity, the relationship of the self to others, and possibilities for the future as they are perceived, given the crisis of life-threatening illness	Constructed Meaning Scale (see Fife, 1995, above) revised to reflect "illness" rather than just cancer and with similar additional items	Only positive refocusing and avoidance were (negatively) related to meaning made. Meaning made was related to less emotional distress.
Gangstad et al. (2009)	60 people who had experienced a stroke in the past 4 years; cross-sectional	Stressful events shatter beliefs, leading to reinterpretation and assimilation of the traumatic event into one's existing worldview. Meaning making involves rebuilding new goals and beliefs.	The Cognitive Processing of Trauma Scale subscales of Positive Restructuring, Downward Comparison, Resolution, Denial, and Regrets	Successful meaning making results in the perception that one has grown through this process.	Posttraumatic growth	Cognitive processing (especially cognitive restructuring) was related to posttraumatic growth, which was related to better adjustment when controlling for time since stroke.
Gotay (1985)	73 patients with cancer and 39 spouses; cross-sectional	Asking the existential question "Why me?"	"With respect to your health problem, have you ever asked the question, 'Why me?'"	Specific answers to the question "Why me?"	Coded specific attributions (e.g., chance)	After controlling for demographics, neither attribution nor searching was related to distress or adjustment. Did not examine relations among meaning making/meaning made and adjustment.
Jind (2003)	110 parents who had miscarried or lost an infant within the past year; longitudinal across 1 year	When experiencing serious unanticipated events, such as traumatic events, people should be concerned with explaining why the event took place, what may have caused it to happen, and who or what was responsible for the event.	How often during the previous week they had thought that the death of their baby was caused by something they did or did not do or by something about them as a person; had assigned responsibility for the death to themselves, to someone else, to God, to fate, or to chance and had asked themselves the questions "Why me?" or "Why my child?" Parents also indicated whether they had spent time searching for meaning in the baby's death, all rated on 5-point scales (Downey et al., 1990).	Not defined	Asked if they had come up with any answers to the questions "Why me?" or "Why my child?" (yes/no) and whether they had found any sense or meaning in the death (yes/no)	Searching for meaning in the baby's death and asking oneself "Why me?" or "Why my child?" correlated positively with trauma symptom measures shortly after the loss. Having found meaning in the death was not related to any trauma symptom measure. Having found answers to the question "Why me?" correlated negatively with several of the trauma symptom measures. No longitudinal relationships were reported. Did not examine relations among meaning making/meaning made and adjustment.

(table continues)

Table 3 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Lepore & Kernan (2009)	72 women who had survived breast cancer; longitudinal (11 and 18 months postdiagnosis)	Cancer triggers existential concerns that lead people to search for meaning in life, to attempt to make sense of their illness, or to attempt to understand why they got cancer.	“How often have you found yourself searching to make sense or meaning of your illness?” Respondents answered on a 4-point scale (<i>never to often</i>).	Not defined	“Have you been successful in making sense of your illness?” answered or rated dichotomously as Yes or No.	Searching for meaning at Time 1 was associated with increased negative affect at Time 2. Made meaning was not related to negative affect.
Manne et al. (2009)	253 partners of women diagnosed with early-stage breast cancer; longitudinal (assessed shortly after partner’s diagnosis, 9 [$n = 167$] and 18 months later [$n = 149$])	Distress arises from discrepancy between beliefs and environment and the meaning inherent in a trauma. Distress can be reduced by confronting, contemplating, and reevaluating the experience with the goal of adjusting one’s beliefs (p. 51) Some cognitive processing occurs through emotional expression and emotional processing.	Searching for meaning was assessed with one item regarding whether they had tried to find meaning in the partner’s cancer experiences (<i>not at all to a great deal</i>). Emotional processing and emotional expression were assessed with Stanton’s additional items for the COPE.	“The outcome of cognitive processes such as searching for meaning and delving into one’s emotions may depend on the success of these attempts in assisting the individual to gain a new perspective on the cancer experience” (p. 51).	Having found meaning was assessed with one item regarding whether they felt they had found meaning in the partner’s cancer experiences (<i>not at all to a great deal</i>). Acceptance and positive reappraisal were assessed with COPE subscales.	Mixed evidence for importance of meaning making/made hypothesis. The positive association between searching for meaning and higher cancer-specific distress was marginally moderated by having found meaning. Links of emotional processing and expression and changes in cancer-specific distress were moderated by acceptance. Positive reappraisal moderated the emotional expression changes in the global distress link. The other six moderator tests were not significant.
McIntosh et al. (1993)	Same study as Downey et al. (1990). Did not examine relations among meaning making/meaning made and adjustment	Integration of the new data of the traumatic event into their old schemata	Cognitive processing (19 items, on 5-point scale, regarding how often in the past week parents had thoughts, memories, or mental pictures of the child; how vivid and absorbing these were; how often they thought they saw or heard the infant; the extent to which they purposely engaged in thinking about the child; and how often they desired to and actually talked about the baby and his or her death)	Intrusive, recurrent thoughts are evidence that the victims are “actively trying to process the information” of the event, and such ruminations are “in the service of this crucial cognitive reconstructive process” (p. 124)	“Have you made any sense or found any meaning in your baby’s death?”	Cognitive processing at 3 weeks was cross-sectionally related to more distress and lower well-being but was later related to less distress and higher levels of well-being. Earlier sense of having found meaning related to well-being and less distress.

(table continues)

Table 3 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Michael & Snyder (2005)	158 college students bereaved (approx. 3 years prior); cross-sectional	Cognitive processing (productive repetitive thought focused on resolution of discrepancies between cognitive models of the world predeath and new information derived from the experience of the event)	RIQ: Seven items inquiring about frequency with which participants had memories, thoughts, or mental pictures of their loved one pop into their mind and how troubling and bothersome these memories, thoughts, or mental pictures were ($\alpha = .84$). Authors distinguish rumination and productive processing, but title of measure is RIQ: Rumination Index Questionnaire	Sense making (understanding why the event occurred), benefit finding	Sense making: "Do you feel that you have been able to make sense of the death?" and "Sometimes people who lose a loved one find some positive aspect in the experience. For example, some people feel they learn something about themselves or others. Have you found anything positive in this experience? Yes/No." Benefit finding: Post-Traumatic Growth Inventory	Sense making was associated with lower levels of cognitive processing about the death and positive well-being. Correlation between cognitive processing and sense making was stronger for those more recently bereaved, suggesting that making sense relates to positive well-being by means of decreased rumination. Post-Traumatic Growth Inventory was related to more cognitive processing for those bereaved longer, contrary to hypotheses.
Murphy et al. (2003)	173 parents bereaved 5 years prior; study is longitudinal, but relevant data are cross-sectional.	Meaning begins to revolve around questions of value and significance and is embraced as survivors' lives move from the superficial to the profound (p. 383)	Religious coping	Meaning as significance (acceptance of how their children's lives were lived and redefinition of "what is important now," benefits)	Coded open-ended responses to the question, "How have you searched for meaning in your child's death as well as in your own life?"	Religious coping was a fairly strong positive predictor of having made meaning. Having made meaning was related to better adjustment on all measures (less PTSD, acceptance, physical functioning, distress, and marital adjustment).
Orbuch et al. (1994)	28 survivors of sexual assault (occurred on average 18 years prior); cross-sectional	The reconstructive process that occurs after a major trauma (account making)	Open-ended questionnaire items coded as extent of account-making activities. Also, rating scale measured time spent each month trying to understand the assault.	Development of an account that provides more in-depth understanding of the event and an interpretation that takes the onus off the self as the responsible agent (p. 252).	Open-ended questionnaire item coded as extent of completeness of account making (amount of understanding of the assault and fulfillment of the process of inquiry expressed). Also, rating scale measured extent to which participant felt successful in achieving an understanding of the assault.	Rating scales of meaning-making effort and resolution unrelated to current negative affect. Extent and completeness related to higher coping success and less negative impact of the assault. Extent of account making but not completeness was also related inversely to current negative affect. Did not examine relations among meaning making/meaning made and adjustment.

(table continues)

Table 3 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Pals (2006)	83 women of the Mills Longitudinal Study at age 52 in response to the most difficult time in their adult lives; longitudinal (outcomes measured 9 years later)	Ongoing task of narrating and interpreting past experiences and incorporating them into the life story as lasting narrative products	Narratives coded for open-exploratory versus closed, minimizing approach to coping (coping via opening the self to exploring the impact of the experience and trying to gain something new from it [e.g., introspection, self-analysis] vs. coping via attempting to minimize the impact of the experience and distancing the self)	A sense of narrative completion that releases the person from the emotional grip of the event and allows the life story to move forward	Narratives coded for construction of a coherent and complete story of a difficult event that ends positively, conveying a sense of emotional resolution or closure.	Exploratory coping was related to positive resolution and to subsequent maturity. Positive resolution was related to subsequent maturity, life satisfaction, and physical health.
Park (2005b)	169 college students bereaved within the past year; cross-sectional	Discrepancy between appraised meaning of the event and the basic beliefs and goals disrupted by it must be reduced by changing the appraised meaning of the situation, changing global beliefs and goals, or both.	Positive reinterpretation subscale of the COPE	Changes of either the appraised meaning of situations or of global meaning facilitate integration of the appraised (or eventually reappraised) meaning of the event into the individual's global meaning system.	The extent to which participants currently appraised the death as discrepant with their global beliefs ("Now, how much does the death interfere with the way you understood the world to work and the way things happen?") and goals ("Now, how much does the death interfere with your daily goals and the everyday things that are important to you?"; 1 = <i>not at all</i> to 7 = <i>very much</i>)	Meaning making was related to less discrepancy with beliefs and goals, which was related to less distress (depression and intrusive thoughts) as well as to stress-related growth.
Park (2008b)	108 college students dealing with a significant loss in past 6 months; longitudinal (over 2 months)	Deliberate and automatic efforts to cognitively process or mentally rework appraised and global meaning to change or reframe them and make them consistent	COPE subscales (Religious Coping, Positive Reinterpretation, Emotional Processing), intrusive thinking, "search for meaning"	Develop a more integrated understanding of the stressor	Reductions in discrepancy between one's understanding of the loss and one's global beliefs and goals	Some Time 2 meaning making (religious coping, emotional processing, and intrusions) was related to reductions in discrepancy, which was related to some measures of adjustment (inconsistent and spotty relationships). Searching for meaning and positive reinterpretation coping were unrelated to changes in any measure of belief or goal discrepancy. <i>(table continues)</i>

Table 3 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Park et al. (2008)	172 young to middle-aged survivors of cancer; longitudinal across 1 year	Efforts to understand a stressor (appraised meaning) and incorporate that understanding into one's global meaning system to reduce the discrepancy between them	COPE Positive Reframing subscale.	The products of that process (i.e., meanings made); the successful apprehension of meaning in the context of coping	Posttraumatic growth, meaning in life, reduced just-world violations	Meaning making was minimally directly related to adjustment but was related to meaning made (increased growth and life meaning and reduced just-world violation), which was related to better mental health; findings held prospectively (controlling for initial levels of mental health).
Phelps et al. (2008)	83 individuals with an amputated limb; longitudinal (6 and 12 months postamputation)	Deliberate cognitive processes (e.g., altering basic assumptions or core beliefs to accommodate the traumatic experience, revising goals, or seeking benefits)	Cognitive Processing of Trauma Scale, Positive Subscale (Positive Cognitive Restructuring and Resolution/Acceptance subscales, reflecting the discovery of benefits associated with the experience, satisfaction with coping, and indicators of growth or acceptance)	Not defined	Post-Traumatic Growth Inventory.	Meaning making (positive cognitive processing) predicted more growth at 12 months and less depression at 6 and 12 months; unrelated to PTSD at 6 or 12 months. Growth was related only to more depression at 6 months.
Schwartzberg & Janoff-Bulman (1991)	21 college students bereaved via parental loss; cross-sectional	Making sense of the death in light of challenges to global beliefs	"Asked why him/her?"	Finding an answer to the question of "why him/her?"	Came up with an answer to the question	Respondents who found an answer to the question, whatever their answer, were less grieved than those who could not find an answer (except those who attributed the death to fate or chance). Did not examine relations among meaning making/ meaning made and adjustment. Did not report relation of asking and outcome.

(table continues)

Table 3 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Silver et al. (1983)	77 adult survivors of childhood incest, occurred on average nearly 20 years earlier; cross-sectional	Coming to view the aversive experience from a purposeful or meaningful perspective (p. 82)	Combined items: "how often they found themselves wondering 'why me?'" and "how often they found themselves searching for some reason, meaning, or way to make sense out of their incest experience" (correlation = .56)	Coming to view the incest from a purposeful or meaningful perspective (p. 82)	"Finding meaning": Unclear how authors derived this variable. Scored as present or absent but unclear whether participants were asked or whether authors coded open-ended items. Description appeared to include attributions and growth.	Higher levels of active search were related to higher levels of intrusions, distress, and social maladjustment. Women who made sense of their experience had lower levels of intrusions and distress and higher functioning than those who did not. Did not examine mediation or moderation effects of meaning made.
Skaggs et al. (2007)	232 patients who had undergone percutaneous coronary intervention within the past year; cross-sectional	Meaning-based coping used to make sense of the unexpected event by trying to change the event's global meaning	Searching for Answers subscale from Meaning in Heart Disease Scale (e.g., "Trying to understand why I have heart disease"; "Wonder if I could have prevented my heart disease")	The outcome within the process of the search for meaning that reflects the degree of reconciliation of the meaning of the event with global meaning	Refocused Global Meaning subscale from Meaning in Heart Disease Scale (e.g., "Appreciate things that I used to take for granted"; "I take more time to enjoy life")	Searching for meaning was related to more anxiety and depression and better health-related quality of life; having a refocused global meaning was related to less anxiety and depression and to poorer health-related quality of life. Searching for meaning was highly correlated with refocused global meaning.
Thompson (1991)	40 patients with stroke (average of 9 months prior) and 40 caregivers; cross-sectional	Traumatic events are presumed to challenge adaptive assumptions and to initiate a search for meaning that will restore one's positive assumptions.	"Have you ever asked yourself, 'Why me?'" ; "Have you considered the cause for the stroke?"	Attributions help make sense out of the event and place it in a meaningful context. Some attributions also restore a sense of control and invulnerability.	"Have you found any meaning in your experience with a stroke" (5-point scale) "Have you found a cause for the stroke?"	Search for cause was unrelated to adjustment. Asking "Why me?" was related to poorer adjustment. Finding meaning and finding cause were related to better adjustment. Did not examine relations among meaning making/ meaning made and adjustment.
Tolstikova et al. (2005)	Bereaved family member, mostly from drunken driver accidents (average of 6 years postloss); cross-sectional	Reevaluating one's life and developing a new perspective and set of goals	"Some people have said that they find themselves searching to make some sense or find some meaning in their close person's death" (dichotomized as no/yes)	Restoration of a sense of order and purpose to life, as well as a sense of self-worth and self-identity	"Have you made any sense or found any meaning in your (son's/daughter's/husband's/wife's) death?" (dichotomized as no/yes)	No search, search with no meaning, search with meaning. No search and search with meaning were both related to less grief; search with meaning was associated with fewer PTSD symptoms than was no search.

(table continues)

Table 3 (continued)

Study	Sample/design	Conceptual definition of meaning making	Operational definition of meaning making	Conceptual definition of meanings made	Operational definition of meanings made	Findings
Updegraff et al. (2008)	931 adults from a national probability sample after 9/11; longitudinal (2 months and 1 year)	Reconciling the harsh reality of adversity with previously held benign assumptions about oneself and the world. Often involves seeking answers to questions such as "Why did this event happen to me?"	"Over the past week, have you ever found yourself trying to make sense of the September 11 attacks and their aftermath?" (1 = <i>No, never</i> to 5 = <i>Yes, all the time</i>).	Traumatic events are reconciled with worldviews by finding some kind of meaning in the event (e.g., by assigning responsibility for the event, interpreting the experience through one's philosophical or religious beliefs, or believing that the event has had some benefits).	Finding meaning was assessed with "Over the past week, have you been able to make sense of the September 11 attacks and their aftermath?" (1 = <i>No, never</i> to 5 = <i>Yes, all the time</i>).	Searching for meaning 2 months post-9/11 was associated with higher posttraumatic stress symptoms across the following 2 years and finding associated with less, after controlling for pre-9/11 mental health, exposure to 9/11, and acute stress response. Effect of finding meaning was mediated by reducing fears of future terrorism.
Uren & Wastell (2002)	109 mothers who experienced a stillbirth/neonatal death 0–17 years ago; cross-sectional	Attempting to minimize the anomaly between prior, no longer viable, positive assumptions and current negative ones	Frequency with which participants currently engaged in a search for meaning (how often they were troubled by the question "Why me?" and how often they searched "for some reason, meaning or way to make sense of the death")	Restoration of assumptions that the world is benevolent, predictable, and just and that the self is worthy	Extent to which they had "made sense of, or found meaning in" their baby's death	Having found meaning was associated with decreased grief severity, but currently searching for meaning was associated with increased distress. Did not examine relations among meaning making/meaning made.
Wu et al. (2008)	35 mothers of children undergoing bone marrow transplant (HSCT) who became bereaved; prospective (pretransplant and 3 months postbereavement)	A search for meaning to make sense of the event	Extent to which the mother tries to find an explanation for her child's illness and is looking for positive things that have come out of the illness for herself, her child, or her family.	Integration of the event into broader meaning structures	Extent to which the mother is able to find an explanation for her child's illness and able to find positive things that have come out of the illness for herself, her child, or her family.	Extent to which mother's search for meaning in HSCT (i.e., prior to the child's death) predicted distress after the child's death; searching for positive meaning at HSCT did not predict distress. Finding meaning at HSCT predicted less distress, but found positive meaning was unrelated. Did not examine relations among meaning making/meaning made and adjustment.

Note. SIDS = sudden infant death syndrome; SCL = Symptom Checklist; PTSD = posttraumatic stress disorder.

cognitive and emotional processes (e.g., Bonanno et al., 2005; Farran, Miller, Kaufman, & Davis, 1997). Further, some considered meaning-making attempts as deliberate coping (e.g., Danhauer, Carlson, & Andrykowski, 2005), others as an automatic process (e.g., Michael & Snyder, 2005), and still others as a combination (e.g., Park, 2008b). Some measured meaning making (e.g., Cleiren, 1993) without providing a conceptual definition.

Tables 1 and 3 demonstrate that the operationalization of meaning-making attempts has often been largely disconnected from its rich and complex conceptualization. One of the most frequently used operationalizations involves some variant of asking participants if they have been searching for meaning (e.g., Bonanno, Wortman, & Nesse, 2004; Downey, Silver, & Wortman, 1990; Updegraff, Silver, & Holman, 2008), asking “Why?” or “Why me?” (e.g., Schwartzberg & Janoff-Bulman, 1991), or combining these two types of questions (e.g., Silver, Boon, & Stones, 1983; Tomich & Helgeson, 2002; Uren & Wastell, 2002). Others common measures of meaning making include the Intrusive Thoughts subscale of the IES (Horowitz et al., 1979; e.g., DuHamel et al., 2004; Lepore & Helgeson, 1998) and subscales from coping inventories (e.g., Park, 2005b; Stanton, Danoff-Burg, et al., 2000). Some studies developed narrative coding schemes (e.g., Bower et al., 1998; Pals, 2006) or ad hoc measures of meaning-making attempts (e.g., Michael & Snyder, 2005).

As shown in Tables 2 and 3, researchers’ definitions of meaning made present a similar situation. Conceptually, descriptions typically involve restoration or reconstruction of meaning consisting of reappraised situational or global meaning to restore coherence (e.g., Pakenham, 2008c). Most of these studies characterized meaning made as having found an understanding both of why the event happened and positive implications, as delineated by Janoff-Bulman and Frantz (1997), although some emphasized understanding (e.g., Dirksen, 1995) and others emphasized experiencing positive lessons (e.g., McLean & Pratt, 2006). A few studies considered additional aspects (e.g., identity reorganization; Neimeyer et al., 2006).

However, in the translation to actual measurement, much of the conceptual richness is lost. As shown in Tables 2 and 3, meaning made has often been assessed with variants of questions regarding whether one has “made meaning” or “made sense” of the stressor (e.g., Eton, Lepore, & Helgeson, 2005; Pakenham, 2008c) or has an explanation for it (e.g., Tunaley, Slade, & Duncan, 1993); a combination of such questions characterizes other studies (Jind, 2003). A few researchers have assessed meaning made as post-traumatic growth (e.g., Gangstad, Norman, & Barton, 2009; Phelps, Williams, Raichle, Turner, & Ehde, 2008) or as changes in global meaning (e.g., Rini et al., 2004) or situational meaning (e.g., Park & Blumberg, 2002). At this point, then, operational definitions of meaning made appear to be a very incomplete reflection of the researchers’ respective theoretical constructs.

How common are meaning-making attempts? Perhaps partly because of the widely varying operational definitions of meaning-making attempts, reported estimates also vary widely. Many studies have indicated that meaning-making attempts following highly stressful events are a near-universal experience (Davis et al., 2000). For example, in Bulman and Wortman’s (1977) classic study of individuals paralyzed in serious accidents, all 29 participants reported having asked, “Why me?” (see also Silver et al., 1983). A study of spouses and parents bereaved due

to motor vehicle accident 4–7 years previously reported that only 30% and 21% (respectively) reported they had never been concerned with “making sense of, or finding meaning in, their loss” and nearly all (85% of spouses and 91% of parents) had asked, “Why me?” or “Why my [spouse/child]?” (Lehman, Wortman, & Williams, 1987). Similarly, a study of bereaved family members found that 89% reported “having searched for meaning” (Tolstikova, Fleming, & Chartier, 2005), and a study of bereaved students found that 90% reported having asked “Why him/her?” regarding the deceased (Schwartzberg & Janoff-Bulman, 1991). Two thirds of a nationally representative sample of U.S. adults reported searching for meaning 2 months after the 9/11 terrorist attacks (Updegraff et al., 2008). Only 14% of a sample of breast cancer survivors nearly a year after their diagnosis said that they “never searched for meaning,” and 57% reported searching “often” or “sometimes” (Lepore & Kernan, 2009). Nearly 75% of long-term incest survivors reported still “searching to find some meaning” at least sometimes, nearly 20 years, on average, after the abuse (Silver et al., 1983).

However, not all studies report such high rates of meaning-making attempts. In a study of bereaved HIV+ men, only 65% were rated as having engaged in “confronting the reality of the stressor and considering its implications for one’s life and future” (Bower et al., 1998, p. 979), and in a study of family members bereaved by a traffic accident, 56% reported being at least sometimes “absorbed in questions about the loss” a year afterward (Cleiren, 1993). Still lower numbers were reported in the study of elderly bereaved spouses in which, at 6 months postloss, 71% reported not having searched for meaning in the past month (Bonanno et al., 2004). In a study of people living with tinnitus, 38% reported never having searched for meaning (i.e., asked “Why me?”; Davis & Morgan, 2008), and in a sample of cancer survivors, only 24% of younger and 6% of older survivors reported having asked that question (Schroevers, Ranchor, & Sanderman, 2004).

These figures may well depend on the operational definition of meaning-making attempts. Broadening the definition (e.g., reports of intrusive thoughts, positive reappraisal coping, emotional social support coping) likely increases the estimate. Differences in samples and time frames across studies may also account for some of the variability. In addition, different types of stressful events may differentially trigger meaning-making efforts. Some studies have found that meaning-making efforts do not diminish over time (e.g., Updegraff et al., 2008), and others have demonstrated significant drops over time (e.g., Bonanno et al., 2004). At any rate, there appears to be ample support for the notion that meaning making is a fairly common experience following stressful events and that it often persists long after the stressful event.

How common is meaning made? Again, the answer to this seemingly simple question turns out to be contingent on the definition selected. Many studies simply asked people whether they had “made meaning” or “made sense,” which, as discussed earlier, is a questionable tool for capturing the extent to which people have successfully integrated their global meaning with their situational meaning of a stressful encounter. Even among studies using this method, numbers vary widely. In the motor vehicle accident bereavement study cited above, 68% of spouses and 59% of parents said that they had not made any sense at all or found any meaning in the death (Lehman et al., 1987). In the study of sudden

infant death syndrome (SIDS), 75% of parents reported being unable to find any meaning or make any sense of their baby's death 18 months afterward (Wortman & Silver, 1987). Two months after the 9/11 terrorist attacks, 60% of Americans reported being unable to find meaning (Updegraff et al., 2008). In a sample of patients with multiple sclerosis an average of 10 years postdiagnosis, 53% indicated that they could not make sense of their multiple sclerosis and 44% indicated that they could (Pakenham, 2007). Pakenham, Sofronoff, and Samios (2004) found that 75% of parents of a child with Asperger syndrome said they had "made sense" of their child's condition. In a study of family members 4 months after bereavement by traffic accidents, 68% reported that they had made sense of the death, 10% had partially made sense of the death, and 19% reported being unable to make sense of it (Cleiren, 1993).

Somewhat different numbers are yielded by a different conceptualization of having made meaning, having found an answer to the question "Why?" or "Why me?" Wortman and Silver (1987) reported that even 18 months after the death of their child, 86% of those studied were unable to answer the question "Why me" or "Why my baby?" In the motor vehicle accident bereavement study, of those who asked why (85% of spouses and 91% of parents), 59% said they were unable to find an answer (Cleiren, 1993). In a sample of college students whose parent had died within the past 3 years, 50% reported they had found a satisfactory answer to the question (Schwartzberg & Janoff-Bulman, 1991).

On the basis of these studies, people often, but certainly not always, experience meaning made. To answer this question as posed by the meaning-making model, however, one must consider meaning made much more broadly (see Figure 1). The various products identified as meaning made, such as posttraumatic growth, changes in identity, resolution, and reappraised situational or global meaning, are all frequently reported (e.g., Helgeson, Reynolds, & Tomich, 2006; Joseph & Linley, 2005), indicating that meaning made, more broadly construed, is a common experience.

Are appraised meanings (initial appraisals and reappraisals) related to distress? The general transactional model of stress and coping posits that individuals' understanding of stressors (both initial and subsequent) is related to those individuals' levels of distress (Aldwin, 2007; Lazarus, 1991, 1993). This aspect of the model is supported by myriad studies linking appraisals and distress (e.g., Pakenham, Chiu, Burnsall, & Cannon, 2007; Tan, Jensen, Thornby, & Anderson, 2005). According to the meaning-making model, this distress arises because these appraised meanings are discrepant with some aspect of the individuals' global meaning system (Park & Folkman, 1997). Most studies of coping with highly stressful events have not directly assessed this facet of appraisals. Instead, researchers have typically measured appraisals that imply discrepancy. For example, threat appraisals imply that something of value is perceived to be at risk (Lazarus & Folkman, 1984). Threat appraisals are consistently related to more distress (e.g., Chandler, Kennedy, & Sandhu, 2007; Davis & MacDonald, 2004; for a review, see Schneider, 2008). Similarly, appraisals of uncontrollability imply violations of the global beliefs of individuals in their ability to master themselves and their surroundings (Janoff-Bulman, 1992) and are typically linked with distress (e.g., Frazier, Mortensen, & Steward, 2005; for a review, see Roesch, Weiner, & Vaughn, 2002).

Trauma researchers have found that appraisals of the impact or damage of the trauma, which presumably are contrary to trauma victims' goals of not being impacted or damaged, are related to levels of posttraumatic stress (Ehlers & Clark, 2000). For example, in a sample of women who had been sexually assaulted, after accounting for the perceived severity of the assault, appraisals of the assault as negatively impacting themselves, their world, other people, and their future predicted PTSD symptoms (Fairbrother & Rachman, 2006).

It is important to note that though the meaning-making model is concerned with initial as well as subsequent appraised event meaning, very little literature has assessed initial appraised meaning close to the occurrence of the event. Most of the literature regarding appraised meaning and distress actually speaks to the issue of reappraised meanings (i.e., meaning that likely have been subjected to considerable revision over time) rather than initial appraised meaning. Rudimentary affordances appear to give rise to initial appraised meaning, which may occur in the microseconds following a stressor (Lazarus, 1991; Smith & Lazarus, 1993). Very early appraised meanings involve an event's relevance and extent of threat/loss/challenge (Lazarus & Folkman, 1984).

Although assessing these very early meanings without the distortion of participants' retrospective bias is possible in experimental paradigms (e.g., Tomaka, Blascovich, Kibler, & Ernst, 1997), such assessment is virtually impossible in the context of major life stressors. Some studies, however, have asked participants to recollect their appraisals at the time of the event's occurrence. For example, a study of automobile accident survivors found that recollected initial cognitions regarding factors such as perceived threat to life had stronger relationships to subsequent distress than did demographic or accident variables (Jeavons, Greenwood, & de L. Horne, 2000), and a study of patients with burns found that perceived life threat (assessed during hospitalization) predicted intrusive and avoidant symptoms 3 months later (Willebrand, Andersson, & Ekselius, 2004). Evidence regarding reappraised meaning as related to distress, then, is fairly solid, but little is known about the impact of initial appraisals on adjustment.

Do events (or appraised meaning of events) violate global meaning? Although the notion of shattered assumptions is a central tenet of some meaning-making theories (e.g., Janoff-Bulman, 1992), some researchers have contended that there is, in fact, little evidence that this shattering happens (Mancini & Bonanno, 2008). To truly address this issue, studies must assess global meanings prior to stressful events; only such prospective studies can demonstrate changes in global meaning from before to shortly after a traumatic event. Further, to infer that the change in global meaning is due to experiencing an event, one must compare these changes with levels of change in a comparable sample that did not experience the event. Ideally, this would occur in a randomized experimental context that would control for alternate explanations; such studies will almost certainly not be conducted. Thus, evidence for this proposition must remain merely suggestive.

Several prospective studies have demonstrated some shifts in global beliefs from pre- to poststressor, but the magnitude of these shifts falls short of that which would indicate "shattering." For example, in a community sample assessed twice 3 years apart, Gluhoski and Wortman (1996) found that certain types of interim trauma predicted increased belief in vulnerability and justice but not in fatalism. In a prospective study of mothers of children

undergoing bone marrow transplants, stressful life events assessed in a 6-month period predicted modest shifts in beliefs in benevolence and chance but not in contingency (Rini et al., 2004). Kaler et al. (2008) followed a large sample of undergraduates over 2 months to examine the influence of traumatic events on the level of those listed in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) in the interim on the eight global beliefs assessed by Janoff-Bulman's WAS. Results indicated that on average, no global belief change occurred in those who experienced trauma (nor in the comparison group who did not encounter a trauma), leading Kaler et al. (2008) to conclude that there was minimal evidence of shattering.

Weaker evidence regarding global belief violation in the wake of trauma comes from cross-sectional studies comparing the postevent global meaning of those who have versus those who have not been exposed to a particular trauma, such as the Holocaust (Prager & Solomon, 1995), violent crime (Denkers & Winkel, 1995), political violence (Magwaza, 1999), death of a significant other (Boelen, Kip, Voorluis, & van den Bout, 2004; Schwartzberg & Janoff-Bulman, 1991), parental divorce (Franklin, Janoff-Bulman, & Roberts, 1990), and traffic accidents (Solomon, Iancu, & Tyano, 1997). Many of these studies report that those exposed to highly stressful events scored more negatively on some global belief dimensions, but results are often complex and mixed. For example, one study found that bereaved parents as compared to nonbereaved parents held more negative views of the benevolence of the world and self-worth, but their perceived meaningfulness of the world did not differ (Matthews & Marwit, 2004). Another study comparing recently bereaved and nonbereaved adults found that the bereaved had higher levels of benevolence beliefs but lower levels of meaningfulness beliefs (Mancini & Bonanno, 2008). Further, although these scattered reported differences are statistically significant, they are typically small, perhaps suggesting some violation rather than full-blown shattering.

Few studies have examined goal shifts following traumatic encounters. A series of studies found retrospective reports of shifts toward more valuing of intrinsic global goals following an earthquake (Study 1; Lykins, Segerstrom, Averill, Evans, & Kemeny, 2007) and the 9/11 terrorist attacks (Study 2; Lykins et al., 2007). An experimental manipulation of mortality salience produced a complex interaction of goal shift, such that intrinsic goals became more valued by those already high in intrinsic goal motivation and extrinsic goals became more valued by those already high in extrinsic goal motivation (Study 3; Lykins et al., 2007).

Studies of meaning making have rarely inquired directly about a mismatch between global and appraised meaning. This lack of explicit assessment of violation is particularly so regarding global beliefs, such as the extent to which the appraised meaning of the event was inconsistent with an individual's beliefs in fairness, justice, or control. In a rare exception, Park (2008b) asked college students who had experienced a significant loss about the extent to which the loss violated their global beliefs and goals using scales designed specifically for that study. Participants reported high levels of belief and goal violation (Park, 2008b).

In contrast, there is a body of literature regarding goal violation, perhaps because it is easier to ask people directly about violated goals than about violated beliefs. In fact, much of the health-related quality of life literature is based on the appraised gap between one's current and one's desired life (Ferrans, 2005). For

example, the Minnesota Living with Heart Failure Scale is based on the extent to which patients' heart failure "gets in their way of living how they want to live" (Rector, Kubo, & Cohn, 1987). However, the goal violation approach taken by quality of life researchers has yet to be incorporated into meaning-making research.

In summary, support for the notion that highly stressful events shatter global meaning is minimal. Instead, small shifts in global meaning from prior to an event to afterward have been demonstrated, although these shifts may be the result of meaning-making processes, given the studies' long time frames. If it were to distinguish meaning made from initial shattering, research comparing pre- and postevent global meaning would need to be conducted temporally very close to the event and home in on the discrepancies represented by the appraised meaning of an event.

Does distress result from perceptions of appraised meaning as violating global meaning? A cardinal assumption of the meaning-making model is that individuals experience distress to the extent that their appraised meaning of situations is discrepant with their global beliefs and goals (see Figure 1). Evidence regarding this assumption comes from several different lines of research. Indirect support comes from studies demonstrating that threat or loss appraisals, which essentially imply a violation of global meaning, relate to distress (Aldwin, 2007). Similarly, studies in the conservation of resources tradition have shown that the extent of resources perceived to be lost is related to degree of distress (Hobfoll, Dunahoo, & Monnier, 1995). Resource loss may be another way of conceptualizing goal discrepancy (i.e., discrepancy is implied by reports of having lost things of value; see Joekes, Maes, Boersma, & van Elderen, 2005). The above-mentioned quality of life measures are usually associated with distress (e.g., Sneed, Paul, Michel, Vanbakel, & Hendrix, 2001), providing further evidence of the link between global meaning violation and distress. However, these research traditions have not been concerned with locating the mismatch in appraised versus global meaning and typically have not examined meaning-making processes.

Few studies have directly examined belief discrepancies and distress. In a cross-sectional study of bereaved undergraduates, Park (2005b) found that the extent to which bereavement violated global meaning was related to higher levels of distress, particularly for those more recently bereaved, and in the above-cited study of college students dealing with loss, higher levels of belief and goal violations were related to higher subsequent levels of distress (Park, 2008b).

More direct evidence regarding the global meaning violation-distress link can be found in research on goal violation. Cross-sectional studies have shown that goal violation is related to distress for college students dealing with recent stressful events (Schroevers, Kraaij, & Garnefski, 2007), for patients living with chronic illness (Kuijer & de Ridder, 2003; cf. De Ridder & Kuijer, 2007), and for adults living with HIV (van der Veek, Kraaij, Van Koppen, Garnefski, & Joekes, 2007). A study of patients with myocardial infarction found that the extent to which they perceived the myocardial infarction to violate their goals predicted increased depression 4 months later (Boersma, Maes, & van Elderen, 2005), and a study of women with fibromyalgia found that the extent to which they perceived their pain and fatigue as hindering their health and fitness goals related to subsequent

deterioration of positive (but not negative) affect (Affleck et al., 1998). In sum, findings to date regarding the centrality of discrepancy provide modest support for the assumption that violations of both global beliefs and goals by appraised meaning create distress, but much more research on this aspect of the model is needed.

Do meaning-making attempts follow violations of global meaning? Another major assumption of the meaning-making model is that not only do appraisals lead to discrepancies and distress but these distressing discrepancies lead to subsequent meaning-making attempts (see Figure 1). Although many studies were based on implicit or explicit conceptualizations of situational-global meaning discrepancy, few studies directly assessed it. Thus, an answer to this question must, at present, rely primarily on the broader coping literature dealing with appraisals of threat, loss, or uncontrollability; such appraisals imply discrepancy, in that something one values is in danger or has already been damaged or one's control is compromised (Janoff-Bulman, 1989; Lazarus & Folkman, 1984).

Appraisals have been linked to specific aspects of meaning making, particularly reinterpretation coping (Aldwin, 2007). For example, both appraising the stressor as a challenge (Park & Fenster, 2004) and appraising it as controllable (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986) have been linked with reappraisal coping. Specific appraised meanings (e.g., challenge and threat appraisals; Park & Fenster, 2004) have also been linked to religious coping (often considered a meaning-making strategy; e.g., Folkman, 1997; Phillips & Stein, 2007; Schottenbauer, Rodriguez, Glass, & Arnkoff, 2006). As noted above, intrusions (or PTSD symptomatology) can be viewed as an indicator of meaning-making attempts, and certain kinds of trauma appraisals, particularly threat appraisal, have been linked to PTSD symptomatology (e.g., Agar, Kennedy, & King, 2006).

However, not all studies have found a link between appraisals and meaning making. For example, in a sample of undergraduates, threat appraisals of various stressful events were unrelated to positive reappraisal (Park & Fenster, 2004), and in a sample of HIV caregivers and HIV+ noncaregivers, appraised stressor controllability was related neither to use of positive reappraisal nor to the effects of positive reappraisal on depression (Park, Folkman, & Bostrom, 2001). Still other studies have produced mixed results. A study of college students coping with various stressful events found that the extent to which the events were appraised as violating their personal goals was related to self-blame, catastrophizing, and rumination but unrelated to acceptance coping, positive reappraisal, or putting the event into perspective, all of which capture aspects of meaning making (Schroevers et al., 2007). A study of college students dealing with a recent significant loss found that the extent to which the loss violated global beliefs and goals related to some aspects of meaning making (intrusive thoughts, emotional processing, and religious coping) but not to positive reinterpretation (Park, 2008b). Finally, longer term cancer survivors' appraisals of the cancer as violating beliefs in the fairness of the world were related to increased repetitive thoughts but not to positive reinterpretation coping (Park, Edmonson, et al., 2008).

Experimental evidence supports the notion that global meaning violations can trigger meaning-making attempts. For example, participants exposed to information that violated their theories about personality experienced increased anxiety and "worked

harder to establish their sense of prediction and control mastery by redoubling of information-gathering efforts on a subsequent, control-relevant task" (Plaks et al., 2005, p. 258). Another study found that when participants' meanings were threatened, participants shifted their attention to alternate sources of meaning (Heine et al., 2006). These lab-based studies demonstrate that distress and meaning-making attempts arise in the wake of global meaning violation; whether similar processes occur in confrontations with real-life, high-magnitude stressors remains to be seen.

Does distress lead to or drive meaning-making attempts? Cross-sectional studies have variously reported positive, negative, and null relationships between meaning-making attempts and distress (see Table 1). Yet, with their cross-sectional design, most studies cannot demonstrate whether distress drives the meaning-making process, although this assumption is widely made in the broader coping literature (Aldwin, 2007). In fact, as it is in the broader coping literature, the issue is typically conceptualized in the opposite order (i.e., do meaning-making attempts lead to [less] distress?). Thus, little evidence is available regarding this essential component of the meaning-making model.

Do meaning-making processes lead to meaning made? Little research has examined the extent to which meaning-making processes do, in fact, lead to meanings made. The single exception is the made meaning of posttraumatic growth, for which there is a fair amount of research on meaning making as its determinant. For example, various types of meaning-making coping, including positive reappraisal, seeking emotional social support, and religious coping, have been related to perceived growth in samples of college students (e.g., Armeli, Gunthert, & Cohen, 2001) and survivors of cancer (e.g., Sears, Stanton, & Danoff-Burg, 2003) and sexual assault (e.g., Frazier, Tashiro, Berman, Steger, & Long, 2004). Intrusive thoughts are also related to posttraumatic growth (e.g., Helgeson et al., 2006; Updegraff & Marshall, 2005).

Research assessing whether meaning-making attempts lead to meanings made other than growth has yielded mixed findings. For example, one study found that religious coping—but not coping through social support, acceptance, or positive reinterpretation—was related to the feeling of parents that they had made sense of their child's Asperger syndrome (Pakenham et al., 2004). Cross-sectionally, positive reinterpretation by cancer survivors related to their sense of having made meaning (Fife, 1995), and longitudinally, chronically ill patients' emotional processing, a type of meaning-focused coping, predicted increased ratings of goals as important but also unattainable over a 3-month period (De Ridder & Kuijer, 2007).

Clearly, meaning-making attempts do not always lead to meaning made. Reviewing the literature, Davis et al. (2000) concluded that people who reported asking "Why me?" often reported having no answer to the question. For example, in a study of people living with tinnitus, 41.9% reported asking the question but not finding an answer; only 17.5% reported finding an answer (Davis & Morgan, 2008). For patients with stroke and their spouses, searching for a cause was unrelated to finding a cause or finding meaning (Thompson, 1991). For bereaved parents, meaning making was not related to subsequently "having made sense or found meaning" (McIntosh, Silver, & Wortman, 1993). Further, in several studies, items inquiring about "searching for meaning" and "finding meaning" were uncorrelated (Lepore & Kernan, 2009; Updegraff et al., 2008; Wu et al., 2008). However, Wu et al. (2008) found that

“searching for *positive* meaning” was strongly related to “finding meaning” and particularly to “finding positive meaning.”

These findings suggest that the specific operational definitions used largely determine answers to questions regarding how meaning-making attempts relate to meaning made. It appears that attempts to make meaning, variously defined, sometimes but not always lead to meaning made, but the range of meaning-making strategies and meanings made investigated to date is fairly limited. Additionally, many studies that assessed both meaning-making attempts and meaning made did not examine how the two relate (see last column, Table 3).

Do meaning-making attempts lead to adjustment? Given the different definitions and study designs used to address this question, it is not surprising that findings are conflicting (see Tables 1 and 3). Some studies have found that searching for meaning relates to better adjustment to the stressful encounter. For example, for office workers who had experienced a shooting episode, meaning making predicted reductions in distress 1 year later (Creamer et al., 1992). An analysis of the SIDS-bereaved parent data found that although meaning-making attempts were negatively related to adjustment cross-sectionally, they predicted subsequent higher levels of well-being and lower levels of distress (McIntosh et al., 1993). In the context of psychotherapy, Hayes, Beevers, Feldman, Laurenceau, and Perlman (2005) found that higher levels of meaning-making attempts (assessed by coding qualitative data) predicted subsequent reductions in depression and increases in perceived growth and self-esteem.

On the other hand, as shown in Tables 1 and 3, meaning-making attempts, variously defined, have also been related to poorer adjustment in many studies. For example, for the recently spousally bereaved, “searching for meaning” predicted poorer subsequent adjustment to the loss (Bonanno et al., 2004). Similarly, meaning-making efforts in breast cancer survivors predicted increased negative affect 7 months later (Lepore & Kernan, 2009).

If meaning making is defined more broadly to include a variety of coping strategies (e.g., Folkman, 1997), the wider literature regarding effects of the use of coping involving positive reinterpretation, religious coping, emotional social support, acceptance, and emotional processing coping on adjustment should also be considered. Of course, the coping literature is vast and heterogeneous, and it presents its own set of conceptual and methodological challenges lying beyond the scope of this review (see Skinner, Edge, Altman, & Sherwood, 2003). Some research has shown meaning-making coping to be helpful (see Folkman & Moskowitz, 2004). A meta-analysis of religious coping found that positive religious coping, much of which involves positive religious appraisals and acceptance, was related to better adjustment to stressful situations (Ano & Vasconcelles, 2005), but another meta-analysis found that positive reappraisal was unrelated to physical well-being and inversely related to psychological well-being (Penley, Tomaka, & Wiebe, 2002). The few studies that have explicitly defined meaning-making efforts as a subset of coping as conventionally assessed with coping instruments have yielded inconsistent results, with some finding positive relations (e.g., Park et al., 2001), others finding negative relations (e.g., Stanton, Danoff-Burg, et al., 2000), and still others finding none (e.g., Danhauer et al., 2005; see Tables 1 and 3). These mixed findings regarding whether meaning-making attempts are related to better adjustment

may be due to the different methods employed, particularly assessment strategies and time frames.

In addition, it has been proposed that an important dimension of meaning-making efforts is whether they represent “judgmental” processes or simply reflective searching (Watkins, 2008). A recent study found that when participants took a more “mindful,” non-judgmental approach, repetitive thoughts were not related to more distress (Rude, Maestas, & Neff, 2007). Similarly, experimental studies have found that directing participants to engage in an experiential rather than an evaluative mode of emotional processing led to better adjustment to failure (Watkins, 2004), and directing participants to process an anger-eliciting interpersonal situation with self-distanced reflection and a focus on their feelings rather than the reason for their feelings was related to subsequent lower levels of emotional reactivity (Kross, Ayduk, & Mischel, 2005). It may be that the quantity of meaning-making efforts is less important than their quality or character. To date, little meaning-making research has attended to these dimensions, perhaps accounting for some of the inconsistencies in findings regarding links with adjustment. In addition, inconsistencies may be due to the lack of assessment of end products, which may determine the ultimate effects of meaning-making efforts.

Do meaning-making attempts lead to adjustment especially if—or only if—meaning is made? That meaning-making attempts will be helpful primarily when some adaptive resolution is achieved or meaning is made through the process is an intriguing hypothesis (Davis et al., 2000; Manne, Ostroff, Fox, Grana, & Winkel, 2009; Segerstrom et al., 2003). Many studies have examined the products of meaning making without explicitly assessing meaning making per se (see Table 2). These studies assume that meaning making has occurred and often ask participants about the sense or the meaning that they have made or found. Many of these studies have been conducted cross-sectionally, precluding the sorting out of causal or even temporal relations between made meaning and psychological adjustment outcomes. Most of these cross-sectional studies report positive relations between meaning made and adjustment (e.g., Currier et al., 2006).

Some longitudinal studies have also found that reports of a successful “search for meaning” related to subsequent adjustment (e.g., Thompson, 1991), but others found no relation (e.g., Lepore & Kernan, 2009). For example, for parents of a child with Asperger syndrome, having made sense of their child’s disorder was unrelated to their distress, health, or social adjustment (Pakenham et al., 2004). Having answered the question “Why me?” has been inconsistently related to adjustment, with both positive relationships (e.g., Affleck, Tennen, & Gershman, 1985) and null relationships (e.g., Davis & Morgan, 2008) reported.

However, as discussed earlier, meaning-making attempts can produce other meanings, including posttraumatic growth, changes in identity, and changes in situational and global meaning. As shown in Table 2, many of these meanings made have been positively linked to adjustment. For example, in a sample of people who had lost their homes in a fire, a more benign reappraised situational meaning of their loss was related to less distress (Thompson, 1985). Positive shifts in global meaning are also related to better adjustment. For example, high school students who transformed their understanding of themselves and the world as a result of a life turning point showed subsequent increases in optimism, generativity, and identity development (McLean &

Pratt, 2006). Finally, a study of sexual assault survivors found that positive shifts in situational (less self-blame for their assault) and global meaning (more positive global beliefs) predicted less distress across 2 years (Koss & Figueredo, 2004).

Note, however, that none of the studies included in Table 2 directly assessed meaning-making attempts, yet the question of whether meaning-making attempts are particularly or only associated with adjustment to the extent that meaning is made can only be addressed by studies that examine not only both meaning-making attempts and meaning made but also relations between them as well as with adjustment (i.e., mediator or moderator effects). Some studies listed in Table 3 investigated both meaning-making attempts and meaning made but not the relations between them.⁷ Instead, like studies listed in Tables 1 and 2, they reported associations between meaning-making attempts and adjustment as well as between meaning made and adjustment. Although mixed, results generally show that meaning-making attempts are linked with distress but meaning made is linked with better adjustment. For example, the extent to which wives of men with prostate cancer were searching for meaning was related to higher levels of distress, and the extent to which they had found meaning was related to less distress (Eton et al., 2005). Similar results were reported for samples of mothers bereaved by perinatal loss (Uren & Wastell, 2002) and by unsuccessful bone marrow transplantation (Wu et al., 2008), as well as in a sample of survivors of incest (Silver et al., 1983).

Studies examining meaning-making attempts and meaning made as attributions have also reported inconsistencies. In parents dealing with pre- or perinatal loss, the extent of searching for meaning and asking "Why?" was related to poorer adjustment and having an answer to the question of "Why?" was related to better adjustment (Jind, 2003). In parentally bereaved college students, having an answer to the question "Why?" was related to less intense grief (Schwartzberg & Janoff-Bulman, 1991). However, Gotay (1985) found that levels of adjustment among cancer survivors were unrelated to their having an answer to "Why?" All of these studies were cross-sectional. In contrast, in the longitudinal SIDS-bereaved parent study, meaning making related to better subsequent adjustment, although reports of having found meaning or made sense were unrelated (McIntosh et al., 1993). Yet none of these studies took the next step, examining the links among meaning making, meaning made, and adjustment.

Studies that directly reported on relations among meaning-making attempts, meaning made, and adjustment should be the most informative on this question. Many such studies concluded that participants who reported searching for and finding meaning were no better off than those who never searched but that both groups were better off than those who searched without finding, such as the bereaved spouses or parents from motor vehicle accidents (Davis et al., 2000) and the SIDS-bereaved parents (Downey et al., 1990). In a study of spousally bereaved adults, those classified as more resilient were more likely to report either not searching for meaning or searching and finding meaning than were those classified as chronic grievers (Bonanno et al., 2004). Some studies have even reported that those who never searched for meaning were better adjusted than those who searched, even if they reported that their search resulted in meaning made (e.g., Davis & Morgan, 2008), although other studies suggest that finding meaning can mitigate the negative impact of searching

(Michael & Snyder, 2005). In the nationally representative sample of U.S. adults after the 9/11 terrorist attacks, searching for meaning shortly afterward was related to subsequent increased PTSD symptoms, regardless of whether meaning was found (Updegraff et al., 2008). However, finding meaning at 2 months exerted a positive effect on adjustment up to two years later, reflected in declining PTSD symptomatology (Updegraff et al., 2008).

On the other hand, numerous studies have reported that, compared with not having searched, meaning-making attempts resulting in meaning made are indeed related to better adjustment (e.g., Tolstikova et al., 2005). For example, the above-mentioned study of bereaved HIV+ men found that cognitive processing that led to perceiving positive meaning from bereavement was related to better physical health (less rapid declines in CD4 T cell levels and lower rates of AIDS-related mortality; Bower et al., 1998). However, those who searched and did not find meaning did not differ from those who did not search (Bower et al., 1998). A recent extension of Bower et al. (1998) in HIV+ women, using similar definitions and coding, found that meaning making (cognitive processing) predicted finding meaning (posttraumatic growth), which was related to higher medication adherence (Westling, Garcia, & Mann, 2007). In a sample of bereaved parents, meaning-making attempts, assessed as religious coping, was associated with having found meaning, which was associated with better adjustment (Murphy, Johnson, & Lohan, 2003), a secondary finding also reported for the sample of bereaved adults described by Davis et al. (1998) above (Nolen-Hoeksema & Larson, 1999). In samples of longer term cancer survivors, meaning making was also related to meaning made, which was related to better adjustment cross-sectionally (Fife, 1995) and longitudinally (Park, Edmondson, et al., 2008). Similar findings were reported for middle-aged women going through a difficult life experience (Pals, 2006). Meaning-making attempts were longitudinally related to better adjustment for people with a limb amputation and also predicted meaning made (posttraumatic growth), but growth did not predict adjustment (Phelps et al., 2008). A study of partners of women with breast cancer that examined three different types of meaning-making attempts and three different types of meaning made suggests that specific types of meaning making and meanings made differentially influence their impact on distress (Manne et al., 2009; see Table 3). Four of 10 statistical tests of this meaning making/meaning made hypothesis yielded support. For example, searching for meaning predicted increased cancer-specific distress over time, an effect somewhat attenuated by having found meaning, but for those using emotional expression, positive reappraisal (their proxy for having found a more positive perspective on the cancer) predicted less global distress over time.

In sum, the question of whether meaning-making attempts are helpful to the extent that they lead to the actual making of meaning cannot yet be definitively answered, because so few studies have explicitly examined the necessary linkages and interactions. However, some preliminary conclusions can be drawn. Many studies have found links between meaning-making attempts (variously defined) and poorer adjustment, but those that have examined the

⁷ Table 3 flags those studies that did not examine relations among meaning making, meaning made, and adjustment (i.e., that did not report mediating or moderating effects).

conjoint relationships of meaning-making attempts and meaning made with adjustment, particularly those using longitudinal designs, suggest that meaning-making attempts that lead to meanings made can indeed be helpful (e.g., Manne et al., 2009). The limitation in most of the studies testing this linkage is that the measure of meaning-making attempts was unrelated to the measure of meaning made (e.g., Updegraff et al., 2008). Specific types of meaning-making efforts appear to result in specific types of meanings made, which have different effects on subsequent adjustment (Manne et al., 2009; Phelps et al., 2008).

Is meaning making necessary for recovery? Depending on how the question is phrased, many studies have reported that a substantial minority of people do not report meaning making following a range of potentially stressful situations (e.g., Updegraff et al., 2008). What does this reported lack of meaning making imply for the meaning-making model? Assuming that there is some validity to the measurement approaches taken in these studies, it could suggest that the model does not universally apply. It could also mean that some individuals were able to assimilate the occurrence into their global meanings rather than go about the presumably harder work of accommodation, which might reduce the experiencing of searching for meaning (Davis et al., 2000). Or it may mean that some individuals initially appraised the situation in a way that was consistent with their global meaning, obviating the need for meaning making altogether. Davis et al. (2000) explained the 14% of SIDS-bereaved parents who said they never searched for meaning this way:

The loss did not appear to raise existential, philosophical questions. . . . One of the most important determinants of whether a search for meaning will be initiated concerns whether the event can be reconciled with one's "working models" . . . or assumptions about the world. . . . Presumably, these individuals possessed worldviews that allowed them to incorporate such events. (p. 514)

However, that accommodation process is also a type of meaning making, albeit perhaps not one people label as such, or perhaps not even one in which people recognize that they are engaging. However, although it is possible that the event was already consistent with the preexisting belief system of parents, it seems unlikely that having their baby die of SIDS was entirely concordant with their global goals. Thus, these findings may be partly due to individual differences in pre-event global meanings and partly due to the lack of concordance between traumatized individuals and researchers in the definitions and assessments of meaning making.

Do global and appraised meanings change over time through attempts to make meaning? Unlike the question addressed above regarding whether events shatter global meaning, this question concerns the effects not of the event itself but of subsequent meaning making on situational and global meaning (i.e., the extent to which, through automatic or deliberate meaning making, people subsequently shift their global and situational meaning). Surprisingly few studies have tracked changes in appraised meaning of a highly stressful event over time, and those that have report conflicting findings. A study of breast cancer survivors found that 85% appraised their cancer shortly after diagnosis as a challenge or value; at the 3-year follow up, 79% maintained this positive view (Degner, Hack, O'Neil, & Kristjanson, 2003). Mean levels of perceived threat for pregnant women who had previously lost a pregnancy remained stable across a

subsequent pregnancy (Côté-Arsenault, 2007). A longitudinal study of people living with rheumatoid arthritis found decreases in threat appraisals and stability in challenge appraisals (Schiaffino & Revenson, 1995). Winje (1998) found that appraisals of a fatal bus accident as random remained stable from baseline to 5 years post-accident. In studies of bereaved parents of infants, Jind (2003) found that attributions of self-blame and God blame decreased across the year and Downey et al. (1990) found that attributions to themselves and to God declined significantly over time, while attributions to others and to chance remained relatively stable.

Reports of global meaning change are even scarcer, especially those examining meaning making or distress as potential drivers of change. Some literature has documented that life goals generally change with age (e.g., Wrosch, Heckhausen, & Lachman, 2006), although these reports do not specifically reference stressful events. One study found that global beliefs of sexual assault survivors became more positive over 2 years (Koss & Figueredo, 2004), but a longitudinal study found no shifts in global beliefs from shortly after a myocardial infarction to 6 months later (Ginzburg, 2004), with the exception that for those who had PTSD, statistically significant change occurred in one of the eight subscales of global meaning assessed by the WAS (i.e., decreased belief in luck). Similarly, for a group of bereaved adults, depressive and PTSD symptoms 4 months postloss predicted subsequent changes toward more negative global beliefs at 18 months postloss (Mancini & Bonanno, 2008). These tentative findings are consistent with the notion that distress drives change in meaning.

Intervention outcome studies have provided evidence that clients sometimes change their situational and global meaning (e.g., Feeny & Foa, 2006; Sobel, Resick, & Rabalais, 2009) but not always (e.g., Owens, Pike, & Chard, 2001). Further, the mechanisms through which change may occur are not clearly understood (for a review, see Garratt, Ingram, Rand, & Sawalani, 2007). Studies have shown that, in cognitive therapy, the interpretations of clients of themselves and their situations change. For example, Foa and Rauch (2004) found that exposure therapy mitigated PTSD symptoms by changing global and situational beliefs (assessed with the Post-Traumatic Cognitions Inventory [PTCI]; Foa et al., 1999). However, the cognitive restructuring component of the therapy did not affect PTCI scores or PTSD symptoms.

Few studies have explicitly examined changes in discrepancy. One study that did found that, for college students dealing with recent significant loss, appraised discrepancies of the loss with global meaning changed over a 6-week period. Approximately a third of participants decreased their perceived discrepancy on most assessed dimensions, including violation of belief that God is in control and of global goals. However, for approximately 20%–30%, perceptions of discrepancy in these dimensions increased over time (Park, 2008b).

What do expressive writing studies contribute to the empirical literature on meaning making? Expressive writing (EW), which generally involves asking participants to write about a highly stressful experience (particularly their deepest thoughts and feelings), usually in multiple sessions, produces better physical and psychological well-being (for a review, see Pennebaker & Chung, 2007). One of the proposed mechanisms for these effects is helping participants to make meaning of their stressor (Boals & Klein, 2005; Pennebaker, 1997). Presumably, writing about one's

thoughts and feelings about a stressor is a form of meaning making, so, in a general way, these positive findings appear supportive of meaning making, although alternative mechanisms (e.g., habituation, desensitization) are also plausible (Sloan et al., 2007). Therefore, EW studies that explicitly assessed aspects of the meaning-making model are more informative about the role of meaning making in adjustment.

Participants' EW narratives demonstrate increased use of words thought to reflect meaning making (defined as words indicating causal connections and insight reflecting cognitive processing; e.g., *because, think, realize*) over the days of writing relative to those of control participants, who typically write about topics considered inert (e.g., Donnelly & Murray, 1991; Murray, Lamnin, & Carver, 1989; Ullrich & Lutgendorf, 2002). EW also leads to increased organization of narratives and increased reported acceptance of the event (Pennebaker, 1993).

EW studies have demonstrated that participants whose narratives increase in meaning making across the study are most likely to benefit from EW. For example, in a reanalysis of data from six previous EW experiments, increased use of words associated with meaning making were linked to improved physical (but not mental) health (Pennebaker, Mayne, & Francis, 1997). Also, in a study of HIV+ participants writing about living with HIV, EW participants whose narratives evinced increased meaning making had better immune function and reported more positive changes at follow-up (Rivkin, Gustafson, Weingarten, & Chin, 2006). Similar findings have been reported for caregivers of ill children (Schwartz & Drotar, 2004) and survivors of breast cancer (Owen et al., 2005). One study of college students found the beneficial effects of EW on depressive symptoms were mediated by reductions in brooding, but not reflective rumination, suggesting that EW reduces judgmental aspects of rumination (Gortner, Rude, & Pennebaker, 2006).

Several EW studies have demonstrated that meaning was made through the process of writing. Undergraduates (Ullrich & Lutgendorf, 2002) and people diagnosed with PTSD (Smyth, Hockemeyer, & Tulloch, 2008) who wrote about their thoughts and feelings about a trauma reported increased posttraumatic growth relative to those in the other conditions. However, an EW intervention did not affect shifts in global goals in bereaved women (Bower et al., 2003).

Further, some EW studies have demonstrated that increases in words signifying that meaning has been made mediate some of the positive benefits of the writing. For example, in studies of undergraduates writing about a previous trauma, increased positive cognitive appraisal (e.g., increased discussion of alternative explanations) predicted decreases in Epstein-Barr virus antibody titers (Esterling, Antoni, Fletcher, Margulies, & Schneiderman, 1994) and was related to shifts in appraised meaning, although not to changed global meaning. In particular, participants viewed their stressors as less uncontrollable, threatening, and stressful over time. These shifts in situational meaning were related to some, but not all, indices of mental and physical adjustment (Park & Blumberg, 2002).

Not all EW studies support the notion of meaning making as occurring as the result of EW or as mediating its salutary effects. For example, a study of "story-making" (deliberately making stories coherent and meaningful) did not predict participants' health (Graybeal, Sexton, & Pennebaker, 2002). Several EW stud-

ies failed to demonstrate that meaning making (as reflected in coded narratives) was related to improvements in well-being (e.g., Cordova, Cunningham, Carlson, & Andrykowski, 2001; Ullrich & Lutgendorf, 2002) or mediated the improvements experienced by participants in the EW condition (Creswell et al., 2007; Low, Stanton, & Danoff-Burg, 2006). Other studies examining whether participants' situational or global meaning changed as a result of writing also reported null results (e.g., Lepore & Greenberg, 2002; Lestideau & Lavallee, 2007). For example, for people about to take a major exam, EW did not reduce the frequency of intrusive thoughts about the exam but did reduce the extent to which those intrusions caused distress (supporting an explanation of habituation rather than meaning made; Lepore, 1997; cf. Zakowski et al., 2001).

Firm conclusions about meaning making cannot be made on the basis of EW studies, because most have not explicitly tested critical elements of the meaning-making model. For example, few examined changes in global or situational meaning, and virtually none examined discrepancy or violation between them, let alone whether EW reduced that discrepancy. Another limitation of most EW studies examining meaning making is their use of computerized word coding (e.g., Linguistic Inquiry and Word Count), which does not distinguish between productive meaning making and unproductive rumination. Further, most studies hypothesized that increased meaning making would be related to better adjustment, yet conceptually, increased meaning made and decreased meaning making over time (signifying resolution) would seem to better support the meaning-making model. Based on the operational definition of meaning making used in most EW studies, the use of words that signify insight or causation might suggest some meaning has been made or could reflect a continued search. Finally, most EW studies occur well after the target stressful events have occurred. Thus, although the EW paradigm is a promising approach to examine meaning-making processes experimentally, researchers have not yet maximized its potential to illuminate the validity of the meaning-making model.

What happens if meaning-making attempts do not lead to meaning made? According to the meaning-making model, unsuccessful attempts at integrating information regarding the stressful event into one's global meaning necessitate continued meaning making. Some researchers have suggested that unproductive meaning-making attempts are akin to rumination and distress (e.g., Michael & Snyder, 2005), although it is unclear when meaning making crosses the line from productive to nonproductive. Examining this issue empirically is very difficult, and few studies have reported data relevant to it.

Studies showing negative relations between well-being and long-term searching (e.g., in the incest survivors studied by Silver et al., 1983) are often cited as evidence that continued meaning making is related to poorer adjustment (e.g., Davis et al., 2000). The longitudinal study of people bereaved by a bus accident found that reporting a need to have information 1 year postaccident was unrelated to distress, but by 5 years postaccident, the need for information was related to higher distress (Winje, 1998). Similarly, a study of bereaved family members found that searching for meaning became more strongly related to distress from 4 to 14 months postbereavement (Cleiren, 1993). Ongoing meaning mak-

ing, then, may come to reflect unsuccessful adaptation over time, but a more definitive answer awaits firmer evidence.

Is all meaning made equal, or are some meanings made more helpful than others? Some researchers have concluded that the important fact regarding meaning making is whether any product of that process is identified (e.g., Dollinger, 1986). On the basis of her work with breast cancer survivors, Taylor (1983) noted that attributional explanations may be functionally interchangeable (p. 1162). Similarly, summing up their study of bereavement, Davis et al. (1998) concluded that having any understanding was preferable to having none and that the content of that understanding did not seem to matter. On the other hand, many studies have demonstrated that various attributions are differentially related to well-being. For example, a recent meta-analysis found that attributions to controllable causes were associated with positive psychological adjustment and attributions to stable and uncontrollable causes were associated with negative psychological adjustment to a variety of illnesses (Roesch & Weiner, 2001). Self-blame attributions were associated with distress in breast cancer survivors (Glinder & Compas, 1999) and in parents bereaved by SIDS (Downey et al., 1990).

These results suggest that, at least regarding one type of meaning made, attributions, the content does influence adjustment. However, attributions represent only a small part of the universe of potential types of meaning made. Much more research is needed on various dimensions and types of meaning made, including reappraised global and situational meaning, identity reconstruction, and other products of meaning making.

Can meaning made be negative? Some authors have discussed the issue of “negative meaning” (Wright et al., 2007). For example, a sample of adult women who had experienced child sexual abuse listed, as perceived benefits from the abuse, becoming less naive and less trusting of people (McMillen, Zuravin, & Rideout, 1995). Although a shift toward more negative beliefs may be the end product of meaning making, perhaps allowing the cessation of meaning-making attempts, such negative meanings made may not be related to indices of better adjustment. For example, in a sample of Dutch World War II survivors, the effects of recollected war stress on current distress were fully mediated by negative global beliefs, which, the study concluded, were due to participants’ war experiences (Bramsen, van der Ploeg, van der Kamp, & Adèr, 2002). However, based on the meaning-making model, such shifts, if outcomes of meaning making, are indeed meanings made, regardless of their valence. These shifts may reduce discrepancy by allowing reintegration of global and appraised meaning (leading to less distress) yet also lead to more distress, given their disturbing implications. Researchers must examine this question in more depth, while also remaining aware of the inherent value judgments they are making in deeming particular meanings “negative.”

What is the time course over which meaning making occurs and meaning is made? Meaning making is typically described as occurring over time (Janoff-Bulman & Frantz, 1997; Updegraff et al., 2008), but the time frame has not been clearly specified. Some cross-sectional research suggests that meaning-making attempts and meaning made can occur soon after a stressful event (e.g., Davis et al., 2000). For example, in a study of sexual assault survivors, posttraumatic growth was reported by most participants 2 weeks after the assault (Frazier, Conlon, & Glaser, 2001).

Further, meaning-making attempts appear to diminish over time, as demonstrated in both cross-sectional (e.g., Silver et al., 1983) and longitudinal (e.g., Bonanno et al., 2004; Cleiren, 1993) studies.

Janoff-Bulman and Frantz (1997) proposed that people focus on comprehensibility earlier and on significance later in the meaning-making process. To examine this proposition in several studies of bereavement, Davis and his colleagues (1998, 2000) operationalized Janoff-Bulman and Frantz’s (1997) scheme as finding a reason why the death occurred (sense making) and finding something positive in it (benefit finding). Analyzing data from the longitudinal study of parents coping with the sudden death of their infant, Davis et al. (2000) reported that meaning was found early, if it was found at all, concluding, “If the bereaved are going to find meaning, typically they do so within the first few weeks following the loss” (p. 509). Murphy et al. (2003) also reported support for the changing nature of meaning making by coding bereaved parents’ open-ended responses to the question “How have you searched for meaning in your child’s death as well as in your own life?” posed multiple times over a 5-year period. One year after the death, only 12% of parents reported meaning coded as reflecting significance, but by 5 years, 57% had.

In general, some evidence supports the notions that meaning-making processes occur over a period of time and that the nature of these processes changes as well. Much more research is needed to specify the time course and its determinants.

Summary of the Empirical Support for the Meaning-Making Model

Support has been thoroughly documented for some aspects of the meaning-making model. In particular, it is clear that meaning-making attempts and meanings made are reported by most individuals facing highly stressful events. In fact, it seems logical that some sort of cognitive readjustment or meaning-making process must occur following experiences of events that are greatly discrepant with one’s larger beliefs, plans, and desires. Summarizing evidence on meaning making, which she referred to as *ruminative thinking*, Filipp (1999) concluded, “In victims of life crises and trauma, the transformation of objective reality into their ‘interpretive realities’ can only be accomplished by ruminative thinking” (p. 71). Whether assimilative processes constitute meaning making is not universally agreed upon (e.g., Bonanno et al., 2002; Davis et al., 2000), but assimilation and accommodation together are common.

Literature also solidly supports the notion that appraised meanings of violation are related to distress, whether these violations are appraised directly (e.g., Park, 2008b) or indirectly (e.g., as appraisals of threat or loss; Aldwin, 2007). In addition, the quality of the meaning-making attempts and the meanings made is at least as important as the quantity. For example, evidence is accumulating from various research areas that meaning making and meanings made that involve blame and negative evaluations typically lead to poorer outcomes and that those involving nonjudgmental reflection lead to better adjustment (see Gortner et al., 2006; Treynor et al., 2003; Watkins, 2008). These latter findings suggest that a finer grained analysis of the types of meaning making in which individuals engage will prove fruitful in sorting out the effects of meaning-making efforts on adjustment.

Other aspects of the model have received some support but clearly require more scrutiny. Among these is the extent to which global meaning undergoes change; shattering appears to be an inaccurate description of the impact of major stressors on global meaning. As noted, however, violations of global meaning appear to be common and related to distress, but whether discrepancies between global and appraised meaning underlie meaning-making efforts to restore congruence has received minimal attention and mixed support. Further, the extent to which meaning-making attempts lead to meaning made is not clear; partly because a very narrow range of both meaning making attempts and meanings made has typically been assessed. Similarly, the notion that meaning-making efforts lead to adjustment, particularly if they lead to meanings made, has received some support but requires much more careful examination. Recent research suggests that different types of meaning-making attempts relate differentially to different types of meaning made, which, in turn, relate differentially to adjustment (e.g., Manne et al., 2009; Park, 2008b; Wu et al., 2008).

Still other critical components of the model remain little more than conjecture. For example, it remains unknown whether distress (arising from perceived discrepancies between global and appraised meaning) drives meaning making. Further, very little research has examined whether global and situational meanings change over time, especially as a result of meaning making. Nor has research clearly explicated the time frames over which these processes occur, such as when meaning-making attempts shift from being helpful in leading to adaptive meaning made to being a negative influence on well-being, reflecting rumination.

Directions for Future Research

Many issues regarding the meaning-making model require more and better research. Given the limitations in the ways that researchers have approached these topics, it is clear that advances in methodology are necessary before research on meaning making can move forward.

Methodological Improvements

Study design issues. Prospective, longitudinal research designs are essential for capturing the dynamic processes that constitute meaning making. Longitudinal designs are challenging, but many researchers have demonstrated their feasibility (e.g., Bonanno et al., 2005). Prospective studies are even more challenging, given the necessity of assessing samples prior to the occurrence of highly stressful events. Creative (and lucky) researchers have shown the way here as well—by, for example, studying high-risk populations such as elderly couples (e.g., Bonanno et al., 2004) or by capitalizing on the occurrence of a wide-scale tragedy that occurs in the midst of an ongoing study (e.g., 9/11 terrorist attacks, Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002; Loma Prieta earthquake, Nolen-Hoeksema & Morrow, 1991). In addition, experimental approaches have proved useful in examining meaning-related phenomena (e.g., Heine et al., 2006); role-plays, analogues, or simulations could be useful in provoking and examining meaning-making processes. In addition, new, powerful statistical techniques, combined with multiple assessments, can illuminate important issues such as timing, group trajectories, and individual differences.

Measurement issues. This review makes clear the limitations of current measurement strategies. Although researchers will likely continue to rely heavily on self-report instruments, in spite of their well-known limitations (e.g., Paulhus & Vazire, 2007), they should strive to go beyond self-reports when possible (Baumeister, Vohs, & Funder, 2007) and use creative alternative approaches to more thoroughly capture meaning-making constructs. Some suggestions are offered here.

Widely used self-report measures of both global and situational meaning are available (e.g., the WAS; Janoff-Bulman, 1989). Several measures have more recently been introduced to assess the extent to which global beliefs have been affected by trauma (e.g., PTCI, Foa et al., 1999; Trauma and Attachment Belief Scale, Pearlman, 2003; Personal Beliefs and Reactions Scale, Resick et al., 2008). However, these latter measures confound situational and global meanings. This limits their utility as global meaning measures, leaving researchers who seek solid measures of global beliefs to use measures such as the WAS or the Scale to Assess Worldviews (Ibrahim & Kahn, 1987) or to select scales assessing specific domains (e.g., the Just World Scale; Lerner, 1980). Useful measures of global goal assessment instruments include the Life Goals Inventory (Bower et al., 2003) and the Personal Projects Analysis (Little, 2009). Measures of appraised situational meaning include the Stress Appraisal Measure (Peacock, Wong, & Reker, 1993) and the Appraisal of Life Events Scale (Ferguson, Matthews, & Cox, 1999).

Several studies have developed ad hoc measures of discrepancies between situational and global meaning (e.g., Boersma, Maes, & Joekes, 2005; Park, 2008b). Although these measures represent a promising approach, it remains to be demonstrated that individuals can meaningfully report directly on discrepancies. Thus, alternative approaches may be needed to capture discrepancy or at the very least to demonstrate the validity of self-report scales. Alternative approaches may include analysis of natural language, perhaps through coding of content of spoken or written records such as essays or diaries (e.g., Pennebaker, Mehl, & Niederhoffer, 2003), or coding of autonomic nervous system functioning (e.g., Giese-Davis, Conrad, Nouriani, & Spiegel, 2008) or facial expression (e.g., Bonanno & Keltner, 2004). For example, coding of such data recorded as participants discussed their understanding of an event vis-à-vis their global meaning could reveal extent of discrepancies as reflected in word choices, cohesiveness of the narrative, or unconscious signals of distress. Experimental approaches may also prove useful in identifying the extent of global meaning violation (e.g., as reflected in cognitive interference or information accessibility; Bressan, Kramer, & Germani, 2008; see Reis & Judd, 2000). For example, the extent to which a participant's global and situational meanings are discrepant might be revealed in longer reaction times or less working memory capacity (Klein & Boals, 2001). The use of such alternate methods may also prove informative regarding the validity of self-report measures.

Improvements have recently been made in assessing the meaning-making processes through which people deliberately (and perhaps unconsciously) attempt to reduce discrepancies. For example, new measures of meaning-making efforts have been developed (e.g., Williams et al., 2002), and researchers have begun to attend to both deliberate and automatic aspects of meaning making (e.g., Roberts et al., 2006). Others have developed complex coding schemes for qualitative data (e.g., Graham, Lobel, Glass, & Lok-

shina, 2008); again, a focus on natural language may reveal unconscious as well as deliberate attempts (cf. Bower et al., 1998), particularly if employed across time, such as in EW research. Experimental approaches have been used to indirectly assess meaning making (e.g., as reflected in reduced memory capacity; Klein & Boals, 2001) and may be usefully further developed.

Given the wide range of potential meanings made, researchers must broaden their assessments by examining shifts in global and situational meaning (cf. Resick et al., 2008) as well as identity change, resolution, and other aspects of made meaning. Self-report measures of these constructs are available but should be used prospectively to assess change. Greater understanding of these changes might be gleaned through other assessment approaches, such as informant reports or laboratory-based evidence of resolution (Rachman, 2001). For example, researchers can ask informants about the extent to which a participant's beliefs, goals, or behavior has changed as a result of a traumatic event (e.g., Park, Cohen, & Murch, 1996) or can examine the extent to which a person becomes upset when discussing an event.

Testing and Extending the Meaning-Making Model

Upon satisfactorily addressing these vexing methodological issues, one can address a world of intriguing issues to test and extend the meaning-making model. Virtually all of the questions posed in this review require further research using more sophisticated methods. Many other issues raised by the meaning-making model will also become more amenable to research, including the following.

Global meaning violation. One intriguing question involves the circumstances under which global meaning can be violated. Perceptions tend to be biased toward preexisting beliefs through selective attention and highly accessible schemas (e.g., Plaks et al., 2005). Violations occur when situations are so discrepant that they cannot be easily incorporated into existing meaning (Janoff-Bulman, 1992). However, the conditions under which an individual's mental system determines whether to overlook or register discrepant information, given that global meaning in large part determines situational meaning, remain unspecified. This line of inquiry might benefit from cognitive neuroscience approaches to meaning making (Park & McNamara, 2006), such as mapping the circumstances under which individuals take in or fail to notice meaning-discrepant information.

Further, certain types of global meaning may be protective, but others may leave people especially vulnerable to experiencing violations. For example, beliefs that acknowledge that very negative, random, and unfair events can happen to good people may be protective (Thompson & Janigian, 1988). Beyond content, complexity (Linville, 1987), coherence (Pöhlmann et al., 2006), or suppleness may also be important aspects of global meaning. Some types of meaning systems may better absorb difficult information without experiencing discrepancies (Bonanno et al., 2002). For example, some religious meaning systems appear to buffer against stress (e.g., Fabricatore, Handal, & Fenzel, 2000) and allow adherents to perceive that their goals may be reached even in highly adverse circumstances (e.g., Jacobs, Burns, & Bennett Jacobs, 2008). These notions deserve research attention, for, as global meaning systems that buffer stress and allow assimilation of events rather than necessitate the (presumably) more difficult processes of

accommodation that renovation of global meaning entails (Bonanno et al., 2002), they hold clues to resilience.

Social and cultural aspects of meaning making. Some researchers have argued that meaning making occurs not only intrapsychically but also interpersonally. That is, talking with others and getting their perspectives can facilitate (or impede) meaning making (e.g., Clark, 1993). For example, Lepore et al. (1996) found that meaning making was facilitated for those who were validated by others but that social constraints inhibited the making of meaning. Researchers have even postulated the existence of "family meaning making" (e.g., Nadeau, 2001; Patterson & Garwick, 1994).

In addition to immediate social environments, the broader culture in which individuals are situated may exert effects on individuals' meaning-making processes. Neimeyer, Prigerson, and Davies (2002) noted that, in bereavement, meaning making also "resides and arises in language, cultural practices, spiritual traditions, and interpersonal conversations, all of which interact to shape the meaning of mourning for a given individual" (p. 248). Culture can influence global (e.g., Tweed & Conway, 2006) as well as situational meaning (e.g., Chun, Moos, & Cronkite, 2006).

Personal and environmental factors that facilitate or inhibit meaning making. As discussed above, global meanings may account for differences in individuals' processes of meaning making and their effects on adjustment. Wortman (1983) noted,

Relatively stable life philosophies or agendas may also influence the appraisal process. People who have an underlying philosophy of "all things have a purpose . . . or work out for the best" will undoubtedly appraise a potentially stressful situation differently than people without such a philosophy. Similarly, people who consistently enter various domains of life with particular agendas (e.g., learning as much as one can, doing the best one can) may react differently than those with other agendas or no agendas. Thus far, the impact of one's life goals, philosophies, or agendas on the appraisal or coping process has received almost no attention. (p. 210)

Sadly, over 25 years later, this is still the case. Further, the personal and social resources available may influence the extent to which individuals engage in meaning making as well as the nature and eventual outcomes of that meaning making (Updegraff et al., 2008). However, little is known about the influence of these contextual variables. This area may yield important insights as well as implications for clinical work helping people adjust to stressful circumstances.

Interventions. Interventions explicitly targeting issues of meaning making are being developed and tested in clinical samples. For example, Lee, Cohen, Edgar, Laizner, and Gagnon (2006) found that breast cancer survivors receiving a meaning-making coping intervention had significantly higher levels of self-esteem, optimism, and self-efficacy than did the control group after controlling for baseline scores. However, these intervention efforts are in the early stages, and much remains to be learned about whether and how meaning making can be facilitated through interventions and whether this meaning making is helpful (Chan, Ho, & Chan, 2007). In addition, many current psychotherapies involve, explicitly or implicitly, meaning making with an effort toward meaning made (e.g., Hayes et al., 2007). Clinical trials explicitly based on this meaning-making model may illuminate the

mechanisms through which many psychotherapies alleviate distress.

Final Words

Davis et al. (2000) concluded their review of a subset of the meaning-making literature by stating “although the data indicate that finding some meaning is associated with less emotional distress relative to those unable to find meaning, the effect for finding meaning only brings one in line with the level of adjustment of those who never searched for meaning” (p. 506). The present review reveals a more complex picture, highlighting the need for more careful attention to the way that studies conceptualize and measure both meaning-making efforts and meaning made. Some types of meaning making, particularly those resulting in adaptive made meanings, are indeed related to better adjustment, and other types are related to, or reflect, distress. Further, there are likely vast individual differences in these relationships. Reviewing the religion-adjustment literature, Pargament (2002) concluded that the question was too broad. Instead, he advocated asking the “more difficult but more appropriate question” regarding the effects “of particular types of religion, for particular people dealing with particular situations, within particular social contexts and according to particular criteria of helpfulness” (p. 178). Such a conclusion seems warranted in this context as well. Rather than asking whether meaning making is helpful in adjusting to highly stressful events, we first need to better understand what meaning making is and then ask for whom, and under what circumstances, are particular types of meaning making and meaning made helpful and why?

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Correction to Else-Quest, Hyde, and Linn (2010)

On page 118 of the article “Cross-National Patterns of Gender Differences in Mathematics: A Meta-Analysis,” by Nicole M. Else-Quest, Janet Shibley Hyde, and Marcia C. Linn (*Psychological Bulletin*, 2010, Vol. 136, No. 1, pp. 103–127), the images on Figures 1 and 2 are incorrectly reversed. The legends for Figures 1 and 2 are in the correct order.

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