

**MAKING SENSE AND MAKING FUN: HUMOR IN THE CONTEXT OF
SITUATIONAL MEANING MAKING AND GLOBAL MEANING**

A Dissertation

by

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ABSTRACT

Humor is a multifaceted construct that is generally regarded as a positive emotional experience positively associated with well-being. Despite this generally accepted relationship, empirical research on humor and meaning (both situational meaning and global evaluations of meaning in life) is surprisingly limited. The current research examined the relationship between humor and situational meaning making in the context of stressful events, as well as general evaluations of meaning in life. Study 1 replicated and extended research on the association between humor and well-being by assessing the relationship between several aspects of humor and ratings of meaning in life. Studies 2 and 3 explored the role of humor in making sense of stressful experiences using retrospective and prospective designs. Study 2 took a retrospective approach to examining the role of humor in coping with stressful experiences by having participants reflect on a stressful experience from the previous two years. Study 3 prospectively examined the role of humor in meaning making and coping with a stressful experience using an expressive writing paradigm. Participants in the humor condition were asked to write about a stressful experience they were currently dealing with and to specifically make an effort to find humor in the experience. Well-being, discrepancy, and meaning making outcomes were assessed 4 weeks later to evaluate the effectiveness of effortful attempts to use humor in coping with stressful experiences. The results replicated previous research on humor and well-being, and supported the hypothesized relationship between healthy/unhealthy humor and meaning in life. Humor was also associated with

meaning making, however, the role of humor in making initial attributions for a potentially stressful experience and discrepancies was not clearly supported. Implications, limitations, and future directions are discussed.

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INTRODUCTION

“A person without a sense of humor is like a wagon without springs. It's jolted by every pebble on the road.”

-Henry Ward Beecher

A sense of humor is widely valued as a positive and healthy personality characteristic (e.g., Martin, 2007). Consistent with this view, various aspects of humor are indeed associated with indicators of well-being (e.g., self-esteem, Kuiper & Martin, 1993). Based on the relationship between humor and well-being, one would expect that humor would also be associated with a global sense of meaning in life (MIL), another variable closely tied to well-being. However, empirical research on humor and meaning in life is surprisingly limited (Korotkov & Hannah, 1994; Kuiper & Martin, 1993). As the quote above illustrates, humor is also seen as a valuable resource when dealing with potentially stressful situations. While some studies have found support for the stress moderating role of humor (Kuiper et al., 1995), results in the broader literature are also inconsistent (e.g., Culver et al., 2004; Dorz et al., 2003). The current research addresses the inconsistencies and limitations of the current literature by exploring the relationship between humor and meaning in the context of the meaning making model (e.g., Park, 2008; 2010) which distinguishes between global meaning (e.g., meaning in life) and situational meaning (e.g., appraised meaning of an event) in coping with potentially

stressful experiences. Based on theory and empirical research, humor is predicted to contribute to both global meaning and meaning making processes that help people make sense of potentially stressful experiences. Before describing the justification for these predictions, theoretical perspectives on humor will be briefly reviewed to provide a foundation for understanding the role of humor in the meaning making model.

Theories of Humor

Defining humor is a difficult task as the term can refer to a wide range of concepts. In some cases, humor may simply refer to anything that is perceived as funny, while in others it may refer to the mental processes involved in recognizing something as funny and enjoying it. Current perspectives on humor recognize that it has multiple components, including social, emotional, and cognitive features, as well as the behavioral expression of laughter (Martin, 2007, p.5).

Theories of humor have generally focused on describing what conditions lead to the experience of humor (e.g., finding a joke funny) and the behavioral expression of laughter. Despite increased attention from psychological researchers in recent years, there is no comprehensive theory of humor that can adequately explain all aspects of the concept (Hirt & Genshaft, 1982; Martin, 2007, p.32). However, taking time to consider the varied theories of humor and their different perspectives on the construct can provide a more complete picture. Although these theories are only briefly reviewed here, more complete treatments are available (e.g., Martin, 2007).

The superiority theory of humor has a long history, and was advocated by thinkers including Plato, Aristotle, and Thomas Hobbes. Essentially, the superiority

theory views humor as an aggressive activity in which people derive pleasure from recognizing their own superiority over others or even a past version of their self (Martin, 2007; Wyer & Collins, 1992). People may laugh at the misfortune of others, engaging in downward social comparison as a way to recognize their feelings of superiority. For example, the superiority theory of humor would seem to explain jokes at the expense of a particular group of people (e.g., “blonde jokes”). The notion that all humor is necessarily aggressive is generally rejected by researchers today (Martin, 2007), however the superiority theory does highlight how humor often includes elements of aggression.

Relief theories of humor understand laughter as the release of some form of arousal. One of the first examples of a relief theory was proposed by Herbert Spencer (1860), who proposed that laughter served to release pent up nervous energy that is no longer needed (Martin, 2007, p.33). The most widely recognized example of a relief theory of humor is perhaps Freud’s psychoanalytic perspective (Freud, 1905/1960). Freud suggests that humor allows for a release of anxiety and excess psychic energy, and provides people with an acceptable means of expressing inappropriate desires such as aggression (Lynch, 2002). For example, “dirty” jokes or dark humor expressing sexual or aggressive themes would be explained in terms of expressing these inappropriate desires in a socially acceptable way. Like superiority theories of humor, relief theories of humor have not found a great deal of empirical support (Martin, 2007, p.41), but the idea that humor can be an effective tool in dealing with negative experiences (e.g., stress, anxiety) is still relevant today.

Incongruity theories of humor offer a more recent and popular perspective for understanding humor. This perspective emphasizes the cognitive processing involved in humor, arguing that humor is experienced as the result of recognizing an incongruity that is then (potentially) resolved (Lynch, 2002; Martin, 2007). Koestler (1964) coined the term *bisociation* to refer to simultaneously perceiving something from two normally unrelated perspectives. This process is most easily demonstrated by considering the case of puns. Take for example, “Did you hear about the guy whose whole left side was cut off? He’s all right now.” This pun brings together two understandings of what is being said that are unrelated and incongruent with one another. The set-up of the pun leads readers to interpret “all right” as referring to the man missing the left side of his body. However, the punch line of him being “all right” is also easily understood as meaning the man is healthy without any problems, which is incongruent with him missing the left side of his body. The reader is forced to reinterpret their original understanding of the information in a way that brings together normally unrelated ways of understanding, eliciting humor. Research has generally supported incongruity as an important and perhaps even necessary component of humor (Martin, 2007, p.72), and the recognition that humor involves reappraising information has important implications for the current research.

The reversal theory of humor emphasizes the playful, nonserious nature of humor. Apter (1982) distinguishes between two general frames of mind: the goal-directed *telic* state that is engaged in serious activities, and the *paratelic* state that is more playful and less goal-directed. Similar to bisociation, Apter suggests that humor is

experienced when two contradictory interpretations of an object are held simultaneously, with the added distinction that the second interpretation involves a diminishment relative to the first interpretation (Martin, 2007, p.77). The diminishment refers to an interpretation that makes the object seem less serious, important, or otherwise less than it is in the first interpretation. For example, take this joke by comedian Fred Wolf: “We’re in this trophy shop, right? There’s trophies everywhere, shelves and shelves of trophies. My dad looks around and goes, ‘This guy’s really good.’” The initial interpretation of being in a store that sells trophies is diminished by the father’s silly suggestion that the owner of the trophy shop must have won all of the trophies that are on display. The diminishment is experienced in the paratelic frame of mind which makes the experience enjoyable and humorous. Like the incongruity theories, the reversal theory of humor recognizes the importance of changing perceptions and reappraising information.

More recent theories of humor have attempted to build upon and integrate some of these perspectives to provide a more complete account of humor (e.g., Veatch, 1998; McGraw & Warren, 2010). The benign violation theory of humor offers one perspective that integrates aspects of previous theories, including the importance of inconsistency or violations, the playful nature of humor, and the bringing together of contradictory ideas (McGraw & Warren, 2010). The theory argues that for a situation to elicit humor, it must be appraised as a violation and appraised as benign (i.e., safe) at the same time.

Anything that threatens a person’s understanding can be perceived as humorous as long as the situation is also perceived as being benign. Research has provided some support for the benign violation theory. For instance, McGraw and colleagues (2012) examined

the role of psychological distance in predicting perceptions of benign violations. They found that severe violations in the form of tragedies were more humorous when they were more psychologically distant, whereas minor violations were more humorous when they were psychologically close, supporting the benign violation theory of humor.

Although there is not a single theory of humor that comprehensively explains the construct, these theories do share some important features in their understanding of humor. Many of these perspectives specifically recognize that humor can be involved in the resolution of negative experiences, whether this is reducing anxiety in the context of relief theories, recognizing and potentially resolving incongruity, or escaping the seriousness of a telic state by enjoying the playfulness of a paratelic frame of mind. This common feature of humor is evident in its association with psychological well-being, which will now be explored in more detail.

Humor and Well-being

Humor is typically regarded as a positive and healthy emotional experience (e.g., Martin, 2007) and empirical research has generally supported this notion, with some exceptions. Correlational studies have found that trait humor (assessed using various scales) is associated with many indicators of well-being, including high self-esteem (Kuiper & Martin, 1993), and low depression (e.g., Anderson & Arnoult, 1989; Nezu et al., 1988), neuroticism (e.g., Deaner & McConatha, 1993), and anxiety (Kuiper & Martin, 1993). However, other studies have failed to find a direct relationship between measures of humor and positive moods (Kuiper, Martin, & Dance, 1992) or anxiety (Nezu et al., 1988).

Some of the apparent inconsistencies in the relationship between humor and well-being may be explained by the distinction between healthy and unhealthy types of humor. In contrast to older assessments of humor that did not explicitly distinguish between healthy and unhealthy types of humor, the Humor Styles Questionnaire (Martin et al., 2003; see Individual Differences in Humor section) identifies affiliative humor and self-enhancing humor as healthy, and aggressive humor and self-defeating humor as unhealthy forms of humor. When the healthy and unhealthy forms of humor are examined separately, the relationship between humor and well-being becomes more clearly defined. The healthy forms of humor (affiliative and self-enhancing) are associated with higher levels of self-esteem and positive affect and lower levels of anxiety and depression (Kuiper et al., 2004; Martin et al., 2003). In contrast, the unhealthy form of self-defeating humor is associated with lower levels of self-esteem and overall well-being, as well as higher levels of anxiety, depression, and neuroticism (Kuiper et al., 2004; Martin et al., 2003). These findings support the view of humor (in its healthy forms) as being generally beneficial for well-being and clarify the sometimes inconsistent results of previous research.

Humor and coping with stressful experiences. As researchers and theorists have considered the relationship between humor and well-being, many have identified humor as a potentially effective means of coping with stressful experiences (e.g., Freud, 1928; Lefcourt, 2001). By allowing people to reinterpret a stressful situation from a different and less threatening perspective, humor is argued to reduce the negative effects of potentially stressful experiences (e.g., Dixon, 1980; Martin, 2007, p.282). Many

perspectives on humor and coping take the form of humor moderating the negative effects of stress. That is, humor serves as a buffer against the negative effects of stressful situations, allowing people who use humor to experience fewer negative consequences of potentially stressful experiences.

Experimental and correlational research has provided some support for the stress moderating hypothesis. In one study, students instructed to write a humorous narrative while watching a film of gruesome industrial accidents exhibited a reduced physical stress response (skin conductance, skin temperature, and heart rate) and reported less emotional distress than students who wrote a serious narrative during the film (Newman & Stone, 1996). Kuiper and colleagues (1995) found support for the notion that people who use humor to cope with stressful experiences reinterpret the experience in more positive ways. In one study, scores on a sense of humor measure were positively associated with perceiving a challenging task as a challenge rather than a threat and putting more effort into the task. Another study found that participants who reported using humor to cope with stressful experiences also reported taking steps to consider alternative perspectives, perceiving experiences as more positive as a result. Additionally, Martin and Lefcourt (1983) found that individuals who scored higher on various humor measures reported less mood disturbances after stressful experiences compared to those who scored lower. Despite these findings, other studies have failed to support the stress moderating hypothesis (e.g., Culver et al., 2004; Dorz et al., 2003; Korotokov & Hannah, 1994; Labott & Martin, 1987).

One limitation of much of the previous research examining humor in the context of coping is that the distinction between healthy (affiliative and self-enhancing humor; Martin et al., 2003) and unhealthy (aggressive and self-defeating) forms of humor was not typically considered (Martin, 2007, p.290). As was the case in the humor and well-being literature, this distinction may help explain the apparent inconsistencies in the findings regarding humor and coping. Another limitation of the extant research on humor and coping is that much of it has focused on general well-being outcomes such as depression, emotional distress, and anxiety rather than on the actual process of making sense of a stressful experience. Specifically, research has not considered humor from a meaning making perspective, focusing on how humor may help people make sense of a potentially stressful experience. The current research addresses these limitations by examining humor in the context of the meaning making model (e.g., Park, 2010; 2013).

Humor in the Meaning Making Model

In attempting to explain the process underlying the negative effects of stressful or potentially traumatic events, researchers have identified disruptions to one's sense of meaning and efforts to restore meaning (meaning making) as an important component (e.g., Horowitz, 1986; Janoff-Bulman, 1989). Integrating existing theoretical perspectives, the meaning making model (e.g., Park, 2010; 2013; Park & Folkman, 1997) presents a comprehensive approach to understanding the role of meaning in stressful experiences (see Figure 1).

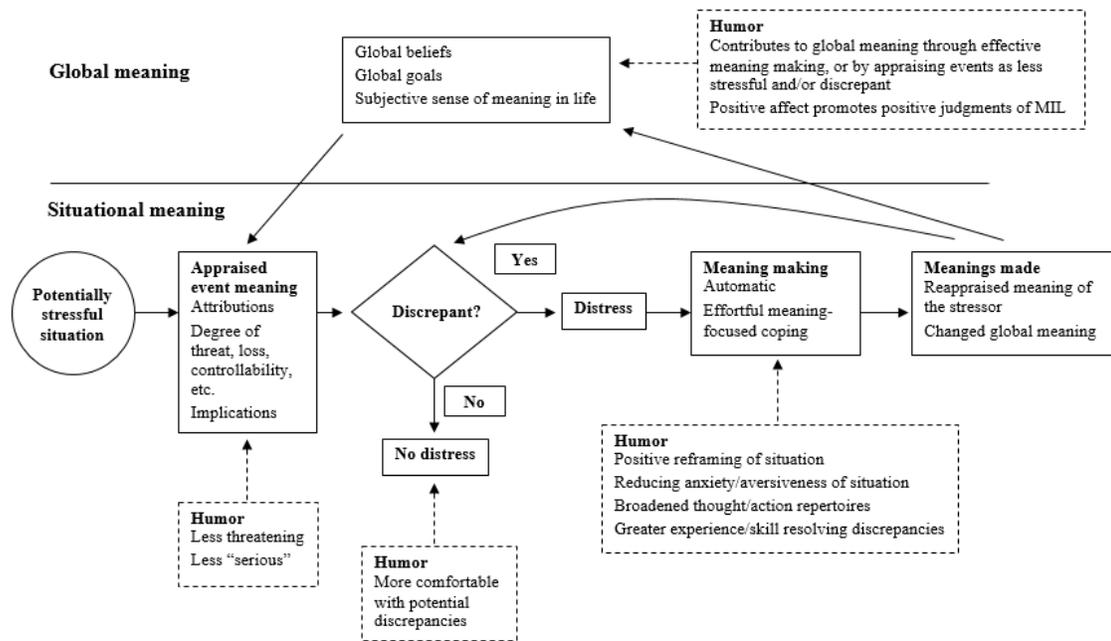


Figure 1. The meaning making model. Hypothesized roles of humor in the meaning making model are identified in dashed boxes.

The meaning making model distinguishes between global meaning and situational meaning. Global meaning refers to individuals’ basic and deeply held beliefs, goals, and feelings that shape their interpretation and orient them to the world (Park, 2010). Subjective ratings of meaning in life are associated with maintaining this global sense of meaning and making progress toward desired goals (Park, 2010). Situational (or appraised) meaning refers to the idiosyncratic meaning assigned to a particular situation or event that is encountered (Park, 2010; 2013). In assigning meaning to a potentially stressful event, people determine the extent to which the event is threatening and controllable, form attributions about why the event occurred, and evaluate the

implications of the event for one's future (Park, 2010; see also Aldwin, 2007; Sweeney, 2008).

The meaning making model argues that after determining the situational meaning of an event, individuals evaluate the extent to which the situational meaning is compatible with their global meaning (Park, 2013). Perceived discrepancies between the appraised situational meaning and one's global meaning are associated with feelings of distress (e.g., Park, 2008). For example, failing a crucial exam could be discrepant with one's global belief that one is an excellent student and one's goal to maintain a high GPA. In response to distress produced by the discrepancy between situational and global meaning, individuals engage in meaning making to reduce the discrepancy (Park, 2010). Meaning making efforts may be automatic (e.g., intrusive thoughts, rumination) or effortful (e.g., reflection, reappraisal of the event, effortful coping; Park & George, 2013). Individuals may modify the situational meaning assigned to the stressful experience to make it compatible with their global meaning, or they may reevaluate their global meaning to make it compatible with the situational meaning. Adjusting the situational meaning to fit with one's global meaning is perhaps the more common and preferred method of reducing discrepancy; however, this process can sometimes be especially difficult (e.g., a traumatic experience), forcing people to change their global meaning to accommodate the situational meaning (e.g., Janoff-Bulman, 1989). By successfully reducing the discrepancy between situational and global meaning through meaning making processes, people are able to restore a sense of meaning and develop an understanding of the experience that is compatible with their basic beliefs.

Humor and situational meaning making. Although humor has not been specifically examined in the context of the meaning making model, it may contribute to meaning making in several ways. The first way in which humor may contribute to meaning making is by virtue of it being a positive emotion. The Broaden and Build theory of positive emotions (e.g., Fredrickson, 2001) identifies the functional aspects of positive emotions in promoting human flourishing. According to this theory, positive emotions serve to “broaden people’s momentary thought-action repertoires and build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources,” (Fredrickson, 2001, p.219). Having a broadened thought-action repertoire refers to the ability to consider a wider array of thoughts and potential actions that may come to mind. The notion that positive affect broadens people’s thought-action repertoires is widely supported (Isen, 2000). For instance, people experiencing positive affect identify a wider variety of things they would like to do (Fredrickson & Branigan, 2005), and have more flexible (Isen & Daubman, 1984), creative (Isen, Daubman, & Nowicki, 1987), and integrative (Isen, Rosenzweig, & Young, 1991) patterns of thought. By broadening thought-action repertoires, positive affect also helps people build long-term resources that can contribute to well-being as well as subsequent experiences of positive affect. For example, positive affect can enable people to respond to potential problems or stressful situations by generating multiple possible solutions, promoting effective coping strategies (Fredrickson, & Joiner, 2002). When people identify discrepancies between the situational meaning of a stressful event and their global meaning, the broadened thought-action repertoires

promoted by humor and positive emotions in general should enable people to more easily resolve the discrepancy and effectively cope with the stressful experience.

Specific aspects or types of humor may also contribute to meaning making processes. A tendency to use healthy forms of humor, especially self-enhancing humor, may be particularly effective in resolving discrepancies between situational and global meaning and reducing distress. Self-enhancing humor is associated with maintaining a humorous outlook even during stressful experiences, and people who tend to use self-enhancing humor are frequently amused (rather than distressed) by the incongruities of life (Martin, 2007, p.211; Martin et al., 2003). A second distinction in humor research that may be relevant to the relationship between humor and meaning making processes is the type of humor that people prefer. Ruch (1983) distinguishes between incongruity-resolution and nonsense humor, which refer to the structure of a joke. Incongruity resolution humor introduces incongruity that can be resolved using information provided elsewhere in the joke (e.g., puns). Nonsense humor also introduces incongruity, but this incongruity is not completely resolved by the joke. Research has yet to explore the relationship between appreciation of these types of humor and meaning making, but there are some possibilities that could be considered. People who are comfortable with nonsense humor may find potential meaning threats less aversive than people who are especially uncomfortable with nonsense humor. Enjoying the incongruity of nonsense humor may be associated with a higher threshold for tolerating the incongruity of potential meaning threats. Another possibility could be that people who appreciate incongruity-resolution humor have more experience resolving incongruity by thinking

broadly and making connections, enhancing their ability to successfully engage in meaning making. Although these possibilities are currently conjecture, they illustrate how examining specific aspects of humor may enhance our understanding of humor in the meaning making model.

In general, trait humor may contribute to meaning making and resolving potential discrepancies between situational and global meaning because it is associated with and can induce a playful, less serious, and non-goal focused mindset (e.g., Apter, 1982). This humorous perspective could enable people to reevaluate the potentially stressful experience in a less aversive or threatening manner. For example, failing a single exam may be distressing for someone in a serious mindset focused on their goal of maintaining a high GPA. In contrast, failing a single exam may be less distressing for someone in a non-serious mindset who is not focused on the goal of maintaining a high GPA. Humor may also allow people to make sense of a discrepancy by thinking of it as a “joke.” If a person takes the view that the world is a funny place in which things sometimes don’t make sense and all you can do is laugh about it, potential discrepancies between situational and global meaning may be less distressing. In addition to contributing to meaning making processes when discrepancies between situational and global meaning are identified, these aspects of humor may also lead people to not identify the potential discrepancy in the first place. If a potentially stressful event is initially appraised as non-threatening because an individual is in a humorous mood, then a discrepancy will not be identified and meaning making efforts will not be needed. In this way, humor can help

avoid discrepancies between situational and global meaning in addition to contributing to meaning making processes that resolve the discrepancies when they are identified.

This section has described how humor may help people successfully cope with potentially stressful events in the context of the meaning making model. Humor may enable people to interpret potentially stressful events as less threatening or serious, reducing the perceived discrepancy between situational and global meaning. If a potentially stressful event is found to be discrepant, humor may also contribute to meaning making processes that serve to reduce that discrepancy and make sense of the stressful experience. In addition to this contribution to situational meaning and meaning making processes, does humor also enhance global evaluations of meaning in life? Despite the literature on humor and well-being in general, the answer to this question is not clearly established in the literature. The current research is designed to empirically test the relationship between various aspects of humor and meaning in life and an indicator of a global sense of meaning.

Meaning in Life

The experience of meaning in life (or global meaning) is a particularly nebulous and subjective construct, making the task of defining meaning in life a daunting one. Just as people can vary widely in what experiences afford them a sense of meaning (e.g., Schnell, 2009; Wong, 1998), researchers have varied in which aspects of the construct they emphasize. However, across these varying perspectives on meaning in life, some consistent themes have emerged identifying at least two basic components of meaning in life: motivational and cognitive. The motivational component of meaning in life focuses

on how meaning in life provides people with a sense of purpose and direction (e.g., Ryff & Singer, 1998). The cognitive component of meaning in life include maintaining a general sense of coherence, making sense of one's experiences, perceiving relationships, and recognizing patterns (Heintzeman & King, 2014). At a fundamental level, meaning can be understood as connections or mental representations of possible relationships (Baumeister, 1991). These perceived relationships provide structure, regularity, and predictability to subjective experience, enabling people to make sense of the world and their place in it (Antonovsky, 1993).

Recent research has provided support for the association between meaning in life and perceiving relationships at a very basic level. Heintzeman, Trent, and King (2013) showed that exposing participants to stimuli with a reliable pattern (photographs of trees in different seasons) enhanced ratings of meaning in life compared to stimuli with a random order. Exposing participants to coherent versus incoherent linguistic triads showed a similar effect, with participants in the coherent condition reporting higher levels of meaning in life. These findings suggest that the cognitive aspects of meaning in life that relate to making sense of the world may be evident even at the level of simple pattern perception.

Researchers have also framed meaning in life in terms of the expectations people have about the world and how they respond when these expectations are violated. The Meaning Maintenance Model (Heine, Proulx, & Vohs, 2006) is one such framework that describes some ways that people actively promote a sense of meaning in life by resolving potential violations of their expectations. According to the Meaning

Maintenance Model, people have a need to maintain meaning in the form of expected relationships that they impose on the world, and people seek to restore this sense of meaning when it is threatened. Expectancy violations are argued to be very aversive experiences that people are motivated to resolve through a multitude of ways (Proulx & Inzlicht, 2012). The meaning maintenance approach to understanding how people deal with potential threats to their expectancies is also related to classic and contemporary treatments of cognitive dissonance theory (e.g., Festinger, 1957; Harmon-Jones & Mills, 1999). In cognitive dissonance terms, expectancy violations produce an aversive feeling (i.e., dissonance) that people are motivated to reduce. By successfully reducing this dissonance, people are able to maintain their expected relationships and general sense of meaning in life.

To summarize, in addition to providing a sense of purpose and direction, meaning in life is associated with the expectations and mental relationships people hold about the world. People experience meaning in life when they are able to perceive structure, regularity, and predictability in their experience, maintaining a sense of coherence and expectancies about the world. When this sense of meaning is threatened or expectancies are violated, people seek to restore their sense meaning and resolve any discrepancies (e.g., Proulx & Inzlicht, 2012).

Humor and Global Meaning

Given the motivational and cognitive components of meaning in life, what relevance could humor have to a person's evaluation of their global sense of meaning in life? Although the experiencing a sense of purpose and direction (the motivational

component) is a key aspect of meaning in life, it is not immediately clear how humor would be directly relevant in this context. Humor is not inherently a goal-directed experience or characteristic. In fact, many perspectives on humor (e.g., reversal theory) emphasize that humor is experienced in a playful, non-goal directed state (e.g., Apter, 1982). In some situations, the use of humor itself could be interpreted as being goal-directed or purposeful, such as when someone uses jokes to develop their relationship with another person.¹ However, in a general sense, humor does not seem to be clearly related to the broad sense of purpose and direction associated with meaning in life.

Instead of focusing on humor and the motivational aspects of meaning in life, the current research considers how humor might be associated with the more cognitive aspects of meaning. One way in which humor may influence the subjective sense of meaning in life is by virtue of it being a positive emotion. Positive affect is a strong positive predictor of meaning in life ratings over and above the influence of other meaning-relevant variables (e.g., Hicks & King, 2008; King et al., 2006; Lambert et al., 2010). One explanation of this relationship is that people use positive affect as an informational cue when making judgments of meaning in life (e.g., King et al., 2006), interpreting positive affect as an indicator of meaning in life.

¹ As a social emotion, humor could also conceivably contribute to global meaning through less direct, more interpersonal routes (e.g., by fostering positive interpersonal relationships that provide a sense of support and meaning), however such possibilities are beyond the scope of the current investigation which focuses on the role of humor at an intrapersonal level.

Beyond serving as a simple informational cue for ratings of meaning in life (e.g., King et al., 2006; Hicks & King, 2008; Lambert et al., 2010), humor (as a positive emotion) may also promote meaning in life by broadening thought-action repertoires (i.e., broaden and build; Fredrickson, 2001), similar to the proposed role of humor in meaning making. According to the broaden and build theory, positive emotions such as humor allow people to bring to mind a wider array of thoughts and potential actions, forming new connections and relationships between ideas (e.g., Fredrickson, 2001). Because mental connections or representations of possible relationships are a key component of meaning in life (Baumeister, 1991), the broadened thought-action repertoires promoted by humor could enhance subjective ratings of meaning in life.

The notion that humor may promote meaning in life by virtue of it being a positive emotional experience is promising, however it has not yet been directly examined. One contribution of the current research is establishing the relationship between various aspects of humor and meaning in life. Perhaps more interestingly, the current research examines other ways in which humor may be closely related to meaning in life that may not necessarily be shared with positive affect more generally.

One such way humor may promote meaning in life is by reducing feelings of anxiety or tension. The notion of humor serving to reduce some form of arousal or incongruity is clearly evident in relief (e.g., Spencer, 1860) and incongruity (e.g., Koestler, 1964) theories of humor. This function of humor is particularly relevant to the experience of meaning threats or expectancy violations. In the context of the Meaning Maintenance Model, people experience aversive arousal when experiences violate their

expectancies. This aversive arousal signals that their sense of meaning is threatened and motivates them to resolve the inconsistency to restore meaning. If humor reduces feelings of anxiety or tension, it may be an effective means to resolve inconsistencies and reduce the aversive arousal caused by expectancy violations. Empirical research supports this role of humor. In addition to increasing positive mood (e.g., Ruch, 1996), humor can also reduce negative moods including feelings of anxiety (Moran, 1996) and distress (Szabo, 2003). By helping resolve potential threats to meaning by reducing the aversive arousal produced by expectancy violations, humor may help people maintain a global sense of meaning in life.

Reversal theory also suggests another means by which humor may promote meaning in life. Recall that reversal theory emphasizes that humor is experienced in the paratelic state that is playful, nonserious, and non-goal directed. In the paratelic state, people are able to see things from new perspectives and integrate information to form a new understanding of an experience. Similar to the broadened thought-action repertoires of the broaden and build theory, the paratelic state associated with humor may also enable people to make connections and identify relationships that they were previously unaware of, allowing them to understand and make sense of something that was previously not understood.

Empirical research on humor and global meaning. Despite the multitude of reasons to suspect a positive relationship between humor and global meaning, there is little empirical research that directly addresses this question. In one of the few investigations to examine humor as well as an indicator of meaning in life, Kuiper and

Martin (1998) found that several measures of humor (CHS, SHRQ, and SHQ) were unrelated to an assessment of purpose in life (Ryff, 1989). Another study found that scores on the Coping Humor Scale were positively associated with sense of coherence (Korotkov & Hannah, 1994). Despite the very limited literature on the relationship between humor and meaning in life, the findings are generally consistent with humor being more strongly associated with the cognitive component of meaning in life (i.e., sense of coherence) than the motivational component of meaning in life (i.e., sense of purpose).

Although research specifically investigating the relationship between humor and meaning in life is lacking, there is a substantial literature examining the relationship between humor and other indicators of well-being, as described in the humor and well-being section. In particular, healthy forms of humor (affiliative and self-enhancing) are associated with higher levels of self-esteem and positive affect and lower levels of anxiety and depression (Kuiper et al., 2004; Martin et al., 2003). Unhealthy (self-defeating) humor is associated with lower levels of self-esteem and overall well-being, as well as higher levels of anxiety, depression, and neuroticism (Kuiper et al., 2004; Martin et al., 2003). These findings suggest that healthy humor should be positively associated with meaning in life whereas unhealthy humor should be negatively associated with meaning in life. The current research distinguishes between healthy and unhealthy forms of humor to provide an unambiguous assessment of the relationship between humor and meaning in life.

Preferences for incongruity-resolution and nonsense humor (e.g., Ruch, 1983) may also be associated with global meaning. These preferences are hypothesized to promote successful meaning making and potentially reduce the aversiveness of potentially stressful situations. By helping people avoid perceiving stressful events as threats to meaning and/or helping people effectively resolve threats to meaning, preferences for incongruity-resolution and nonsense humor may also be associated with global meaning in life. The current research assesses individual differences in humor and global meaning in each study in order to clarify the associations between these variables. The next section describes the various assessments that have been developed to measure individual differences in humor.

Individual Differences in Humor

A great variety of measures have been developed that assess individual differences in many aspects of the experience of humor. Some assessments examine what types of humor people prefer in terms of content, whereas others distinguish between adaptive and maladaptive functions of humor. In this section, personality approaches to understanding humor will be briefly reviewed with particular attention paid to assessments relevant to the current research.

Much of the early psychological research on humor focused on humor appreciation, or the types of humor people find most enjoyable (Martin, 2007, p.195). In some research, the categories of humor were theoretically based. Researchers examined themes of repressed sexual and aggressive desires in the context of Freudian theory, or examined themes of hostility and disparagement in the case of superiority theory. Other

researchers used a factor analytic approach to identify dimensions of humor empirically (e.g., Cattell & Luborsky, 1947; Eysenck, 1942). Addressing limitations in earlier factor analytic research, Ruch (1983) conducted a series of large-scale studies to more systematically examine the structure of humor appreciation by having participants evaluate a set of 600 jokes and cartoons. Ruch's research revealed three factors: incongruity resolution humor, nonsense humor, and sexual humor. The first two factors refer to structural features of the jokes. Incongruity resolution humor involves having a punch line that introduces incongruity that can be resolved using information elsewhere in the joke. Puns would be an example of this type of humor. Nonsense humor also introduces incongruity, but this incongruity is not completely resolved by the joke. An example of this type of humor is bizarre or off-the-wall humor that is actually enjoyed for its incongruity (e.g., *Monty Python's Flying Circus*). The final factor is sexual humor which refers to jokes and cartoons that clearly have sexual themes. Ruch's research also examined the factor structure of responses to humor, identifying two factors of funniness and aversiveness that were only weakly negatively associated.

Another line of research has examined sense of humor by focusing on its role in everyday life. In one of the earliest approaches to assessing humor as a personality trait using self-reports, Svebak (1974) developed the Sense of Humor Questionnaire, which included three subscales: metamessage sensitivity, liking of humor, and emotional expressiveness. Metamessage sensitivity referred to the ability to take a humorous perspective in most situations, liking of humor is self-explanatory, and emotional expressiveness referred to the tendency to express humor through laughter in a variety of

situations. Subsequent research has supported the reliability and validity of the metamessage sensitive and liking of humor subscales, but not the emotional expressiveness subscale (Lefcourt & Martin, 1986).

Other researchers have focused more closely on the emotional aspects of humor in particular. Martin and Lefcourt (1984) developed the Situational Humor Response Questionnaire (SHRQ) to assess humor defined in terms of the frequency of smiling and laughing in various situations. The scale presents participants with a series of descriptions of situations and asks respondents to indicate how likely they would be to laugh in that situation. Another approach to humor emphasizes the general positive mood and attitude that lends itself to experiencing humor. Ruch and colleagues (1996) developed the State-Trait Cheerfulness Inventory to assess this aspect of humor in terms of cheerfulness, seriousness, and bad mood. Cheerfulness lends itself to experiencing humor, whereas seriousness and bad mood inhibit humor.

Finally, another category of assessments grew from an interest in the relationship between humor and well-being. The Coping Humor Scale (CHS; Martin & Lefcourt, 1983) assesses the general tendency for respondents to use humor when coping with stress. The COPE (Carver, Scheier, & Weintraub, 1989), a broad measure of the ways people cope with stress, also includes items assessing the use of humor in coping. These measures of humor as a coping tool, and other assessments of humor in general, have conceptualized humor as a positive and healthy characteristic.

Despite the widespread recognition of humor as healthy and desirable, some forms of humor are associated with less desirable outcomes. The Humor Styles

Questionnaire (HSQ; Martin et al., 2003) distinguishes between four types of humor; two healthy and two unhealthy. The healthy forms of humor identified by Martin and colleagues include affiliative humor which refers to using humor to amuse others and facilitate relationships, and self-enhancing humor which refers to maintaining a humorous perspective even when faced with stressful situations. Self-enhancing humor is closely related to the type of humor assessed by the Coping Humor Scale (Martin, 2007, p.211). The first form of unhealthy humor is aggressive humor which is used to criticize or manipulate others and includes the use of potentially offensive humor. Teasing, sarcasm, using racist or sexist humor, or using humor in socially inappropriate situations are examples of aggressive humor. The second form of unhealthy humor is self-defeating humor which refers to using excessively self-disparaging humor to amuse others at one's own expense, or using humor as a form of denial to avoid dealing with problems in constructive ways (Martin, 2007, p.211).

As evidenced by these assessments of humor, the relationship between individual differences in humor and well-being has been a focus of researchers for some time. The current research contributes to this literature by assessing the relationship between well-being indicators and individual differences in types of humor (i.e., healthy vs. unhealthy) and structural preferences in humor (i.e., incongruity-resolution and nonsense humor). The current research also examines these aspects of humor in the context of the meaning making model, assessing their relationship to situational meaning making and global meaning.

The Current Research

The goal of the current research is to clarify the relationship between humor and both situational and global meaning. Despite close conceptual and theoretical links between humor and MIL, the relationship between these constructs has not been thoroughly explored. The current research includes three studies examining the role of humor at both the level of situational meaning when dealing with potentially stressful experiences, and at the level of global meaning when making judgments of one's overall meaning in life. Across all studies, individual differences in humor and several measures of well-being were included to examine the relationship between healthy forms of humor and general well-being, replicating previous research.

H1. Across all studies, healthy forms of humor will be associated with fewer daily experiences of stress (i.e., hassles) and other indicators of well-being (e.g., higher self-esteem, satisfaction with life, subjective happiness, and lower depression). This prediction is based on previous research establishing the positive association between humor and well-being.

Study 1 is designed to establish the relationship between trait aspects of humor and subjective evaluations of global meaning in life. Individual differences in types of humor (i.e., healthy vs. unhealthy) and structural preferences in humor (i.e., incongruity-resolution and nonsense humor) were assessed, along with judgments of subjective meaning in life. Specific hypotheses tested in Study 1 include:

H2. Healthy forms of humor (affiliative and self-enhancing) will be positively associated with meaning in life, whereas unhealthy forms of humor (self-

defeating and aggressive) will be negatively associated with global meaning in life. This prediction is based on the established relationship between humor and well-being (though research on humor and meaning in life is lacking).

H2a. Exploratory analyses will test the prediction that daily hassles (as a general indicator of successful meaning making) will mediate the relationship between healthy forms of humor and global meaning in life. If healthy forms of humor promote meaning making and reduce the aversiveness and perceived discrepancy of potentially stressful experiences, the reduced experience of stress (i.e., fewer daily hassles) may mediate the relationship between healthy forms of humor and global meaning in life.

H3. Appreciation of incongruity-resolution humor will be positively associated with meaning in life. This is an exploratory prediction based on the notion that appreciation of incongruity resolution humor may provide people with the experience and skills needed to successfully resolve discrepancies between situational and global meaning, or may allow people to find potentially stressful experiences less discrepant in the first place.

H4. Appreciation of nonsense humor will be positively associated with meaning in life. This is an exploratory prediction based on the notion that appreciation of nonsense humor may be associated with a greater tolerance for potential inconsistencies or discrepancies, allowing people to find potentially stressful experiences less discrepant with their global meaning.

Studies 2 and 3 specifically examine the role of humor in situational meaning making processes in the context of stressful events, rather than the relationship between humor and global meaning in life at the trait level. Study 2 examines the role of humor in meaning making by asking participants to retrospectively consider a stressful experience. Participants provided ratings of extent to which they found humor in the event as well as ratings of meaning making and meanings made with regard to the stressful experience. Specific hypotheses tested in Study 2 include:

H5. Finding humor in the stressful experience will be positively associated with meaning making (e.g., making sense of the experience, accepting the experience). This prediction is based on the notion that the positive emotional experience of humor can potentially reduce the aversiveness of the stressful experience and broaden thought-action repertoires, enabling people to make sense of the situation.

H6. Finding humor in the stressful experience will be associated with finding the experience less stressful and less discrepant with global meaning. As a positive emotional experience, humor may reduce the aversiveness of thinking about the stressful experience and promote successful meaning making efforts that reduce the discrepancy between situational and global meaning.

H7. Healthy forms of humor will be positively associated with finding humor in the stressful experience. This prediction is based on healthy forms of humor being associated with maintaining a humorous perspective even in stressful situations.

Using an expressive writing paradigm (e.g., Frattaroli, 2006; Pennebaker & Beall, 1986), Study 3 tested if intentional efforts to use humor when coping with a stressful experience can contribute to meaning making and promote well-being up to 4-6 weeks later.

Participants were assigned to write about a stressful experience they were currently dealing with or a neutral control topic for 10 minute each day, 3 days in a row. Some participants writing about a stressful event were instructed to make an effort to try to find humor in the stressful experience or the things it brings to mind, whereas others did not receive these instructions. 4 weeks after the writing task, participants completed measures of well-being as well as ratings of discrepancy and meaning making with regard to the stressful experience they wrote about. Specific hypotheses tested in Study 3 include:

H8. Writing about a stressful experience and making an effort to find humor in the experience will be associated with greater well-being 4 weeks later compared to a neutral writing topic, or writing about a stressful experience without specifically making an effort to find humor in the experience. This prediction is based on previous research on expressive writing (with regard to the humor vs. neutral writing topic comparison) and the proposed role of humor in meaning making (with regard to the humor vs. non-humor expressive writing comparison).

H9. Writing about a stressful experience and making an effort to find humor in the experience will be associated with finding the experience less stressful and less discrepant with global meaning 4 weeks later compared to a neutral writing

topic, or writing about a stressful experience without specifically making an effort to find humor in the experience. This prediction is based on previous research on expressive writing (with regard to the humor vs. neutral writing topic comparison) and the proposed role of humor in meaning making (with regard to the humor vs. non-humor expressive writing comparison).

STUDY 1

The goal of Study 1 was to establish the relationship between trait aspects of humor and subjective ratings of global meaning in life. Tendencies to use humor in healthy (affiliative and self-enhancing) and unhealthy (aggressive and self-defeating) ways were assessed using the Humor Styles Questionnaire (Martin et al., 2003) to test their proposed relationship with meaning in life (*H2*). Preferences for incongruity-resolution (*H3*) and nonsense humor (*H4*) were assessed using Ruch's (1983) 3WD measure to test their proposed relationship with meaning in life. In addition to measures of meaning in life, experiences of daily stress and general indicators of well-being (e.g., self-esteem, depression) were assessed to replicate previous research on the general association between measures of humor and well-being (*H1*), and to test if daily hassles and uplifts (as an indicator of successful meaning making) mediated the relationship between healthy forms of humor and meaning in life (*H2a*).

Method

Participants. One-hundred and fifty-three ($N = 153$) individuals (78 female) were recruited from Amazon's Mechanical Turk platform (www.mturk.com), an effective online source of high-quality data (Buhrmester, Kwang, & Gosling, 2011). A sample size of approximately 150 was determined before data collection based on recommendations in the psychological literature (e.g., Simmons, Nelson, & Simonsohn, 2011; VanVoorhis & Morgan, 2007). Data collection was terminated as soon as possible after this goal was met. Participants were paid \$1.50 for their participation. Participants

were between the ages of 18 and 63 ($M = 33.91$; $SD = 10.53$), white (83.7 %), and non-Hispanic (92.2%).

Materials and Procedure.

Global meaning measures. To assess subjective judgments of meaning in life as an indicator of global meaning, participants first completed the Meaning in Life Questionnaire (MLQ; Steger, Frazier, Oishi, & Kaler, 2006). Using a 7-point scale (1 = *not at all true*; 7 = *extremely true*), participants rate five statements reflecting presence of meaning in life (e.g., "I understand my life's meaning.") and five statements reflecting search for meaning in life (e.g., "I am searching for meaning in my life."). Composite MIL presence ($M = 4.87$, $SD = 1.48$, $\alpha = .93$) and MIL search ($M = 4.20$, $SD = 1.65$, $\alpha = .94$) scores were computed with higher values reflecting greater presence and search respectively.

Participants also completed the meaningfulness and crisis of meaning scales of the Sources of Meaning Questionnaire (SoMe; Schnell, 2009). Participants indicate their agreement with five statements reflecting meaningfulness (e.g., "I think there is meaning in what I do.") and five statements reflecting crisis of meaning (e.g., "I don't see any sense in life.") using a 6-point scale (0 = *strongly disagree*; 5 = *strongly agree*). Composite meaningfulness ($M = 3.61$, $SD = 0.78$, $\alpha = .80$) and crisis of meaning ($M = 1.89$, $SD = 0.99$, $\alpha = .94$) scores were computed with higher values reflecting greater meaningfulness and crisis of meaning respectively.

Humor measures. To assess preferences for different types of humor, participants first completed the incongruity-resolution and nonsense humor items from

Ruch's (1983) 3WD measure. The full 3WD (form A) includes 35 jokes and cartoons representing incongruity-resolution humor, nonsense humor, and sexual humor. Because sexual humor was not hypothesized to be specifically relevant to the current investigation and in the interest of time, only the incongruity-resolution and nonsense humor items were used. Participants viewed a series of ten incongruity-resolution humor items and ten nonsense humor items. Using a 7-point scale, participants rated how funny ($0 = \textit{not funny at all}$; $6 = \textit{very funny}$) and aversive ($0 = \textit{not aversive at all}$; $6 = \textit{very aversive}$) each joke or cartoon was. Composite funniness ($M = 24.48$, $SD = 11.72$, $\alpha = .87$ for incongruity-resolution; $M = 15.20$, $SD = 11.07$, $\alpha = .88$ for nonsense) and aversiveness ($M = 12.84$, $SD = 12.63$, $\alpha = .92$ for incongruity-resolution; $M = 13.42$, $SD = 13.98$, $\alpha = .92$ for nonsense) scores were computed for each type of humor by summing the responses to each item.

Healthy (affiliative and self-enhancing humor) and unhealthy (aggressive and self-defeating humor) humor styles were assessed using the Humor Styles Questionnaire (Martin et al., 2003). Participants indicated their agreement with eight items assessing each of the four humor styles using a 7-point scale ($0 = \textit{totally disagree}$; $7 = \textit{totally agree}$). Composite scores were computed for affiliative ($M = 5.33$, $SD = 1.09$, $\alpha = .88$; e.g., "I laugh and joke a lot with my friends."), self-enhancing ($M = 4.80$, $SD = 0.81$, $\alpha = .72$; e.g., "If I am feeling depressed, I can usually cheer myself up with humor."), aggressive ($M = 3.46$, $SD = 1.05$, $\alpha = .77$; e.g., "If someone makes a mistake, I will often tease them about it."), and self-defeating humor ($M = 3.42$, $SD = 1.19$, $\alpha = .87$; e.g., "I

will often get carried away in putting myself down if it makes my family or friends laugh.”).

Hassles and Uplifts. As a general measure of experiences of daily stress, participants completed the Hassles and Uplifts scale (DeLongis, Folkman, & Lazarus, 1988). In addition to serving as an indicator of well-being, this measure also serves as an indicator of successful meaning making in general. People who are able to successfully make sense of stressful experiences should experience fewer and less intense hassles than people who have difficulty coping with potentially stressful experiences. After an introduction describing hassles and uplifts, participants are presented with a series of 53 items that can be hassles or uplifts and answer the questions “How much of a hassle was this item for you today?” and “How much of an uplift was this item for you today?” using 4-point scales (0 = *none or not applicable*; 1 = *somewhat*; 2 = *quite a bit*; 3 = *a great deal*). Ratings across all items were averaged to produce composite scores for overall hassles ($M = 1.86$, $SD = 0.51$) and uplifts ($M = 2.17$, $SD = 0.61$).

Well-being measures. Positive affect (PA) and negative affect (NA) were assessed by having participants rate five positive adjectives (e.g., "happy," "amused") to measure PA ($M = 4.28$, $SD = 1.64$, $\alpha = .95$), and five negative adjectives (e.g., "sad," "nervous") to measure NA (adapted from Diener, Smith, & Fujita, 1995; $M = 2.00$, $SD = 1.21$, $\alpha = .88$). Participants indicated how much they feel each emotion "right now" on a 7-point scale (1 = *not at all*; 7 = *extremely*).

Self-esteem was assessed using the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Participants indicated their agreement with ten statements regarding their

perceptions of self-worth (e.g., "On the whole, I am satisfied with myself.") on a 7-point scale (1 = *strongly disagree*; 7 = *strongly agree*). Responses were averaged to produce a composite self-esteem score ($M = 5.46$, $SD = 1.38$, $\alpha = .94$).

Satisfaction with life was assessed using the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) which has participants indicate their agreement with five statements (e.g., "In most ways my life is close to ideal.") using a 7-point scale (1 = *strongly disagree*; 7 = *strongly agree*). Responses to the five items were averaged to produce a composite satisfaction with life score ($M = 4.46$, $SD = 1.55$, $\alpha = .92$).

Subjective happiness was assessed using the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999) which has participants complete four items using a 7-point scale (e.g., "In general, I consider myself:" 1 = *not a very happy person*; 7 = *a very happy person*). Responses to the four items were averaged to produce a composite subjective happiness score ($M = 4.91$, $SD = 1.47$, $\alpha = .91$).

Resiliency was assessed using the Ego-Resiliency Scale (Block & Kremen, 1996) which has participants indicate the extent to which each of 14 items (e.g., "I enjoy dealing with new and unusual situations.") applies to them (1 = *does not apply at all*; 2 = *applies slightly, if at all*; 3 = *applies somewhat*; 4 = *applies very strongly*). A total ego-resiliency score was computed by summing the responses to each item ($M = 40.41$, $SD = 7.58$, $\alpha = .87$).

Depression, anxiety, and general stress were assessed using the 21-item Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995). Participants were asked to indicate the extent to which each statement (e.g., "I found it hard to wind down," and

“I couldn’t seem to experience any positive feeling at all.”) applied to them over the past week using a 4-point scale (0 = *did not apply to me at all*; 1 = *applied to me to some degree, or some of the time*; 2 = *applied to me a considerable degree, or a good part of time*; 3 = *applied to me very much, or most of the time*). Responses were summed to produce total depression ($M = 7.78$, $SD = 9.62$, $\alpha = .91$), anxiety ($M = 5.84$, $SD = 8.08$, $\alpha = .89$), and stress ($M = 9.28$, $SD = 9.45$, $\alpha = .90$) scores.

Results

Hypothesis 1. Bivariate correlations between the humor measures (HSQ and Ruch’s 3WD) and well-being measures are displayed in Table 1. Consistent with **H1**, healthy forms of humor (affiliative and self-enhancing) were positively associated with a wide range of well-being indicators (e.g., greater self-esteem, satisfaction with life, subjective happiness and ego-resiliency; less depression, anxiety, and stress). Similarly, unhealthy forms of humor were negatively associated with several indicators of well-being. The pattern of results for unhealthy forms of humor was not entirely consistent across both aggressive and self-defeating forms of humor. For instance, only self-defeating humor was positively associated with depression, anxiety, stress, and negative affect. On the other hand, only aggressive humor was negatively associated with subjective happiness and ego-resiliency. These findings provide support for **H1**, yet suggest that the relationship between the different forms of humor identified by the HSQ and indicators of well-being may be more nuanced than is captured by the categories of healthy and unhealthy humor alone.

Table 1. Correlations among humor and well-being measures in Study 1.

	HSQ Affiliative	HSQ Self- enhancing	HSQ Aggressive	HSQ Self- defeating	Incongruity Funniness	Incongruity Aversiveness	Nonsense Funniness	Nonsense Aversiveness
Hassles	-.081	-.016	.259**	.368**	.127	.034	.173*	.035
Uplifts	.129	.323**	-.118	-.035	.089	.246**	.090	.270**
PA	.012	.195*	-.125	-.133	.131	.223**	.170*	.249**
NA	-.180*	-.312**	.116	.229**	.042	.122	.173*	.101
Self-esteem	.288**	.333**	-.214**	-.333**	.035	.033	-.093	.125
Satisfaction with Life	.126	.175*	-.099	-.225**	.035	.181*	.053	.193*
Subjective Happiness	.405**	.472**	-.198*	-.091	-.013	.108	-.069	.155 [†]
Ego-resiliency	.280**	.439**	-.264**	-.054	-.018	.189*	-.059	.243**
DASS Depression	-.372**	-.343**	.097	.307**	.052	.103	.170*	.063
DASS Anxiety	-.388**	-.255**	.144 [†]	.233**	.157 [†]	.254**	.336**	.196*
DASS Stress	-.424**	-.324**	.165*	.246**	.057	.142 [†]	.237**	.106

Note. [†] $p < .1$, * $p < .05$, ** $p < .01$

Hypothesis 2. Bivariate correlations between the humor measures and meaning in life measures are displayed in Table 2. The results were consistent with **H2**, that healthy forms of humor would be positively associated with meaning in life and unhealthy forms of humor would be negatively associated with meaning in life. This pattern of results held across both the MLQ measure of presence of meaning in life and the SoMe measure of meaningfulness. The SoMe measure of crisis of meaning provided added support for the proposed relationship between the forms of humor and meaning in life as healthy forms of humor were negatively associated with crisis of meaning and unhealthy forms of humor were positively associated with crisis of meaning. Interestingly, none of the humor measures were associated with search for meaning. These results remained highly consistent when controlling for PA.

Table 2. Correlations among humor and meaning measures in Study 1.

	HSQ Affiliative	HSQ Self- enhancing	HSQ Aggressive	HSQ Self- defeating	Incongruity Funniness	Incongruity Aversiveness	Nonsense Funniness	Nonsense Aversiveness
MLQ Presence	.215**	.329**	-.167*	-.145 [†]	-.011	.119	-.012	.156 [†]
MLQ Search	-.083	-.051	.121	.076	.038	.106	.099	.078
SoMe Meaningfulness	.155 [†]	.372**	-.232**	-.178*	.005	.183*	.010	.222**
SoMe Crisis	-.352**	-.324**	.137 [†]	.296**	.061	-.027	.164*	-.055

Note. [†] $p < .1$, * $p < .05$, ** $p < .01$

Hypothesis 2a. Supplementary mediation analyses were conducted using the PROCESS macro and procedures described by Hayes (2013) to examine daily hassles and uplifts as potential mediators of the effects of healthy and unhealthy forms of humor on meaning in life. Daily hassles and uplifts were examined as mediators based on the notion that healthy forms of humor may promote meaning making and attenuate the aversiveness and perceived discrepancy of potentially stressful experiences, contributing to a general sense of meaning in life. Affiliative and self-enhancing humor scores were averaged to create a “healthy humor” variable, and aggressive and self-defeating humor scores were averaged to create an “unhealthy humor” variable. Scores on the presence subscale of the Meaning in Life Questionnaire and the meaningfulness subscale of the Sources of Meaning Questionnaire were standardized and averaged to create a general meaning in life variable.

Healthy humor and unhealthy humor were entered into two separate analyses as independent variables, with the meaning in life variable entered as the dependent variable, and hassles and uplifts entered independently as proposed mediators. Bias-

corrected bootstrap 95% confidence intervals with 50,000 bootstrap samples were used for the analyses (Hayes, 2013; Hayes & Scharkow, 2013).

The confidence interval for the indirect effect of healthy humor on meaning in life through daily hassles did include zero ($b = .0190$, $b_{SE} = .0270$, 95% CI = [-.0285, .0795], indicating that daily uplifts was not a significant mediator. The confidence interval for the indirect effect of healthy humor on meaning in life through daily uplifts did not include zero ($b = .0981$, $b_{SE} = .0361$, 95% CI = [.0395, .1832], indicating that daily uplifts was a significant mediator.

The confidence interval for the indirect effect of unhealthy humor on meaning in life through daily hassles did not include zero ($b = -.0955$, $b_{SE} = .0297$, 95% CI = [-.1662, -.0477], indicating that daily hassles was a significant mediator. The confidence interval for the indirect effect of unhealthy humor on meaning in life through daily uplifts did include zero ($b = -.0319$, $b_{SE} = .0302$, 95% CI = [-.0947, .0250], indicating that daily uplifts was not a significant mediator.

To summarize the mediation analysis, daily uplifts significantly mediated the effect of healthy humor on meaning in life, and daily hassles significantly mediated the effect of unhealthy humor on meaning in life. These results provide partial support for **H2a**.

Hypotheses 3 and 4. Bivariate correlations (Table 2) revealed that, with a handful of exceptions, incongruity-resolution humor and nonsense humor (as measured by Ruch's 3WD) were unassociated with measures of meaning in life. Aversiveness ratings for both incongruity-resolution humor and nonsense humor were significantly

positively associated with the SoMe measure of meaningfulness but not MLQ presence of meaning. The only other significant finding was a positive relationship between nonsense humor funniness ratings and SoMe crisis of meaning. The conclusions that can be drawn from these results are limited, though they suggest that the funniness and aversiveness ratings of incongruity-resolution and nonsense humor provided by Ruch's 3WD measure may not be especially relevant for individual's judgments of meaning in life.

STUDY 2

Study 2 examined the role of humor in situational meaning making by asking participants to retrospectively consider a stressful experience. After describing a stressful experience, participants provided ratings of extent to which they found humor in the event as well as ratings of meaning making efforts with regard to the stressful experience. Participant responses to the writing task were also coded for use of humor as an alternative indicator of humor in the stressful experience. Perceived discrepancy between the situational meaning of the stressful experience and global meaning was also assessed. Study 2 tested whether finding humor in the stressful experience (or thoughts it brings to mind) was associated with meaning making (e.g., making sense of the experience, automatic meaning making efforts; *H5*), and finding the experience less stressful and less discrepant with global meaning (*H6*). The anticipated positive relationship between healthy forms of humor and finding humor in the stressful experience was also tested (*H7*). Before conducting Study 2, a pilot study was conducted to ensure that the writing prompt in Study 2 would effectively guide participants to recall stressful events in which they are able to potentially find some humor. Complete details for the pilot study are provided in the appendix.

Method

Participants. One hundred and thirteen ($N = 113$) participants (65 female; 2 not reporting) were recruited from the psychology department subject pool at Texas A&M University. Recruiting undergraduate students rather than participants from MTurk

allowed for greater control over the experimental environment. Additionally, the transition to college is often a difficult and stressful time for students, which provides a promising opportunity to determine if humor may contribute to meaning making in this new environment. A sample size of approximately 100 participants was determined before data collection based on recommendations in the psychological literature (e.g., Simmons, Nelson, & Simonsohn, 2011; VanVoorhis & Morgan, 2007). Data collection was terminated as soon as possible after this goal is met. Participants were between the ages of 18 and 22 ($M = 18.70$; $SD = 0.88$), white (78.8%), and non-Hispanic (81.4%).

Materials and Procedure.

Writing task. Participants completed the writing task developed in the pilot study (see appendix) that asked them to write about “a stressful experience from the last 2 years.”

Humor ratings of stressful experience. After describing their stressful experience, participants were asked the extent to which they had found humor in the event on a 7-point scale (1 = *not at all*; 7 = *very much*; $M = 2.53$, $SD = 1.73$). If the participant reported finding humor in the event, they were also asked to provide a brief description of what they found humorous. This measure provided a direct assessment of the extent to which participants are able to find humor in the event itself. ²

² As an exploratory measure, participant responses to the writing task were coded to identify the use of humor when describing the stressful experience. The extent to which participants described the experience as humorous as well as the type of humor (i.e., affiliative, self-enhancing, aggressive, and/or self-defeating) was also rated by trained coders. These observer ratings of humor in the description of the stressful event were intended to be used as an alternative to participants' self-reported humor ratings. Two

It is also possible that people may not find humor in the stressful experience itself, but that thinking about the event brings to mind something humorous. To examine this possibility, participants were also asked to indicate the extent to which thinking about the event brings to mind anything they find funny or humorous on a 7-point scale (1 = *not at all*; 7 = *very much*; $M = 2.46$, $SD = 1.52$). Participants were also asked to provide a brief description of anything humorous that was brought to mind by thinking about the stressful experience.

Participants were then asked to provide basic descriptive information about the experience, such as how long ago the experience occurred, how stressful the event was when they initially experienced it ($M = 6.35$, $SD = 1.13$), how much the event is currently affecting them ($M = 4.04$, $SD = 2.00$), and how much the experience has affected them ($M = 5.58$, $SD = 1.56$).

Discrepancy between global and situational meaning. Although it is difficult to directly assess discrepancies between global and situational meaning (Park, 2010; Park & George, 2013), researchers have attempted to quantify discrepancies using self-report measures. Participants completed items from the Meaning Assessment Scale (Park, 2008; Park, Mills, & Edmondson, 2012) that assess the extent to which the stressful event violates their beliefs and personal goals. Five items assessing belief violations

independent coders rated the essays provided by participants. Unfortunately, the essays did not lend themselves well to identifying any humorous aspects in the experiences and the coders almost unanimously rated the essays as having no humorous aspects at all. Thus, analyses using coder ratings are not reported.

begin with the stem “When you think about how you felt before and then after this stressful experience...” and include: “How much does the occurrence of this stressful experience violate your sense of the world being fair or just?”, “How much does this stressful experience violate your sense that other forces have control in the world?”, “How much does this stressful experience violate your sense that God is in control?”, “How much does this stressful experience violate your sense of being in control of your life?”, and “How much does this stressful experience violate your sense that the world is a good and safe place?”. Additional items assess the extent to which the event interferes with their ability to accomplish intrinsic goals (i.e. social support and community, self-acceptance, physical health, inner peace, and intimacy [emotional closeness]) and extrinsic goals (i.e., educational achievement, achievement in my career, and creative or artistic accomplishment). All items are answered using a 5-point scale (1 = *not at all*; 5 = *very much*). Composite scores for overall belief violation ($M = 2.72$, $SD = 1.07$, $\alpha = .78$), intrinsic goal violation ($M = 2.65$, $SD = 1.05$, $\alpha = .80$), and extrinsic goal violation ($M = 2.27$, $SD = 1.22$, $\alpha = .83$) were computed by averaging participant responses.

Meaning making efforts and meanings made. Participants completed several face-valid items based on previous research (e.g., Park & George, 2013) assessing the extent to which they are making deliberate efforts toward finding meaning in the stressful experience (e.g., “How often have you found yourself searching to make sense of this experience?” and “How often have you found yourself wondering why this this event happened or asking ‘Why me?’”) and integrating it with their global sense of meaning, as well as the extent to which they have found meaning or made sense of the

event (e.g., “To what extent have you made sense of this experience?”, “To what extent have you accepted this experience?” and “How meaningful is this experience to you now?”). Participants responded to each item using a 7-point scale (1 = *not at all*; 7 = *very much*) and responses were averaged to form composite scores for meaning making efforts ($M = 4.34$, $SD = 1.85$, $\alpha = .64$) and actual meaning made ($M = 4.98$, $SD = 1.45$, $\alpha = .67$).

The extent to which the stressful experience is currently having a negative effect on participants’ lives was assessed using the 6-item version of the Impact of Event Scale – Revised (Weiss & Marmar, 1997; Thoresen et al., 2010). These types of intrusive thoughts have been conceptualized as automatic meaning making efforts (Park & George, 2013). Participants indicated the extent to which each of the difficulty (e.g., “I tried not to think about it,” and “I had trouble concentrating.”) has been distressing during the past week with respect to the stressful event using a 5-point scale (0 = *not at all*; 4 = *extremely*). Responses were averaged to produce a composite impact of event score ($M = 2.46$, $SD = 1.15$, $\alpha = .90$).

Participants’ use of intentional coping strategies in attempting to deal with the stressful experience was assessed using the brief COPE inventory (Carver, 1997). This assessment includes a total of twenty-eight items (e.g., “I’ve been giving up trying to deal with it,” and “I’ve been getting help and advice from other people.”) with two items per type of coping measured (i.e., self-distraction ($M = 2.41$, $SD = 0.96$, $\alpha = .72$), active coping ($M = 2.56$, $SD = 0.95$, $\alpha = .67$), denial ($M = 1.29$, $SD = 0.65$, $\alpha = .78$), substance use ($M = 1.37$, $SD = 0.81$, $\alpha = .98$), use of emotional support ($M = 2.29$, $SD = 0.98$, $\alpha =$

.81), use of instrumental support ($M = 2.24, SD = 1.05, \alpha = .87$), behavioral disengagement ($M = 1.46, SD = 0.70, \alpha = .67$), venting ($M = 1.83, SD = 0.78, \alpha = .61$), positive reframing ($M = 2.69, SD = 0.88, \alpha = .61$), planning ($M = 2.53, SD = 0.99, \alpha = .77$), humor ($M = 1.92, SD = 1.06, \alpha = .90$), acceptance ($M = 3.00, SD = 0.90, \alpha = .68$), religion ($M = 2.51, SD = 1.19, \alpha = .91$), and self-blame ($M = 2.11, SD = 1.08, \alpha = .85$). Participants indicated the extent to which they have been doing what each item says using a 4-point scale (1 = *I haven't been doing this at all*; 4 = *I've been doing this a lot*). Scores for each type of coping were computed by averaging the responses to each set of two items.

Humor measures. Participants completed the humor measures from Study 1. Composite funniness ($M = 23.08, SD = 11.76, \alpha = .86$ for incongruity-resolution; $M = 13.74, SD = 10.08, \alpha = .84$ for nonsense) and aversiveness ($M = 10.71, SD = 10.28, \alpha = .86$ for incongruity-resolution; $M = 10.01, SD = 12.86, \alpha = .93$ for nonsense) scores were computed for inconsistency-resolution humor and nonsense humor using Ruch's (1983) 3WD measure. Composite scores were computed for affiliative ($M = 5.81, SD = 0.87, \alpha = .78$), self-enhancing ($M = 4.54, SD = 0.90, \alpha = .64$), aggressive ($M = 3.57, SD = 1.10, \alpha = .76$), and self-defeating ($M = 3.65, SD = 1.27, \alpha = .83$) humor using the Humor Styles Questionnaire (Martin et al., 2003).

Global meaning measures. Participants also completed the meaning in life assessments from Study 1. Composite MIL presence ($M = 4.58, SD = 1.37, \alpha = .90$) and MIL search ($M = 5.08, SD = 1.24, \alpha = .86$) scores were computed for the Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2006). Composite meaningfulness

($M = 3.88$, $SD = 0.70$, $\alpha = .81$) and crisis of meaning ($M = 1.67$, $SD = 0.91$, $\alpha = .93$) scores were computed for the Sources of Meaning Questionnaire (Schnell, 2009).

Hassles and Uplifts. Participants completed the Hassles and Uplifts scale (DeLongis, Folkman, & Lazarus, 1988) used in Study 1 as an assessment of general experiences of stress in the form of hassles ($M = 1.79$, $SD = 0.45$) and uplifts ($M = 2.17$, $SD = 0.51$). This measure served as an indicator of successful meaning making in general.

Well-being measures. Participants then completed the same measures of PA ($M = 4.11$, $SD = 1.17$, $\alpha = .88$), NA ($M = 3.15$, $SD = 1.25$, $\alpha = .79$), self-esteem ($M = 5.34$, $SD = 1.22$, $\alpha = .91$), satisfaction with life ($M = 4.46$, $SD = 1.44$, $\alpha = .88$), subjective happiness ($M = 5.01$, $SD = 1.46$, $\alpha = .91$), ego-resiliency ($M = 41.58$, $SD = 7.16$, $\alpha = .84$), depression ($M = 9.24$, $SD = 8.62$, $\alpha = .85$), anxiety ($M = 8.92$, $SD = 7.73$, $\alpha = .75$), and stress ($M = 14.25$, $SD = 9.58$, $\alpha = .83$) used in Study 1.

Results

Replication Analyses for H1-H4.

Hypothesis 1. Bivariate correlations between the humor measures (HSQ and Ruch's 3WD) and well-being measures are displayed in Table 3. Consistent with **H1**, healthy forms of humor (affiliative and self-enhancing) were positively associated with a wide range of well-being indicators (e.g., greater self-esteem, satisfaction with life, subjective happiness and ego-resiliency; less depression). Unlike Study 1, healthy forms of humor were not significantly associated with anxiety or stress. Of the unhealthy forms of humor, aggressive humor was unassociated with nearly all of the well-being

measures. Only the negative association between aggressive humor and uplifts was significant. However, self-defeating humor was more consistently negatively associated with well-being (e.g., hassles, self-esteem, satisfaction with life, depression, anxiety, stress). Similar to Study 1, these findings provide support for **H1** while suggesting that the relationship between the different forms of humor identified by the HSQ and indicators of well-being may be more nuanced than is captured by the categories of healthy and unhealthy humor alone.

Table 3. Correlations among humor and well-being measures in Study 2.

	HSQ Affiliative	HSQ Self- enhancing	HSQ Aggressive	HSQ Self- defeating	Incongruity Funniness	Incongruity Aversiveness	Nonsense Funniness	Nonsense Aversiveness
Hassles	.081	-.098	.023	.202*	.022	.180 [†]	.179 [†]	.119
Uplifts	.072	.089	-.196*	-.108	.148	.111	.190*	.121
PA	.213*	.301**	-.041	-.229*	.248**	.142	.181 [†]	.061
NA	-.333**	-.306**	.119	.317**	-.066	-.149	-.072	-.101
Self-esteem	.284**	.283*	-.141	-.349**	.074	.049	.009	.028
Satisfaction with Life	.220*	.346**	-.096	-.274**	.175 [†]	.127	.107	.059
Subjective Happiness	.307**	.498**	-.159 [†]	-.163 [†]	.200*	.184	.183 [†]	.132
Ego-resiliency	.345**	.308**	-.085	-.107	.098	.021	.171 [†]	.050
DASS Depression	-.256**	-.262**	.060	.307**	-.059	-.077	-.099	.008
DASS Anxiety	-.104	-.149	.043	.234*	-.100	.023	-.084	.094
DASS Stress	-.146	-.181 [†]	.080	.278**	.007	.105	-.007	.099

Note. [†] $p < .1$, * $p < .05$, ** $p < .01$

Hypothesis 2. Bivariate correlations between the humor measures and meaning in life measures are displayed in Table 4. The results were consistent with **H2**; healthy forms of humor were positively associated with meaning in life and unhealthy forms of

humor (particularly self-defeating humor) were negatively associated with meaning in life. Similar to Study 1, this pattern of results was consistent across both the MLQ measure of presence of meaning in life and the SoMe measure of meaningfulness. The SoMe measure of crisis of meaning once again provided additional support for the proposed relationship between the forms of humor and meaning in life, as healthy forms of humor were negatively associated with crisis of meaning and self-defeating humor was positively associated with crisis of meaning. In contrast to the null associations with search for meaning in Study 1, self-defeating humor was positively associated with search for meaning in Study 2. These results suggest that both affiliative and self-enhancing forms of humor are indeed positively associated with meaning in life, and self-defeating humor is negatively associated with meaning in life. The relationship between aggressive humor and meaning in life also appears to be considerably less robust. These correlations were attenuated when controlling for PA, but the pattern of results remained consistent.

Table 4. Correlations among humor and meaning measures in Study 2.

	HSQ Affiliative	HSQ Self- enhancing	HSQ Aggressive	HSQ Self- defeating	Incongruity Funniness	Incongruity Aversiveness	Nonsense Funniness	Nonsense Aversiveness
MLQ Presence	.204*	.224*	-.159 [†]	-.330**	.224*	.117	.214*	.097
MLQ Search	.046	.008	-.133	.278**	.111	.077	.101	.090
SoMe Meaningfulness	.342**	.279**	-.117	-.225*	.159 [†]	.112	.179 [†]	.079
SoMe Crisis	-.311**	-.235*	.124	.304*	-.132	-.130	-.139	-.111

Note. [†] $p < .1$, * $p < .05$, ** $p < .01$

Hypothesis 2a. The confidence interval for the indirect effect of healthy humor on meaning in life through daily hassles did include zero ($b = .0005$, $b_{SE} = .0334$, 95% CI = [-.0747, .0643], indicating that daily uplifts was not a significant mediator. The confidence interval for the indirect effect of healthy humor on meaning in life through daily uplifts also included zero ($b = .0334$, $b_{SE} = .0372$, 95% CI = [-.0242, .1261], indicating that daily uplifts was a not significant mediator.

The confidence interval for the indirect effect of unhealthy humor on meaning in life through daily hassles did include zero ($b = -.0249$, $b_{SE} = .0294$, 95% CI = [-.1071, .0100], indicating that daily hassles was not a significant mediator. The confidence interval for the indirect effect of unhealthy humor on meaning in life through daily uplifts did not include zero ($b = -.0429$, $b_{SE} = .0295$, 95% CI = [-.1224, -.0021], indicating that daily uplifts was a significant mediator.

To summarize the mediation analysis, the effect of healthy humor on meaning in life was not mediated by either daily hassles or uplifts. The effect of unhealthy humor on meaning in life was significantly mediated by daily uplifts, but not daily hassles.

Hypotheses 3 and 4. Similar to Study 1, bivariate correlations (Table 4) revealed that, with a handful of exceptions, incongruity-resolution humor and nonsense humor were unassociated with measures of meaning in life. Funniness ratings for both incongruity-resolution humor and nonsense humor were significantly positively associated with the MLQ presence of meaning measure. No other correlations reached significance. These results are inconsistent with Study 1, in which the aversiveness ratings were significantly associated with the SoMe meaningfulness measure. With the

findings of both Study 1 and Study 2 in mind, funniness and aversiveness ratings of incongruity-resolution humor and nonsense humor do not appear to be reliably and robustly associated with measures of meaning in life.

New Analyses for H5-H7. Bivariate correlations between ratings of finding or bringing to mind humor in the stressful experience and other variables in Study 2 are provided in Table 5. The extent to which thinking about the stressful experience brought humorous thoughts to mind (not necessarily associated with the stressful experience itself) was significantly positively associated with the face-valid measure of making sense of and accepting the experience, and was negatively associated with the extent to which the experience had affected the individual. More influential experiences were less likely to bring humor to mind when thinking about them. Additionally, actually finding humor in the stressful experience was marginally associated with the face-valid measure of making sense of and accepting the experience. These findings provide some support for **H5**, as humor was indeed associated with making sense of the stressful experience.

Finding humor in the experience and having humorous thoughts brought to mind when thinking about the experience were not generally associated with the use of intentional coping strategies, though there were a few exceptions. Actually finding humor in the experience itself was significantly ($p < .05$) associated with active coping ($r = .209$), venting ($r = .343$), planning ($r = .232$), and humor ($r = .412$), and was marginally ($p < .1$) associated with emotional support ($r = .188$), as measured by the COPE inventory. Having humorous thoughts brought to mind when thinking about the

stressful experience was only significantly associated with humor ($r = .385$), and was marginally associated with active coping ($r = .168$) and venting ($r = .180$).

The extent to which participants reported finding humor in the stressful experience itself was significantly positively associated with intrinsic and extrinsic goal violations, suggesting that participants were more likely to find humor in experiences that produced a discrepancy between their situational (stressful experience) and global (intrinsic and extrinsic goals) meaning. These results do not support the prediction of **H6**: that finding humor in the stressful experience would be associated with finding the experience less stressful and discrepant with global meaning. Instead, finding humor in the stressful experience actually appears to be positively associated with the discrepancy between the stressful experience and global meaning.

Self-enhancing humor was positively associated with bringing humorous thoughts to mind, but not with finding humor in the stressful experience itself. Other forms of humor were unrelated to finding humor or bringing humor to mind. This is consistent with **H7** as self-enhancing humor in particular is associated with maintaining a humorous perspective in stressful situations, which is illustrated by bringing humor to mind when thinking about the stressful experience in Study 2.

Table 5. Correlations between humor in the stressful experience and other variables in Study 2.

	HSQ Affiliative	HSQ Self- enhancing	HSQ Aggressive	HSQ Self- defeating	Incongruity Funniness	Incongruity Aversiveness	Nonsense Funniness	Nonsense Aversiveness	
Found Humor	-.063	.129	.032	.041	.165	-.059	.149	.030	
Brings to Mind Humor	.153	.350**	.160 [†]	.005	.123	.065	.179 [†]	.092	
	Initially Stressful	Currently Affecting	Has Affected	FV Meaning Making Efforts	FV Meaning Made	GMVS Belief Violations	GMVS Intrinsic Goal Violations	GMVS Extrinsic Goal Violations	Impact of Event
Found Humor	-.015	-.097	-.144	.126	.182 [†]	.005	.214*	.194*	.072
Brings to Mind Humor	.034	-.107	-.192*	.010	.217*	.042	.015	.114	.047

Note. [†] $p < .1$, * $p < .05$, ** $p < .01$

STUDY 3

Whereas Study 2 examined humor and meaning making in the context of retrospective ratings of stressful experiences, Study 3 used an expressive writing paradigm to examine the prospective effects of trying to find humor in stressful experiences on well-being. Previous research has found that writing about traumatic or stressful experiences and expressing one's deep thoughts and feelings can promote well-being, including improvements in physical health (e.g., Frattaroli, 2006; Pennebaker & Beall, 1986; Pennebaker & Chung, 2011). Study 3 modified this expressive writing paradigm by asking participants to specifically try to find humor in the stressful experience they are writing about. Participants were randomly assigned to write about a stressful experience they were currently dealing with or a neutral control topic for 5 minutes a day, 3 days in a row. Some participants writing about a stressful event were instructed to actively try to find humor in the stressful experience, whereas others did not receive these instructions. Four weeks after the first writing task, participants completed measures of well-being as well as ratings of discrepancy and meaning making with regard to the stressful experience they wrote about. Using this design, the prospective effects of actively trying to find humor in a stressful experience on well-being and meaning making can be examined. In addition, by including a general expressive writing condition, the possibility that actively trying to find humor in a stressful experience promotes well-being over and above expressive writing alone can be tested.

Method

Participants. One hundred and fifty-one ($N = 151$) participants (111 female; 1 not reporting) were recruited from the psychology subject pool at Texas A&M University. A sample size of approximately 50 participants per cell was determined before data collection based on recommendations in the psychological literature (e.g., Simmons, Nelson, & Simonsohn, 2011; VanVoorhis & Morgan, 2007) and previous research on expressive writing (e.g., Frattaroli, 2006). Data collection was terminated as soon as possible after the sample size goal was met. Participants were between the ages of 18 and 34 ($M = 18.67$; $SD = 1.52$), white (76.2%), and non-Hispanic (78.8%).

Materials and Procedure.

Physical symptoms. As a measure of physical symptomology, participants completed the Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982). When completing the PILL, participants indicate how often they experience each of 54 physical symptoms (e.g., upset stomach, tightness in chest) using a 5-point scale (1 = *have never or almost never experienced the symptom*; 2 = *less than 3 or 4 times per year*; 3 = *every month or so*; 4 = *every week or so*; 5 = *more than once every week*). Responses were averaged to produce an overall physical symptomology score ($M = 2.09$, $SD = 0.52$).

Writing task. Participants were randomly assigned to one of three writing conditions (stressful event, humor, or a control condition) and were asked to write about their assigned topic for 5 minutes each day for 3 consecutive days. This amount of writing determined to be sufficient for the current research given necessary time

constraints, as previous studies have demonstrated that expressive writing for as little as 2 minutes a day for 2 days can be effective (Burton & King, 2008). The writing task was completed on a computer by asking participants to type their responses into an essay box that was provided. Participants in the control condition were asked to write about a trivial topic each day (e.g., a description of their living room, the shoes they are wearing, a tree, or the room they are sitting in; Pennebaker & Beall, 1986). Participants assigned to the stressful event condition were given instructions based on previous research on expressive writing (e.g., Pennebaker & Beall, 1986) asking them to reflect on and describe their thoughts about a stressful experience they are currently dealing with:

For the next 3 days, I would like for you to write about your very deepest thoughts and feelings about a stressful experience you are currently dealing with. In your writing, I'd like you to really let go and explore your very deepest emotions and thoughts. You might tie this experience to your childhood or your relationships with others, including parents, lovers, friends or relatives. You may also link this event to your past, your present or your future, or to who you have been, who you would like to be, or who you are now. All of your writing will be completely confidential. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, continue to do so until your time is up.

Participants in the humor condition received the same instructions as participants in the stressful event condition, with the addition of another passage asking them to specifically try to find humor while writing:

While you are writing, I would like you to make a special effort to try to find humor in the stressful experience and the other things you write about. Stressful experiences are not always humorous in themselves, but people can often find humor when thinking about particular aspects of the event or how the event relates to the rest of their lives.

Participants received these same instructions on the following two days. The writing task and associated materials were completed during an in-lab session on the first writing day, whereas the writing tasks on the second and third days were completed at a time and location of the participant's choosing outside of the lab.

Post-writing task measures. Following the writing task each day, participants completed a short assessment of their current feelings and questions about their writing (e.g., Pennebaker & Beall, 1986; Richards et al., 2000). Participants were asked to indicate the extent to which they were currently experiencing symptoms of arousal (e.g., racing heart, sweaty hands; $M = 1.64$, $SD = 0.57$, $\alpha = .71$), positive emotions (e.g., happy; $M = 2.27$, $SD = 0.95$, $\alpha = .93$), and negative emotions (e.g., anxious; $M = 2.33$, $SD = 0.86$, $\alpha = .88$) on a 5-point scale (1 = *not at all*; 5 = *a great deal*). Several additional questions asked about the content of what participants wrote about (e.g., “How personal was the essay you wrote today?” and “How much have you wanted to tell another person about what you wrote today?”).

Participants in the stressful event and humor conditions also completed the measures of discrepancy, humor, meaning making efforts, and meanings made used in Study 2 following the writing task on the first day. Additionally, after the writing task on

the first day, participants completed a battery of individual difference measures.

Participants completed the humor measures from Study 1 (Ruch's 3WD measure and the Humor Styles Questionnaire) as well as the measures of global meaning used in Study 1 (the Meaning in Life Questionnaire and the Sources of Meaning Questionnaire).

Baseline assessments of the well-being (PA, NA, self-esteem, satisfaction with life, subjective happiness, ego-resiliency, depression, anxiety, stress, and hassles and uplifts measures used in Study 1 were also included.

Follow-up measures. Four weeks after completing the first portion of the study (the writing tasks), participants were contacted by email and asked to complete a follow-up questionnaire to measure potential changes in well-being as a result of the expressive writing task. Participants completed the same measures of global meaning (the Meaning in Life Questionnaire and the Sources of Meaning Questionnaire), well-being (PA, NA, self-esteem, satisfaction with life, subjective happiness, ego-resiliency, depression, anxiety, stress, hassles and uplifts), and physical symptoms (PILL) administered at the beginning of the study. Additionally, participants in the stressful event and humor conditions again completed the measures of discrepancy, humor, and meaning making efforts and meanings made with regard to the stressful event they wrote about during the writing task. Participants in the humor condition ($M = 3.71$, $SD = 1.83$) reported finding more humor in the stressful experience than those in the standard expressive writing condition ($M = 2.80$, $SD = 1.73$), suggesting that the humor manipulation was successful. Descriptive information for the measures assessed at both the beginning of the study (T1) and during the follow-up session at the end of the study (T2) is provided in Table 6.

Table 6. Descriptive information for variables assessed at T1 and T2 in Study 3.

	T1 <i>M</i>	T1 <i>SD</i>	T1 α	T2 <i>M</i>	T2 <i>SD</i>	T2 α
MLQ Presence	4.77	1.36	.88	5.25	1.01	.82
MLQ Search	5.11	1.38	.90	5.02	1.36	.92
SoMe Meaningfulness	3.92	0.63	.75	4.03	0.55	.73
SoMe Crisis	1.72	0.84	.91	1.53	0.60	.90
PILL	2.09	0.52	-	2.04	0.48	-
PA	4.13	1.25	.90	4.10	1.29	.93
NA	3.10	1.27	.78	3.00	1.18	.72
Self-esteem	5.21	1.13	.91	5.25	1.02	.88
Satisfaction with Life	4.93	1.26	.86	4.91	1.22	.84
Subjective Happiness	5.00	1.29	.88	5.00	1.26	.89
Ego-resiliency	40.72	6.97	.83	41.20	6.07	.78
DASS Depression	8.87	9.38	.91	7.78	6.65	.80
DASS Anxiety	8.10	8.28	.83	7.48	7.45	.76
DASS Stress	13.09	9.78	.86	13.44	9.82	.85
Hassles	1.71	0.49	-	1.76	0.45	-
Uplifts	1.97	0.47	-	2.03	0.49	-
FV Meaning Making Efforts	4.76	1.70	.60	4.01	1.97	.81
FV Meaning Made	4.74	1.48	.73	4.93	1.48	.71
GMVS Belief Violations	2.50	0.88	.71	2.36	0.94	.75
GMVS Intrinsic Goal Violations	2.84	1.03	.78	2.48	1.03	.81
GMVS Extrinsic Goal Violations	2.62	1.23	.79	2.29	1.13	.83
Impact of Event	2.93	0.96	.82	2.33	1.06	.89
COPE Self-distraction	2.53	0.94	.67	2.31	0.93	.72
COPE Active	2.85	0.78	.64	2.54	0.93	.72
COPE Denial	1.22	0.52	.66	1.27	0.54	.59
COPE Substance Use	1.27	0.58	.92	1.21	0.53	.96
COPE Emotional Support	2.07	0.89	.82	2.21	0.94	.84
COPE Instrumental Support	2.12	0.89	.82	2.18	0.92	.77
COPE Behavioral Disengagement	1.49	0.63	.58	1.56	0.75	.61
COPE Venting	1.86	0.76	.48	1.79	0.83	.79
COPE Positive Reframing	2.47	1.00	.80	2.22	0.83	.64
COPE Planning	2.87	0.88	.81	2.57	1.01	.83
COPE Humor	1.86	0.96	.86	1.87	0.86	.84
COPE Acceptance	2.84	0.81	.61	2.69	0.85	.75
COPE Religion	2.56	1.20	.92	2.40	1.15	.90
COPE Self-blame	2.46	1.02	.72	2.03	0.94	.81

Results

Replication Analyses for H1-H4.

Hypothesis 1. Bivariate correlations between the humor measures (HSQ and Ruch's 3WD) and well-being measures are displayed in Table 7. Consistent with **H1**, healthy forms of humor (affiliative and self-enhancing) were again positively associated with well-being indicators (e.g., greater self-esteem, satisfaction with life, subjective happiness and ego-resiliency; less depression, less anxiety). Of the unhealthy forms of humor, self-defeating humor was again more consistently associated with lower well-being than aggressive humor. Self-defeating humor was associated with greater hassles, depression and stress, and lower self-esteem, satisfaction with life, and subjective happiness. Aggressive humor was only significantly associated with negative affect, less satisfaction with life, and greater stress. Overall, these findings provide support for **H1**.

Table 7. Correlations among humor and well-being measures in Study 3.

	HSQ Affiliative	HSQ Self- enhancing	HSQ Aggressive	HSQ Self- defeating	Incongruity Funniness	Incongruity Aversiveness	Nonsense Funniness	Nonsense Aversiveness
Hassles	.061	-.045	.086	.233**	.086	.137	.135	.164 [†]
Uplifts	.025	.102	.034	.039	.247**	.282**	.310**	.267**
PA	.080	.282**	-.029	-.074	.095	.155 [†]	.093	.123
NA	-.092	-.104	.162*	.158 [†]	-.007	.147 [†]	.020	.154 [†]
Self-esteem	.190*	.299**	-.145 [†]	-.264**	.211*	.058	.107	.092
Satisfaction with Life	.157 [†]	.267**	-.200*	-.173*	.017	-.035	.015	-.007
Subjective Happiness	.277**	.407**	-.163 [†]	-.176*	.074	.104	.084	.090
Ego-resiliency	.367**	.320**	-.039	-.037	.160 [†]	.089	.208*	.042
DASS Depression	-.247**	-.217*	.115	.225**	.006	.011	.034	.031
DASS Anxiety	-.173*	-.248**	.103	.166 [†]	-.042	.060	.003	.080
DASS Stress	-.093	-.108	.181*	.254**	-.009	-.042	.016	-.011

Note. [†] $p < .1$, * $p < .05$, ** $p < .01$

Hypothesis 2. Bivariate correlations between the humor measures and meaning in life measures are displayed in Table 8. The results were generally consistent with **H2**; healthy forms of humor were typically positively associated with meaning in life and unhealthy forms of humor were negatively associated with meaning in life. This pattern of results was generally consistent across both the MLQ measure of presence of meaning in life and the SoMe measure of meaningfulness. Associations with the SoMe crisis of meaning measure were also consistent with the proposed relationship between the different forms of humor and meaning in life. Study 3 provided evidence suggesting that all four forms of humor are associated with meaning in life. These results remained highly consistent when controlling for PA.

Table 8. Correlations among humor and meaning measures in Study 3.

	HSQ Affiliative	HSQ Self- enhancing	HSQ Aggressive	HSQ Self- defeating	Incongruity Funniness	Incongruity Aversiveness	Nonsense Funniness	Nonsense Aversiveness
MLQ Presence	.096	.252**	-.185*	-.315**	.030	.135	-.022	.170*
MLQ Search	-.017	.131	.071	.099	.152 [†]	.031	.185*	.020
SoMe Meaningfulness	.146 [†]	.364**	-.150	-.278**	.078	.100	.004	.094
SoMe Crisis	-.188*	-.262**	.270**	.341**	-.099	-.093	.023	-.056

Note. [†] $p < .1$, * $p < .05$, ** $p < .01$

Hypothesis 2a. The confidence interval for the indirect effect of healthy humor on meaning in life through daily hassles did include zero ($b = -.0041$, $b_{SE} = .0239$, 95% CI = [-.0589, .0415], indicating that daily uplifts was not a significant mediator. The confidence interval for the indirect effect of healthy humor on meaning in life through daily uplifts also included zero ($b = .0168$, $b_{SE} = .0195$, 95% CI = [-.0114, .0717], indicating that daily uplifts was a not significant mediator.

The confidence interval for the indirect effect of unhealthy humor on meaning in life through daily hassles did include zero ($b = -.0298$, $b_{SE} = .0248$, 95% CI = [-.0997, .0009], indicating that daily hassles was not a significant mediator. The confidence interval for the indirect effect of unhealthy humor on meaning in life through daily uplifts did include zero ($b = .0088$, $b_{SE} = .0174$, 95% CI = [-.0173, .0560], indicating that daily uplifts was not a significant mediator.

To summarize the mediation analysis, the effect of healthy humor on meaning in life was not mediated by either daily hassles or uplifts, nor was the effect of unhealthy humor on meaning in life.

Hypotheses 3 and 4. Similar to Study 1, bivariate correlations (Table 8) revealed that, with only two exceptions, incongruity-resolution humor and nonsense humor were unassociated with measures of meaning in life. Funniness ratings for nonsense humor were significantly positively associated with MLQ search for meaning, and aversiveness ratings for nonsense humor were associated with MLQ presence of meaning. No other correlations reached significance. Given the relatively inconsistent pattern of results across the current studies, funniness and aversiveness ratings of incongruity-resolution

humor and nonsense humor do not appear to be reliably and robustly associated with measures of meaning in life.

New Analyses for H8-H9. Study 3 tested the hypotheses that writing about a stressful experience and making an effort to find humor in the experience would be associated with enhanced well-being (**H8**) and reduced stress and discrepancy (**H9**) compared to a neutral writing topic or expressive writing alone. ANOVAs were conducted to test for significant differences between conditions in well-being, stress, and discrepancy ratings at the 4 week follow-up session. The only significant differences were found for belief violations and extrinsic goal violations. Participants in the humor condition reported significantly lower belief violations ($p = .042$) and extrinsic goal violations ($p = .050$) compared to participants in the expressive writing condition.

To control for baseline levels of well-being, stress, and discrepancy, difference scores were computed by subtracting the initial assessment of each variable at the beginning of the study from the follow-up assessment of each variable 4 weeks later. This resulted in variables that indicated the overall increase or decrease in each variable for each participant. ANOVAs were conducted to test for significant differences between conditions for these difference scores. The only significant result was for the change in depression scores ($p = .001$). Post hoc analyses using Tukey's HSD found that participants in the control condition reported greater decreases in depression than participants in the humor condition ($p = .001$) or expressive writing condition ($p = .023$). Although the analyses of the follow-up measures alone provided some limited support, Study 3 did not provide clear evidence for **H8** or **H9**. Compared to expressive writing

alone or a control condition, writing about a stressful experience and making an effort to find humor in the experience was not associated with greater well-being, reduced stress, or reduced discrepancy at a 4 week follow-up. However, the lack of significant differences in well-being measures such as the PILL, which is regularly used in expressive writing paradigms with significant results, suggests that the expressive writing task may not have been entirely effective. This issue is explored in the general discussion.

GENERAL DISCUSSION

Although the association between humor and well-being has found empirical support and is widely endorsed, the relationship between humor and meaning in life has gone almost entirely unexamined (Korotkov & Hannah, 1994; Kuiper & Martin, 1998). The current studies explored the understudied relationship between humor and meaning in the context of the meaning making model (e.g., Park, 2008; 2010). The relevance of humor in both global judgments of meaning in life as well as situational meaning making processes when coping with potentially stressful experiences were examined across three studies.

Study 1 served as an initial test of the relationship between humor and global meaning in life, recruiting online participants to complete a cross-sectional correlational study. Replicating previous findings, Study 1 provided support for **H1**, showing that healthy forms of humor (affiliative and self-enhancing; as assessed by the HSQ) were associated with a wide range of well-being indicators. Correspondingly, unhealthy forms of humor (aggressive and self-defeating) were negatively associated with indicators of well-being. However, the pattern of associations was not entirely consistent across both aggressive and self-defeating forms of humor. These findings provide support for **H1**, but also suggest that examining each form of humor independently (rather than the healthy and unhealthy humor composites) may provide valuable insights in the current and future research. Study 1 also provided support for **H2**, that healthy forms of humor would be positively associated with meaning in life whereas unhealthy forms of humor

would be negatively associated with meaning in life. Healthy and unhealthy forms of humor were unassociated with actually searching for meaning, distinguishing this aspect of meaning from presence or crisis of meaning. Exploratory mediation analyses revealed that daily uplifts mediated the effect of healthy humor on meaning in life, and daily hassles mediated the effect of unhealthy humor on meaning in life, providing partial support for *H2a*. Of course our ability to interpret these exploratory mediation results is limited, as Study 1 used a correlational design and causation cannot be inferred. Additional exploratory analyses found that incongruity-resolution humor and nonsense humor (assessed by Ruch's 3WD) were essentially unrelated to meaning in life, failing to support *H3* and *H4*.

Study 2 extended Study 1 by having undergraduate participants retrospectively consider a stressful experience in order to explore the role of humor in situational meaning making in addition to global meaning in life. Replicating Study 1 and providing support for *H1* and *H2*, healthy forms of humor were associated with indicators of well-being and global meaning in life. Aggressive humor was generally unassociated with well-being and meaning in life, whereas self-defeating humor was again negatively associated with indicators of well-being and meaning in life. These results provide partial support for *H1* and *H2*, with self-defeating humor being more consistently associated with well-being and meaning in life than aggressive humor. The only significant finding in the exploratory mediation analyses was that daily uplifts mediated the relationship between unhealthy humor and meaning in life, a result that is inconsistent with Study 1 and fails to provide support for *H2a*. Replicating Study 1,

exploratory analyses found that incongruity-resolution humor and nonsense humor were essentially unrelated to meaning in life, failing to support **H3** and **H4**. Analysis of the extent to which participants found or brought to mind humor when considering their stressful experiences provided some support for **H5**: that humor would be associated with making sense of the stressful experience. Finding humor in the stressful experience and bringing to mind humor when considering the stressful experience were both associated with the face-valid measure of meaning made. Bringing humor to mind was also associated with the experience having affected the participant less. **H6**, that finding humor in the stressful experience would be associated with finding the experience less stressful and discrepant with global meaning, was not supported by Study 2. The results were actually in opposition to the predicted relationships, as finding humor in the stressful experience was actually positively associated with global meaning discrepancy (intrinsic goal violations, extrinsic goal violations). Finally, self-enhancing humor was positively associated with finding humor in the stressful experience, providing support for **H7**, that healthy forms of humor would be associated with finding humor in the experience. In particular, this suggests that self-enhancing humor (which is explicitly associated with maintaining a humorous perspective in stressful situations) is an important part of the link between healthy forms of humor and finding humor in a stressful experience.

Study 3 continued to build on the previous studies by having undergraduate participants engage in an experimental expressive writing paradigm designed to examine the potential effects of actively trying to find humor in a stressful experience. Study 3

provided further support for *H1* and *H2*, with healthy forms of humor being positively associated with well-being and meaning in life, and unhealthy forms of humor (especially self-defeating humor) being negatively associated with well-being and meaning in life. *H2a* was again unsupported as neither hassles nor uplifts mediated the relationship between healthy/unhealthy forms of humor and meaning in life. Additionally, no support was found for *H3* or *H4*, with incongruity-resolution humor and nonsense humor being generally unrelated to meaning in life. Failing to support *H8* or *H9*, participants who actively tried to find humor in their stressful experience did not report higher levels of well-being or meaning in life at a 4 week follow-up compared to participants in a standard expressive writing condition or a control condition. The null results of Study 3 are discussed in greater detail in the expressive writing section below.

Humor in the Meaning Making Model

In the context of the meaning making model, the results of the current studies provide clear support for the role of humor in global meaning. Across all three studies, healthy forms of humor were positively associated with meaning in life and unhealthy forms of humor (especially self-defeating humor) were negatively associated with global meaning in life.

Despite the clear relationship between humor and global meaning, the role of humor in the situational meaning component of the meaning making model is less clear. The prediction that humor might be associated with perceiving a potentially stressful event as less threatening or less “serious” was not directly supported in the current studies. Finding humor was not associated with how stressful an event was perceived in

Studies 2 and 3. However, the current findings might not be an especially effective test of this prediction. In both Study 2 and Study 3, participants were considering an experience they had already found to be stressful. It is possible that humor could still enable people to appraise events as being less discrepant and less stressful, and that these experiences were simply not able to be assessed in the current paradigm. Future research should more carefully consider this initial assessment of a potentially stressful experience to better understand the potential role of humor in the appraisal process.

There is some support for humor allowing people to potentially be more comfortable with discrepancies and thus experience less distress in response to these experiences. In Study 1, a cross-sectional study, healthy forms of humor were generally associated with more uplifts and less overall anxiety and stress. As with the role of humor in initial attributions of a potentially stressful experience, the current studies may not be ideal assessments of this part of the meaning making model as they do not examine the initial judgment of discrepancy. In Study 2, actually finding humor in the stressful experience was positively associated with intrinsic goal violations and extrinsic goal violations, suggesting that people are actually more likely to find humor in a highly discrepant experience. Although this could be taken as evidence against the discrepancy reducing role of humor, another interpretation in the context of Study 2 is that participants were responding to the discrepancy with humor in an effort to reduce the discrepancy. Because Study 2 was a retrospective cross-sectional study, the causal order of these processes cannot be determined. An important task for future research is to

examine the role of humor in the meaning making process *in vivo* as participants are actually evaluating potential discrepancy.

Humor also appears to be positively associated with actual meaning making. Finding humor in the stressful experience and bringing to mind humor were associated with the face-valid measure of meaning made in Study 2. Finding humor in the stressful experience was also associated with the coping strategies of active coping, venting, and planning. These findings provide further support for the idea that humor is associated with actual meaning making processes. The associations between humor and global meaning in life also provide indirect support for this relationship, as the end result of meaning making should be the maintenance of global meaning.

The current studies provide evidence for the role of humor in several components of the meaning making model. Humor is clearly associated with global meaning in life, and there is evidence that humor is associated with meaning making processes. The role of humor in initial attributions of potentially stressful experiences and judgments of discrepancy is less clear at this time, however.

Expressive Writing

The expressive writing paradigm used in Study 3 was not successful. Having participants actively try to find humor in their stressful experience did not lead to improved well-being and meaning in life ratings at the 4 week follow-up compared to the control condition, nor did the standard expressive writing condition. Although the humor manipulation appeared successful, as participants in the humor condition reported finding more humor than those in the standard expressive writing condition, none of the

typical well-being effects of an expressive writing study were observed. Participants in the expressive writing or humor conditions did not report reduced physical symptoms or other indicators of well-being at the follow-up assessment. These null results suggest that the expressive writing paradigm may not have been effective in the current study. Although Study 3 followed procedural guidelines from previous research (e.g., Burton & King, 2008; Pennebaker & Beall, 1986), it is possible that some changes to the procedure could have improved its effectiveness. For example, although Burton and King (2008) found that relatively brief expressive writing sessions can lead to reduced physical symptoms at a 4-6 week follow-up, longer writing sessions may enable participants to more effectively engage in meaning making that would subsequently enhance well-being. Reducing distractions by having participants come to the lab to complete all of the daily writing tasks (rather than just the first one) may also benefit future research. Because the typical expressive writing effects were not observed, it is difficult to interpret the null results for the humor condition. In the current study, it is unclear whether or not actively seeking humor in a stressful experience enhances well-being over and above the effects of expressive writing as the expected effects of expressive writing were not observed. Future research should use a more robust expressive writing manipulation in order to establish the expected expressive writing effects and determine if actively seeking humor provides any additional benefit.

Humor in the Broader Context

In addition to contributing to the literature on coping with potentially stressful situations, and the meaning making model in particular as discussed previously, the

current research also contributes to a growing literature on humor and its relevance to various aspects of well-being. In particular, the association between healthy forms of humor (affiliative and self-enhancing) and well-being indicators was replicated with a broad range of measures. The negative association between unhealthy forms of humor (aggressive and self-defeating) and well-being indicators was also replicated, though differences between the specific types of unhealthy humor were more pronounced. Although funniness and aversiveness ratings for incongruity-resolution humor and nonsense humor were not consistently associated with many indicators of well-being across the studies, one finding was somewhat consistent. Aversiveness ratings for both incongruity-resolution humor and nonsense humor were positively associated with uplifts in both Study 1 and Study 2. Interestingly, this suggests that in some cases, aversiveness to humor may be associated with well-being. Though purely speculation, this finding may reflect the notion that avoiding potentially discrepant, threatening, or stressful experiences contributes to well-being.

Another fundamental contribution of the current research to this literature is the direct assessment of the relationship between different forms of humor and meaning in life. To the best of the author's knowledge, the current research is the first to assess the relationship between humor styles (HSQ) and preferences (Ruch's 3WD) and global ratings of meaning in life (MLQ, SoMe), as well as the related constructs of search for meaning and crisis of meaning. In general, healthy forms of humor were positively associated with meaning in life, and unhealthy forms of humor were negatively associated with meaning in life. Ratings for crisis of meaning generally reflected the

opposite pattern, and search for meaning was typically not associated with healthy and unhealthy forms of humor. The correlations for self-enhancing humor and self-defeating humor appeared to be the most robust across all three studies. The lack of significant correlations between humor and search for meaning (with one exception) is interesting as it suggests that although healthy and unhealthy forms of humor may be relevant to the actual presence of meaning, they may be less predictive of whether an individual is actively searching for meaning. Funniness and aversiveness ratings for incongruity-resolution and nonsense humor were infrequently associated with any of the meaning measures, and the correlations that were significant were not consistent across studies.

Limitations and Future Directions

As with any research, the current studies have important limitations that should be considered when interpreting the results. As discussed previously, the expressive writing paradigm used in Study 3 was unsuccessful, greatly limiting the conclusions that can be drawn from those results regarding the effects of actively trying to find humor in a stressful experience. Incorporating a more robust expressive writing manipulation in future studies would potentially allow these effects to be investigated. Also mentioned earlier, the current studies examine the meaning making process after the point at which individuals actually evaluate potential discrepancy and begin to experience distress. Although the current results can speak to the role of humor in initial assessments of potentially stressful experiences and evaluations of discrepancy to some extent, future research could explore the meaning making process while individuals are actually making these initial attributions and discrepancy judgments. Such research would

provide more direct evidence regarding the role of humor in the meaning making process.

The samples in the current study also introduce some limitations to interpreting the results. Participants in Study 1 were recruited online whereas participants in Study 2 and Study 3 were undergraduates. The online participants were much older on average and would have more extensive experience dealing with potentially stressful experiences that may distinguish them from the undergraduate participants. Although the correlational findings for well-being and meaning in life were relatively consistent across all studies, future research could explore the potential influence of life experience and other variables on the role of humor in the meaning making process.

Another limitation is the measures of humor styles (HSQ) and preferences for humor (Ruch's 3WD) used in the current research. Although these assessments were chosen to assess aspects of humor that may be associated with meaning making, other humor assessments may also provide insight into the current research questions. In particular, Ruch's 3WD was found to be generally unassociated with many well-being and meaning in life variables, despite being previously associated with some indicators of well-being (Ruch, 1983). As an older assessment of humor that relies on actual jokes and comics, it may be useful for researchers to revalidate and potentially revise the 3WD to ensure that the constructs of interest continue to be reliably assessed. Additionally, the current research did not include the sexual humor component of the 3WD, though it is possible sexual humor would be associated with indicators of well-being and meaning in life.

CONCLUSION

The current research provides an initial investigation of the role of humor in situational meaning making and global meaning. Clear support was found for the association between humor and global meaning in life. Understanding the role of humor in situational meaning making was more complicated, however. Although humor was associated with meaning making processes, it is difficult to draw conclusions regarding the role of humor in attributions of potentially stressful experiences and discrepancies. The current research provides novel contributions to the humor and meaning literatures and lays the groundwork for future research examining the role of humor in the meaning making process.

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APPENDIX A

PILOT STUDY

A pilot study was conducted to collect general information about the stressful events participants report and to inform the development of the stressful event writing task used in Study 2. Because the current research is investigating the extent to which people are able to find humor in stressful events, it is important that the stressful events participants are asked to consider are not always completely devoid of humor (or too humorous). For instance, if participants tend to report very serious and traumatic events in response to the writing prompt, individual differences in humor may be largely irrelevant to their efforts to make sense of the event. Additionally, asking participants to attempt to find humor in the context of a very serious and traumatic event may be completely ineffective, or be seen by the participant as an inappropriate request. Although it is possible that humor may play a role even in very traumatic experiences, the current research is focused on the role of humor in meaning making for less traumatic but still stressful experiences in which humor may be more likely to have an effect.

As a starting point for developing the writing prompt, participants were asked to describe the a stressful event they experienced in the last two years and completed items assessing the extent to which they have found and are able to find humor in the event. The general prompt was based on the expressive writing paradigm (e.g., Pennebaker &

Beall, 1986) also used in Study 3. Participants also completed additional writing tasks and items designed to inform potential improvements to the writing prompt in the event that the initial prompt was ineffective at having participants recall stressful experiences they can potentially find humor in.

As a follow-up to the first writing prompt (stressful event in last 2 years), participants were specifically asked to think about a stressful event they experienced in which they had found some sort of humor. By examining the types of stressful events that lend themselves to experiencing humor, the writing prompt could be revised if necessary to guide participants to write about such events. Additionally, other factors such as how long ago the stressful event occurred and how stressful or traumatic the event was initially were assessed to determine if the writing prompt should ask participants to specifically report an event based on these characteristics (e.g., “stressful but not life changing”, “occurred at least 6 months ago”).

An important consideration for the pilot study and Study 2 was the possibility that being asked to consider a stressful event from the past may be a distressing or aversive experience for some participants. In a recent study examining the potential risk of studies that ask about sensitive topics such as traumatic or sexual experiences, Yeater and colleagues (2012) found that completing a survey about traumatic experiences was rated as being less distressing than everyday stressors (e.g., waiting in line for 20 minutes at a bank). Completing the survey about traumatic experiences was not associated with increased negative affect, and was actually associated with increased positive affect compared to participants in a control condition. These findings are

consistent with research showing that considering and reflecting upon stressful experiences can promote positive psychological and physical health outcomes (e.g., Pennebaker & Beall, 1986). Despite the previous research indicating that the current studies should pose minimal risk to participants, care was taken to avoid tasks that might be particularly distressing and aversive and to provide resources to participants who may be negatively affected as a result of their participation in the study. First, participants were informed that they are allowed to skip questionnaires or tasks if they found them to be distressing. If participants chose not to describe a stressful event, they were not asked to complete any of the related items about that event. Second, all participants were thoroughly debriefed and provided with information about counseling resources available to them (e.g., student counseling center, phone numbers for counseling hotlines) and contact information for the researcher in the event they had any questions or concerns.

Method

Participants. Forty-seven participants were recruited from the Texas A&M University psychology subject pool and received credit toward their course research participation requirements for their participation.

Materials and Procedure.

Writing task. Participants were presented with the following instructions for the writing task and typed their response in a text box provided for them:

We would like for you to write about your very deepest thoughts and feelings about a stressful experience from the last 2 years. In your writing, we'd like you

to really let go and explore your very deepest emotions and thoughts. You might tie this experience to your childhood or your relationships with others, including parents, lovers, friends or relatives. You may also link this event to your past, your present or your future, or to who you have been, who you would like to be, or who you are now. All of your writing will be completely confidential. Don't worry about spelling, sentence structure, or grammar. Please take a few minutes to write about your very deepest thoughts and feelings about a stressful experience from last 2 years.

Humor ratings of stressful experience. After describing their stressful experience, participants were asked if they have found humor in the event on a 7-point scale (1 = *not at all*; 7 = *very much*). If the participant reported finding humor in the event, they were also asked to provide a brief description of what they found humorous. This measure provides a direct assessment of the extent to which participants were able to find humor in the event itself.

It is also possible that people may not find humor in the stressful experience itself, but that thinking about the event brings to mind something humorous. To examine this possibility, participants were asked to indicate the extent to which thinking about the event brought to mind anything they find funny or humorous on a 7-point scale (1 = *not at all*; 7 = *very much*). Participants were also asked to provide a brief description of anything humorous that was brought to mind by thinking about the stressful experience.

Finally, participants were asked to provide basic descriptive information about the experience, such as how long ago the experience occurred, how stressful the event

was when they initially experienced it, how much the event is currently affecting them, and how much the experience has affected them.

Follow-up writing task. After completing the items about the first writing task, participants were presented with the following instructions for the follow-up writing task and typed their response in a text box provided for them:

We would like for you to write about your very deepest thoughts and feelings about a stressful experience in which you have found some sort of humor. That is, think about and describe an experience that you found stressful at the time it occurred, but that you now find humorous or funny in some way. All of your writing will be completely confidential. Don't worry about spelling, sentence structure, or grammar. Please take a few minutes to write about your very deepest thoughts and feelings about a stressful experience in which you have found some sort of humor.

After the follow-up writing task, participants completed the same humor ratings and descriptive information used in the first writing task.

Debriefing. After completing the study materials, participants were thoroughly debriefed. All participants were provided with information about counseling resources available to them.

Results

Participants reported finding a moderate amount of humor in the stressful experience from the past two years ($M = 2.74$, $SD = 1.95$), and that thinking about the stressful experience brought humorous things to mind ($M = 2.62$, $SD = 1.58$). These

results indicated that the writing prompt was effective in having participants report a stressful experience in which they could potentially find some humor in. No modifications were deemed necessary for the writing prompt.

APPENDIX B

SUPPLEMENTAL TABLES

Complete bivariate correlation tables for the variables in Study 1, Study 2, and Study 3 are not included in this document due to their exceptionally large size. These tables are provided as a separate spreadsheet document. Descriptive statistics by condition for the variables at both T1 and T2 in Study 3 is provided as well.