Published in final edited form as:

J Posit Psychol. 2013 September 1; 8(5): . doi:10.1080/17439760.2013.807354.

Expectancy violations and the search for meaning among breast cancer survivors

Rebecca J. Schlegel^{a,*}, Mark A. Manning^b, and B. Ann Bettencourt^c

^aPsychology, Texas A&M University, College Station, TX, USA

^bDepartment of Oncology, Karmanos Cancer Institute, Wayne State University School of Medicine, Detroit, MI, USA

^cPsychology, University of Missouri, Columbia, MO, USA

Abstract

A number of theoretical perspectives suggest that expectancy violations (EVs) threaten a person's sense of meaning and prompt efforts to reinstate meaning. Yet, little to no research has explicitly examined whether EVs predict actual efforts to search for meaning. The current research redresses this gap in the literature among a sample of breast cancer survivors. The results revealed that EVs, but not life satisfaction, positively predicted the search for meaning. By comparison, the presence of meaning was predicted by both EVs and life satisfaction. Further, EVs predicted an increased search for meaning among participants who simultaneously believed that their life had high levels of meaning. Thus, personal EVs may offer a compelling framework for understanding what prompts searches for meaning.

Keywords

meaning; search for meaning; presence of meaning; breast cancer; expectancy violations

Life-threatening events are often perceived as unexpected and surprising. Research shows that, in general, unexpected events engender increased cognitive processing and a search for an explanation (Olson, Roese, & Zanna, 1996). Consistent with this, previous research show that people try to find meaning in a traumatic event (e.g. Davis, Wortman, Lehman, & Silver, 2000; Park & Folkman, 1997; Silver, Boon, & Stones, 1983). However, when an event threatens one's life, as a cancer diagnosis might, this may also engender a broader form of cognitive processing about life itself. That is, a cancer diagnosis may serve as an impetus to search for meaning in one's life, rather than just the event. The current research will examine this relatively understudied holistic form of cognitive processing. Specifically, the current research examines whether expectancy violations (EVs) about the quality of one's life promote efforts to search for meaning in one's life among a sample of breast

© 2013 Taylor & Francis

*Corresponding author. beccaschlegel@tamu.edu.

Publisher's Disclaimer: Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

cancer survivors. We hypothesize that the belief that the quality of one's life is worse than expected will predict the propensity to engage in a search for meaning.

This hypothesis rests on the idea that there are likely individual differences in the extent to which cancer diagnoses are perceived as unexpected. That is, although few people are likely to expect to get breast cancer, the diagnosis may be relatively more or less unexpected depending on one's family background, age, and other factors. This is important because a breast cancer diagnosis may prompt a search for meaning only to the extent that the diagnosis violates the expectancies of the individual. Put another way, people who do not report that their expectancies have been violated may not feel much impetus to search for meaning in their life, because the diagnosis does not threaten their understanding of how the world works (e.g. Davis et al., 2000; Heine, Proulx, & Vohs, 2006; Janoff-Bulman, 1992; Olson et al., 1996; Park & Folkman, 1997; Roese & Sherman, 2007).

The search for meaning in life

In recent years, empirical interest in the subjective experience of meaning in life has grown. The vast majority of this work has focused on the *presence* of meaning, by investigating the antecedents (e.g. Batson & Stocks, 2004; Florian, Mikulincer, & Hirschberger, 2001; Hicks & King, 2008; King, Hicks, Krull, & Del Gaiso, 2006) and consequences (e.g. Heisel & Flett, 2004; Mascaro & Rosen, 2005; Steger & Kashdan, 2007; Zika & Chamberlain, 1992) of the feeling that life is meaningful.

Nevertheless, research is beginning to focus on the *search* for meaning and this work suggests that the search for and presence of meaning in life are not simply inverses of each other (Reker & Cousins, 1979). Indeed, self-reports of the search for meaning and the presence of meaning in life are only modestly negatively correlated (Crumbaugh, 1977; Steger, Frazier, Oishi, & Kaler, 2006; Steger, Kashdan, Sullivan, & Lorentz, 2008; Steger, Oishi, & Kesebir, 2011), suggesting that the search for meaning in life is not merely motivated by the perception that one's life lacks meaning.

If not a simple lack of meaning, what else may motivate efforts to search for meaning in life? To the best of our knowledge, there is only one empirical study (Steger et al., 2008) that examines the potential predictors of the search for meaning. This comprehensive study investigated a large number of personality and cognitive factors theorized to predict individual differences in the tendency to search for meaning in life. The study revealed that people who scored high on a measure of search for meaning could be characterized as having an 'abiding uncertainty about whether life has proceeded in a desirable manner, accompanied by an investment in uncovering a better path' (p. 222). The current work builds on this investigation by examining a specific assessment of one's life that maps directly onto the personality profile described by Steger et al.: the feeling that one's life has not gone as well as expected (i.e. a personal EV).

Expectancy violations

Theory (Burgoon, 1978; Burgoon & Hale, 1988; Olson et al., 1996; Roese & Sherman, 2007) and research (e.g. Bettencourt, Dill, Greathouse, Charlton, & Mulholland, 1997; Coleman, Jussim, & Kelley, 1995; Jussim, Coleman, & Lerch, 1987; Kernahan, Bartholow, & Bettencourt, 2000) suggest that EVs influence people's thoughts, emotions, and behavior in a variety of ways. Much of the research on EVs has been conducted in the domain of person perception (Bettencourt et al., 1997; Biernat, Vescio, & Green, 1996; Jussim et al., 1987). However, people may also experience more intrapersonal EVs, such as violations of their expectations about the course or quality of their own lives.

Only two studies (Feldman, 2005; Negy, Schwartz, & Reig-Ferrer, 2009) have been designed to understand the influences of such 'personal' EVs and each of these examined negative emotionality as outcomes. Feldman (2005) found mixed support for the idea that EVs surrounding a negative life event predict negative emotions. Negy et al.'s (2009) study examined Hispanic immigrants living in the USA and demonstrated that the greater the discrepancy between expectations and experiences (i.e. greater EVs), the higher the reported level of acculturative stress.

The dearth of research in this area is somewhat surprising, given that a number of theoretical perspectives suggest that personal EVs should prompt a search for meaning. One notable theory to recently address this issue is the meaning maintenance model (MMM) (Heine et al., 2006). The MMM suggests that when people encounter a disruption in their meaning system (e.g. a violation of how they expect the world to work), they are motivated to re-establish a sense of meaning and are likely to take efforts to ameliorate the potential existential threat. Similar points have been made by other theorists with the ideas of shattered assumptions (Janoff-Bulman, 1992) and discrepancies between global and situational meaning (Park, 2010; Park & Folkman, 1997), among others (e.g. Baumeister, 1991; Thompson & Janigan, 1988).

To date, however, there has been little empirical work that has examined self-reported effort to search for meaning, following real-life EVs. The current work aims to fill this gap by examining personal EVs about the quality of one's life among a sample of women who have experienced a major health threat (i.e. breast cancer). This is a sample that is particularly likely to report personal EVs, given that most people expect to have a healthy future (e.g. Roesse & Sherman, 2007). Nonetheless, Davis et al. (2000) report evidence that even very traumatic events (i.e. the sudden loss of either a spouse or child) may not violate the expectancies of all individuals. More specifically, Davis and colleagues found that a significant proportion of people they interviewed reported that they never searched for meaning, following the trauma they experienced. Based on anecdotal evidence from the interviews, the authors surmised that this somewhat surprising finding might be explained by these participants holding a worldview that actually *expects* major stressors and accepts them as uncontrollable. If no expectancies are violated, then there may not be a need to search for meaning.

This suggests that there may be individual differences in the extent to which a cancer diagnosis violates expectancies. Perhaps, a cancer diagnosis actually fits into some individual's worldview as just another 'hurdle' in a life full of hurdles. Such an individual may feel that her life has progressed in the way she expected, despite having to overcome such hurdles. The current study explores the possibility that individual differences in the belief that life has or has not proceeded as expected predict the tendency to search for meaning in life.

The current study

We examined the role of negative personal EVs among a sample of breast cancer survivors by asking participants to rate the extent to which the quality of their lives were more negative than what they had expected. To determine whether any observed relationship between EVs and search for meaning was explained specifically by EVs instead of by a general propensity to feel negatively about life, we controlled for life satisfaction and negative mood. We also controlled for the stage of their cancer to ensure that EVs were not simply a function of diagnosis severity. We used path models to relate our predictors to both the presence of and search for meaning in life.

We also explored the possibility that EVs and presence of meaning may interact to predict the search for meaning in life. This hypothesis was based on the work of (Steger et al., 2008) that showed that the moderate negative relationship between presence and search is moderated by a number of cognitive and personality trait variables (e.g. relatedness, rumination, autonomy, approach motivation). The nature of these interactions suggests that high presence of meaning does not necessarily reduce the propensity to search for meaning in one's life. For example, people who are high in approach motivation or rumination tend to search for meaning, *even if* they already report high levels of 'found' meaning. In the same way, an EV may prompt a search for meaning among individuals who simultaneously feel that their life has high levels of meaning. That is, EVs may lead a person to believe that life could be more meaningful, regardless of how much meaning they currently perceive in their lives.

Methods

Participants were 188 breast cancer survivors who were part of a larger sample ($n = 240$) in a longitudinal study of adjustment to breast cancer. The current study includes only those participants who completed the fifth wave of data collection (i.e. the only survey that included the relevant measures). The first wave of data collection occurred during the first week of radiation treatment and the fifth wave was completed approximately 2.5 years later (with some variability between participants in date of completion). The average age of the participants at Wave 1 was 56.93 years ($SD = 12.27$, range: 27–91), the majority (69%) were married, and the median income bracket was \$35,000–45,000 (income was measured categorically).

Participants were recruited by nurses at nine radiation-oncology clinics throughout the state of Missouri. Eligible patients were provided with baseline surveys during their first week of radiation therapy. Eligible patients were female, 18 years of age or older, undergoing radiation treatment, and English speaking. Of those patients who received a packet from a nurse, approximately 59% elected to return the survey. No data on reasons for refusal or demographics are available for patients who refused to participate. Participants were paid \$25 for each survey (more details about the larger study and the sample can be found in Schlegel, Talley, Molix, & Bettencourt, 2009; Talley, Kocum, Schlegel, Molix, & Bettencourt, 2012; Talley, Molix, Schlegel, & Bettencourt, 2010).

Measures

Personal EVs—We used a general measure of personal EV that asked participants to reflect on the extent to which they felt the quality of their life was more negative than they had expected. These items were developed as face-valid test of the extent to which one's expectancies about the quality of her life had been violated and have not been used in previous research. The measure included the following two items: 'Compared to what I was expecting, the quality of my life at this time is much more negative' and 'Compared to what I was expecting, the quality of my life at this time is much more positive (Reverse scored).' Women responded on a 7-point scale (1 = Strongly Disagree, 7 = Strongly Agree). Higher values indicated stronger EVs ($M = 2.64$, $SD = 1.41$, $\alpha = 0.79$; four women did not provide data). These two items were included in each of the five waves of data collection (the meaning in life measures were not); this allowed us to estimate the test-retest reliability for the EV measure by computing a Cronbach's alpha for the five repeated measurements. This analysis suggested high test-retest reliability across measurement points ($\alpha = 0.88$).

Presence of and search for meaning in life—Participants completed both the five-item presence subscale and the five-item search subscale of the Meaning in Life

Questionnaire (Steger et al., 2006). All items were rated on a 7-point scale (1 = Absolutely untrue, 7 = Absolutely true). Example items from the search subscale include 'I am looking for something that makes my life feel meaningful' and 'I am always looking to find my life's purpose.' Higher values indicate greater search for meaning ($M = 3.63$, $SD = 1.58$, $\alpha = 0.91$; one woman did not provide data). Example items from the presence subscale include 'I understand my life's meaning' and 'My life has a clear sense of purpose.' Higher values indicate greater presence of meaning ($M = 5.29$, $SD = 1.06$, $\alpha = 0.86$). Replicating past research (Steger & Kashdan, 2007; Steger et al., 2006, 2008), the search and meaning subscales were negatively correlated ($r = -0.29$, $p < 0.01$; see Table 1).

Life satisfaction—Global life satisfaction was measured with the five-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Example items include 'In most ways, my life is close to ideal' and 'The conditions in my life are excellent.' Women responded on a 7-point scale (1 = Strongly Disagree, 7 = Strongly Agree), with higher values indicating greater life satisfaction ($M = 4.98$, $SD = 1.31$, $\alpha = 0.89$; two women did not provide data).

Mood—We assessed mood with subscales from the Profile of Mood States (McNair, Lorr, & Droppleman, 1971) scale. Participants responded to mood items and indicated how they 'have felt in the past month' on a scale from 0 (Not at all) to 4 (Extremely). We used a composite of the following subscales: vigor (e.g. *lively, active*; $\alpha = 0.91$), depression (e.g. *unhappy, sad*; $\alpha = 0.92$), tension (e.g. *tense, nervous*; $\alpha = 0.84$), anger (e.g. *angry, annoyed*; $\alpha = 0.85$), and fatigue (e.g. *fatigued, weary*; $\alpha = 0.94$). To create our mood measure, we subtracted the mean of each woman's depression, tension, anger, and fatigue subscales from her mean score on the vigor subscale; hence, our measure indicates the extent to which there was more positive mood relative to negative mood ($M = 0.85$, $SD = 1.40$, range = -2.79 to 4.00 ; one woman did not provide data).

Stage at diagnosis—Patients' stage of breast cancer was collected by nurses from medical records. For 16 participants, no stage information was provided and self-reported stage information was substituted. Stage was coded according to the American Joint Committee on Cancer's tumor, node, metastasis staging system. The breakdown of stage at diagnosis was as follows: 39 Stage 0, 73 Stage 1, 39 Stage 2, 23 Stage 3, and 4 Stage 4 (Stages 3 and 4 were combined in the analyses due to the small number of women diagnosed with Stage 4). Stage data was missing for three of the women.

Results

Path analysis

The primary analyses were path models fit with LISREL 8.8 (Jöreskog & Sörbom, 2007). We used a full-information maximum likelihood procedure appropriate for missing data. A preliminary path model was fit in which EV, life satisfaction, mood, and stage were exogenous variables and search for meaning and the presence of meaning were endogenous variables. Among the exogenous variables, correlations were modeled among EV, life satisfaction, and mood. A prior model indicated that stage was only related to life satisfaction; hence, the correlations between stage with EVs and mood were excluded. Correlated residuals between search for meaning and found meaning were also modeled. Each exogenous variable was specified to predict each endogenous variable, thereby yielding a fully saturated model. A final model was reached by trimming paths from subsequent models until all remaining paths were at least marginally significant ($p < 0.10$). A model that is well represented by the data is indicated by a nonsignificant χ^2 statistic and a root mean squared error of approximation (RMSEA) that is less than 0.08 (e.g. Kline, 2010).

Model fit indices for the final model indicated that the model was a good fit to the data ($\chi^2(6) = 3.00, p = 0.81$; RMSEA = 0.00, 90% CI = 0.00, 0.06).

As can be seen in Figure 1, the final model indicated that EVs indeed positively predict the search for meaning. By comparison, mood and life satisfaction were unrelated to the search for meaning. This suggests that negative feelings about one's life are not enough to prompt a search for meaning. Rather, it seems that those negative feelings must violate personal expectancies for them to prompt a search for meaning. In contrast, presence of meaning was positively related to life satisfaction and marginally negatively related to EVs. This suggests that the feeling that meaning is present in one's life can be threatened by negative feelings, regardless of whether they are expectancy violating or not.

Interestingly, the stage of cancer also marginally predicted the search for meaning, but did not predict the presence of meaning, suggesting that later-stage diagnoses are not necessarily direct existential threats, but may still prompt a search for meaning (though the size of the effect is relatively weak). Perhaps, later diagnoses constitute greater EV. This unexpected finding is more fully explored in the discussion.

Mood was unrelated to either the presence of or search for meaning. This is counter to previous research on the relationship between affect and the presence of meaning (Hicks, Cicero, Trent, Burton, & King, 2010; Hicks & King, 2008; Hicks, Schlegel, & King, 2010; Hicks, Trent, Davis, & King, 2012; King et al., 2006). This may be explained by the relative weight given to negative affect rather than positive affect in our measure (see King et al., 2006) and/or the nature of the sample (none of this previous work has utilized patient populations).

Moderator analysis

In order to test the hypothesis that the presence of meaning and EVs may interact to predict search, we regressed self-reported search for meaning on the presence of meaning, EVs, and their interaction. Both presence and EVs were standardized prior to the regression (as was the search for meaning) and the product of these two standardized variables served as the interaction term. The results revealed a significant interaction between presence and EVs ($\beta = 0.18, p = 0.005$). The nature of this interaction is shown in Figure 2. Simple slope analyses revealed that participants low in presence tended to report high levels of searching, regardless of their personal EVs ($\beta = -0.05, p = 0.59$). For people high in presence, however, EVs were predictive of search for meaning ($\beta = 0.32, p = 0.008$). This suggests that high presence was not enough to alleviate the propensity to search for meaning among participants who experienced personal EVs. Consistent with this idea, predicted means tests revealed no difference between women who were high vs. low in presence at high levels of EV ($\beta = -0.10, p = 0.31$). By comparison, at low levels of EV, women with high presence reported less searching than their counterparts with low presence scores ($\beta = -0.47, p < 0.001$), suggesting that the presence of meaning did alleviate the propensity to search for women who reported relatively low levels of EV. In sum, the only women who reported relatively low levels of search for meaning were those who reported high presence of meaning and low EVs. By comparison, those women who reported high presence, but also high EVs, looked more similar to women who reported low presence of meaning.

Finally, we also conducted the same regression analyses with the covariates from the path analysis included (i.e. stage of cancer, life satisfaction, and mood), in order to ensure that the inclusion of these related variables did not attenuate the interaction effect. The results revealed that the inclusion of the covariates had almost no effect on the estimate of the interaction term ($\beta = 0.17, p = 0.009$).

Discussion

This study is among the first to examine the influence of intrapersonal rather than interpersonal EVs (Feldman, 2005; Negy et al., 2009) and, to the best of our knowledge, is the first to directly test whether such intrapersonal EVs prompt an active effort to search for meaning in life. The findings were consistent with a variety of theoretical perspectives on the meaning-making process (Baumeister, 1991; Heine et al., 2006; Janoff-Bulman, 1992; Park, 2010; Park & Folkman, 1997; Thompson & Janigian, 1988) and contribute to the growing empirical literature on meaning (Hicks & King, 2009; Steger et al., 2006, 2008). In this way, the current study also sheds light on one aspect of the vast individual differences in the subjective experience of traumatic events.

In particular, the current findings provide converging support for the idea that the search for meaning in life is not simply prompted by the lack of presence of meaning (Reker & Cousins, 1979; Steger et al., 2008). Rather, the search for meaning in life and presence of meaning in life appear to be separate, albeit related, constructs that can be distinguished by their antecedents. The current results revealed that the presence of meaning in life was predicted by both life satisfaction and EVs, whereas the search for meaning in life was only predicted by EVs. This suggests that negative feelings about one's life can threaten the presence of meaning *regardless* of whether they violate expectancies or not, whereas negative feelings about one's life *only* prompt a search for meaning to the extent that they violate one's personal expectancies. This is consistent with the idea that traumatic experiences may not actually violate everybody's expectancies (Davis et al., 2000).

The moderation analyses shed further light on the distinction between the search for and the presence of meaning in life. Specifically, the results revealed that under certain circumstances, individuals may feel compelled to search for meaning even if they already believe that their lives have a lot of meaning (Steger et al., 2008). The current work identifies personal EVs as one such circumstance. The finding that EVs prompt a search for meaning also contributes to the literature that demonstrates the variety of effects that EVs have on cognition and emotion (e.g. Bettencourt et al., 1997; Biernat et al., 1996; Jussim et al., 1987).

In addition to the findings for self-reported EVs, the marginally significant path between stage of diagnosis and search for meaning provides potentially corroborative evidence that EVs fuel the need to search for meaning. Considering that more advanced cancer diagnoses likely constitute larger threats to one's expectations for a healthy life, this finding is consistent with the MMM's tenet that the size of a meaning threat should dictate the extent of one's efforts to reinstate meaning (Heine et al., 2006). Note that the lack of correlation between stage and EVs is not necessarily inconsistent with this interpretation, given that our EV measure was a more general evaluation of one's life. Of course, the path between stage and search was only marginally significant and the findings should be interpreted with caution. Perhaps, if the participants were closer in time to their diagnoses (our participants were approximately 2.5 years posttreatment), this path would have been stronger. This certainly suggests an interesting direction for future research.

Limitations and future directions

The current study suggests that EVs are a potent predictor of individual efforts to search for meaning; however, it is important to note that these findings cannot speak to whether these efforts were ultimately adaptive or not. There is no clear agreement in the literature regarding whether efforts to search for meaning are simply normative or are symptomatic of a problem (Baumeister, 1991; Frankl, 1959; Park & Folkman, 1997; Steger et al., 2008). Based on the moderator analyses, we believe that the answer likely depends on other

characteristics of the individual. For example, the feeling that your life could have gone better may serve either as a source of motivation to work toward improvement or as a source of regret, perhaps depending on other characteristics of the individual (e.g. level of optimism or self-efficacy). As another possibility, the search for meaning may be motivated by growth-oriented motives. For example, perhaps the women who were high in both search and presence were interested in simply deepening or enriching their current sense of meaning in a nondefensive, adaptive way. In this way, the process of searching for meaning after a trauma could mirror the meaning enrichment that is likely to occur after a positive event, such as the birth of a child. Further investigating the consequences of intrapersonal EVs and efforts to find meaning are important directions for future research.

It would also be interesting to examine these processes among a sample of individuals who have experienced a positive EV (e.g. lottery winners) to see if the findings generalize. Of course, most people tend to hold positive expectancies about their lives, making this type of investigation potentially more challenging. This potential challenge is highlighted by the large correlation between the positive and negatively valenced EV items we used in this study. Perhaps, future research could include questions that ask if one's experiences are simply different than what they expected, without making reference to whether those differences are positive or negative. This would be particularly interesting, given that previous research demonstrates that very neutral experiences, such as implicitly perceived visual anomalies (i.e. switching similarly dressed experimenters, Proulx & Heine, 2008) and reading absurdist literature (Proulx, Heine, & Vohs, 2010), can be enough to violate one's expectancies and threaten one's meaning system.

Measuring EVs in a more valence neutral way might also allow us to further distinguish between the effects of EVs and more general life satisfaction, as these two variables were highly correlated. Indeed, the relatively high correlation between these variables might make one wonder about the nature of the variance that is leftover in EV when life satisfaction is covaried out. We think the fact that the path analysis and the moderator analysis that controlled for life satisfaction both returned significant effects that are consistent with theoretical expectation suggests that the unique variance leftover in the EV measure is meaningful.

Future research should also examine what predicts the experience of an intrapersonal EV. The idea that these participants held different world views prior to their cancer diagnosis (e.g. Davis et al., 2000) is intuitively appealing; however, the data cannot speak for this issue. Perhaps, the answer lies in worldviews, past experiences, or simply other personality characteristics. Further, it would be helpful for future research to distinguish between specific and general EVs. The current study utilized a general measure of personal EV (i.e. the belief that the quality of one's life has been more negative than they expected), rather than a cancer specific measure (i.e. the degree to which being diagnosed with cancer violated one's health expectancies). While we see both approaches as useful (and likely correlated; e.g. Park & Folkman, 1997), future research should explore whether general and specific EVs have similar or distinct antecedents and consequences.

The current study is, of course, also limited in other ways. For example, the sample is composed exclusively of female breast cancer survivors. Thus, it is not entirely clear whether these processes would generalize to men or to nonbreast cancer survivors. Further, the study is limited by its cross-sectional, correlational nature, which limits the ability to draw inferences about causation from the current data. Future research should explore these issues longitudinally to determine whether EVs at an earlier time point predict later efforts to search for meaning (e.g. cross-lagged models). Nonetheless, we think the 'real life' nature

of the data provide an important counterweight to the experimental work conducted on EVs and meaning-making (e.g. Heine et al., 2006).

Conclusions

The current work suggests that EVs provide a powerful framework for understanding when people are likely to search for meaning in their lives, a research question that has received relatively little attention in the meaning literature. The feeling that one's life has not proceeded as he or she expected appears to be an important impetus for the feeling that there must a better way to understand it.

References

- Batson, CD.; Stocks, EL. Religion: Its core psychological functions. In: Greenberg, J.; Koole, SL.; Pyszczynski, T., editors. *Handbook of experimental existential psychology*. New York, NY: Guilford Press; 2004. p. 141-155.
- Baumeister, RF. *Meanings of life*. New York, NY: Guilford Press; 1991.
- Bettencourt BA, Dill KE, Greathouse SA, Charlton K, Mulholland A. Evaluations of ingroup and outgroup members: The role of category-based expectancy violation. *Journal of Experimental Social Psychology*. 1997; 33:244–275.
- Biernat M, Vescio TK, Green ML. Selective self-stereotyping. *Journal of Personality and Social Psychology*. 1996; 71:1194–1209. [PubMed: 8979386]
- Burgoon JK. A communication model of personal space violations: Explication and an initial test. *Human Communication Research*. 1978; 4:129–142.
- Burgoon JK, Hale JL. Nonverbal expectancy violations: Model elaboration and application to immediacy behaviors. *Communication Monographs*. 1988; 55:58–79.
- Coleman LM, Jussim L, Kelley SH. A study of stereotyping: Testing three models with a sample of blacks. *Journal of Black Psychology*. 1995; 21:332–356.
- Crumbaugh JC. The seeking of noetic goals test (SONG): A complementary scale to the purpose in life test (PIL). *Journal of Clinical Psychology*. 1977; 33:900–907. [PubMed: 893732]
- Davis CG, Wortman CB, Lehman DR, Silver RC. Searching for meaning in loss: Are clinical assumptions correct? *Death studies*. 2000; 24:497–540. [PubMed: 11503666]
- Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *Journal of Personality Assessment*. 1985; 49:71–75. [PubMed: 16367493]
- Feldman, DB. When surprises aren't fun. University of Kansas; 2005 Jun. Retrieved from <http://gradworks.umi.com/31/64/3164457.html>
- Florian V, Mikulincer M, Hirschberger G. An existentialist view on mortality salience effects: Personal hardiness, death-thought accessibility, and cultural worldview defence. *British Journal of Social Psychology*. 2001; 40:437–453. [PubMed: 11593943]
- Frankl, VE. *Man's search for meaning*. Boston, MA: Beacon Press; 1959.
- Heine SJ, Proulx T, Vohs KD. The meaning maintenance model: On the coherence of social motivations. *Personality and Social Psychology Review*. 2006; 10:88–110. [PubMed: 16768649]
- Heisel M, Flett G. Purpose in life, satisfaction with life, and suicide ideation in a clinical sample. *Journal of Psychopathology and Behavioral Assessment*. 2004; 26:127–135.
- Hicks JA, Cicero DC, Trent J, Burton CM, King LA. Positive affect, intuition, and feelings of meaning. *Journal of Personality and Social Psychology*. 2010; 98:967–979. [PubMed: 20515252]
- Hicks JA, King LA. Religious commitment and positive mood as information about meaning in life. *Journal of Research in Personality*. 2008; 42:43–57.
- Hicks JA, King LA. Meaning in life as a subjective judgment and a lived experience. *Social and Personality Psychology Compass*. 2009; 3:638–653.
- Hicks JA, Schlegel RJ, King LA. Social threats, happiness, and the dynamics of meaning in life judgments. *Personality and Social Psychology Bulletin*. 2010; 36:1305–1317. [PubMed: 20729336]

- Hicks JA, Trent J, Davis WE, King LA. Positive affect, meaning in life, and future time perspective: An application of socioemotional selectivity theory. *Psychology and Aging*. 2012; 27:181–189. [PubMed: 21707177]
- Janoff-Bulman, R. *Shattered assumptions*. New York, NY: Simon and Schuster; 1992.
- Jöreskog, K.; Sörbom, D. LISREL 8.80. Chicago, IL: Scientific Software International; 2007.
- Jussim L, Coleman LM, Lerch L. The nature of stereotypes: A comparison and integration of three theories. *Journal of Personality and Social Psychology*. 1987; 52:536–546.
- Kernahan C, Bartholow BD, Bettencourt BA. Effects of category-based expectancy violation on affect-related evaluations: Toward a comprehensive model. *Basic and Applied Social Psychology*. 2000; 22:85–100.
- King LA, Hicks JA, Krull JL, Del Gaiso AK. Positive affect and the experience of meaning in life. *Journal of Personality and Social Psychology*. 2006; 90:179–196. [PubMed: 16448317]
- Kline, RB. *Principles and practice of structural equation modeling*. 3rd ed.. Chicago, IL: Guilford Press; 2010.
- Mascaro N, Rosen DH. Existential meaning's role in the enhancement of hope and prevention of depressive symptoms. *Journal of Personality*. 2005; 73:985–1014. [PubMed: 15958142]
- McNair, DM.; Lorr, M.; Droppleman, LF. *Profile of mood states*. San Diego, CA: Educational and Industrial Testing Service; 1971.
- Negy C, Schwartz S, Reig-Ferrer A. Violated expectations and acculturative stress among US Hispanic immigrants. *Cultural Diversity and Ethnic Minority Psychology*. 2009; 15:255–264. [PubMed: 19594254]
- Olson, JM.; Roese, NJ.; Zanna, MP. Expectancies. In: Higgins, ET.; Kruglanski, AW., editors. *Social psychology: Handbook of basic principles*. New York, NY: Guilford Press; 1996. p. 211–238.
- Park CL. Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin*. 2010; 136:257–301. doi:<http://dx.doi.org/10.1037/a0018301>. [PubMed: 20192563]
- Park C, Folkman S. Meaning in the context of stress and coping. *Review of General Psychology*. 1997; 1:115–144.
- Proulx T, Heine SH. The case of the transmogrifying experimenter: Affirmation of a moral schema following implicit change detection. *Psychological Science*. 2008; 19:1294–1300. [PubMed: 19121140]
- Proulx T, Heine SH, Vohs KD. When is the unfamiliar the uncanny? Meaning affirmation after exposure to absurdist literature, humor, and art. *Personality and Social Psychology Bulletin*. 2010; 36:817–829. [PubMed: 20445024]
- Reker GT, Cousins JB. Factor structure, construct validity and reliability of the seeking of noetic goals (SONG) and purpose in life (PIL) tests. *Journal of Clinical Psychology*. 1979; 35:85–91.
- Roese, NJ.; Sherman, JW. Expectancy. In: Kruglanski, AW.; Higgins, ET., editors. *Social psychology: Handbook of basic principles*. 2nd ed.. New York, NY: Guilford Press; 2007. p. 91–115.
- Schlegel RJ, Talley AE, Molix LA, Bettencourt BA. Rural breast cancer patients, coping and depressive symptoms: A prospective comparison study. *Psychology & Health*. 2009; 24:933–948. [PubMed: 20205037]
- Silver RL, Boon C, Stones MH. Searching for meaning in misfortune: Making sense of incest. *Journal of Social Issues*. 1983; 39:81–101.
- Steger MF, Frazier P, Oishi S, Kaler M. The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*. 2006; 53:80–93.
- Steger M, Kashdan T. Stability and specificity of meaning in life and life satisfaction over one year. *Journal of Happiness Studies*. 2007; 8:161–179.
- Steger MF, Kashdan TB, Sullivan BA, Lorentz D. Understanding the search for meaning in life: Personality, cognitive style, and the dynamic between seeking and experiencing meaning. *Journal of Personality*. 2008; 76:199–228. [PubMed: 18331281]
- Steger MF, Oishi S, Kesebir S. Is a life without meaning satisfying? The moderating role of the search for meaning in satisfaction with life judgments. *The Journal of Positive Psychology*. 2011; 6:173–180.

- Talley AE, Kocum L, Schlegel RJ, Molix L, Bettencourt BA. Social roles, basic need satisfaction, and psychological health the central role of competence. *Personality and Social Psychology Bulletin*. 2012; 38:155–173. [PubMed: 22215698]
- Talley A, Molix L, Schlegel RJ, Bettencourt A. The influence of breast cancer survivors' perceived partner social support and need satisfaction on depressive symptoms: A longitudinal analysis. *Psychology & Health*. 2010; 25:433–449. [PubMed: 20397295]
- Thompson SC, Janigian AS. Life schemes: A framework for understanding the search for meaning. *Journal of Social and Clinical Psychology*. 1988; 7:260–280.
- Zika S, Chamberlain K. On the relation between meaning in life and psychological well-being. *British Journal of Psychology*. 1992; 83:133–145. [PubMed: 1559144]

Figure 1.

Path model predicting presence of and search for meaning.

Note: Unless otherwise specified, all paths significant $p < 0.05$; [†] $p < 0.10$. Numbers inside parentheses are standardized path estimates.

Figure 2.

Interaction between presence of meaning and EV predicting search for meaning in life.

Note. The search for meaning, EVs, and presence of meaning were all standardized, prior to analysis.

Table 1

Correlations among relevant variables.

	1	2	3	4	5	6
1. Expectancy violation	–	–0.75**	–0.51**	0.11	–0.47**	0.19*
2. Life satisfaction		–	0.58	–0.17*	0.51**	–0.17*
3. Mood			–	–0.04	0.38*	–0.17*
4. Stage				–	–0.07	0.14+
5. Presence of meaning					–	–0.29*
6. Search for meaning						–

Notes:
+ $p < 0.10$;
* $p < 0.05$;
** $p < 0.01$.