

FINDING MEANING IN MISERY: CAN STRESSFUL SITUATIONS PROVIDE MEANING IN
LIFE?

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Finding Meaning in Misery: Can Stressful Situations Provide Meaning in
Life?

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ABSTRACT

Theory and research investigating the relationship between affective experiences and meaning in life have focused on how positive affect contributes to perceptions of meaning in life. No work has considered how people can attain meaning in life while experiencing negative affect. The present work tested whether affectively negative circumstances can provide meaning in life. Specifically, two studies, using distinct methodologies, tested whether people can attain meaning in life while experiencing the stress associated with goal-pursuit. In Study 1, the salience of stressful college-related goal-pursuit was experimentally heightened and then perceptions of goal-engagement, meaning in life, and positive and negative affect were measured. In Study 2, trait levels of meaning in life and positive and negative affect were assessed. Later in the semester, stress associated with college-related goal-pursuit, perceptions of goal-engagement, meaning in life, and positive and negative affect were measured. In Study 1, the salience of stressful goal-pursuit did not affect these outcomes. In Study 2, when controlling for trait levels of meaning in life and positive and negative affect, regression and mediation analyses showed that college stress predicted increased negative affect; and that college stress predicted increased perceptions of goal engagement, which in turn predicted increased meaning in life and subsequently positive affect.

TABLE OF CONTENTS

ABSTRACT.....	iii
LIST OF TABLES.....	v
LIST OF FIGURES.....	vi
INTRODUCTION.....	1
STUDY 1.....	10
STUDY 2.....	15
GENERAL DISCUSSION.....	21
REFERENCES.....	33

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. The Effect of the Experimental Condition in Study 1.....	14
2. Zero-Order Correlations in Study 2.....	17
3. Regression Analyses Demonstrating the Direct Effects in Study 2.....	18

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Conceptual model outlining the affective profile of attaining meaning in life within unpleasant habitats.....	7
2. Conceptual model outline how meaning is attained during stressful goal-pursuit and the affective profile of this situation.....	9
3. Path model tested in Study 2.....	18

INTRODUCTION

“...the way in which he takes up his cross, gives him ample opportunity-- even under the most difficult circumstances--to add a deeper meaning to his life.” –Viktor E. Frankl, (1946/1992, p. 76)

Perceptions of meaning in life and positive affect are important components of psychological well-being and “the good life” (King, Eells, & Burton, 2004). As such, positive affect and perceptions of meaning in life tend to co-occur (King, Hicks, Krull, & Del Gaiso, 2006). Although researchers believe that this relationship is bidirectional, a significant amount of research has shown that positive affect is a primary contributor to perceptions of meaning in life, and researchers have proposed that situations characterized by positive affect may be the ‘natural habitat’ for feelings of meaning in life (King et al., 2006; King & Hicks, 2009). Certainly, the literature demonstrates that feelings of meaning are found when people are happy or in pleasant moods. However, previous work has not considered how, or if, people can experience meaning in situations characterized by negative affect. Such consideration is important for establishing a more complete understanding of the relationship between affective experiences and perceptions of meaning in life.

In the present work, I propose that while negative affect itself does not typically lead to increased perceptions of meaning for most people, there are indeed situations or ‘habitats’ that are characterized by negative affect that also bolster perceptions of meaning in life. Further, I propose a theoretical model that outlines the overall affective nature of such situations (which includes positive affect as well) and present two studies testing specific hypotheses derived from this model. Specifically, these studies tested whether stressful goal-pursuit contributes to both negative affect and perceptions of meaning in life. Further, they examined the process by which

stressful goal-pursuit leads to meaning, as well as the overall affective profile of meaning derived from stressful goal-pursuit. Before I begin, it is important to first discuss what meaning is, the role it plays in people's lives, and previous research assessing the relationship between affective experiences and meaning in life.

Meaning in Life

Meaning in life has been described in a number of ways by theorists and researchers. Many scholars have noted that meaning in life comes from having a purpose in life, and that it can be attained by working towards and accomplishing important goals (e.g., Frankl, 1946/1992; Ryff & Singer, 1998). Others highlight that meaning in life is feeling that one's self has enduring significance and value in the world (e.g., Baumeister, 1991; Crumbaugh & Maholick, 1964; Sullivan, Kosloff, & Greenberg, in press). Similarly, meaning can be found by understanding and making sense of one's place within a purposeful and predictable world (e.g., Baird, 1985; Becker, 1971; Steger, 2009; Weisskopf-Joelson, 1968). Indeed, scholars have asserted that meaning is found in cultural beliefs about the nature of the world (e.g., Berger & Luckmann, 1967; Greenberg et al., 1990; Vess, in press) and in more basic beliefs that the world is a coherent place that contains predictable and causal relationships (e.g., Baumeister, 1991; Proulx, Heine, & Vohs, 2010). In large part, meaning is construed both in terms of having personal value or purpose (personal meaning) and in terms of the perception that the world is a meaningful place that makes sense (world meaning). The current research concerns personal life experiences (goal-oriented stress) that invoke the self and thus focuses on personal meaning. The assessment of personal meaning relies heavily on participants' intuitive understanding of meaning when answering questions about their perceptions of meaning in their lives (e.g., "I have a good sense of what makes my life meaningful"; Steger, Frazier, Oishi, & Kaler, 2006). Thus, in the present

studies, meaning is conceptualized as a subjective experience and judgment of one's personal worth and purpose in life.

Numerous theoretical perspectives assert that attaining meaning in life is a basic psychological need (e.g., Baumeister, 1991; Becker, 1971; Frankl 1946/1992; Heine, Proulx, & Vohs, 2006; Maddi, 1970; May, 1977; van den Bos, 2009; Williams & Nida, 2011; Wong & Fry, 1998). Some perspectives note that meaning helps manage uncertainty (Kahneman & Tversky, 1982; Kaschak & Maner, 2009; van Den Bos, 2009) and maintain feelings of control (Rutjens, van der Pligt, & van Harreveld, 2010). Others emphasize that humans have an innate need for meaning in order to manage existential threats associated with the awareness of the self. For instance, following many existential thinkers (e.g., Becker, 1971; Kierkegaard, 1843/1941; Rank, 1934), terror management theory (Greenberg, Pyszczynski, & Solomon, 1986) states that people need meaning in order to manage anxiety that would otherwise result from their knowledge of their own death (Routledge & Juhl, 2010; Vess, Routledge, Landau, & Arndt, 2009).

Consistent with the notion that meaning in life is an important psychological need, numerous studies have demonstrated that meaning in life plays a key role in maintaining psychological health and well-being (Chamberlain & Zika, 1988; Low & Molzahn, 2007; Reker, Peacock, & Wong, 1987; Routledge & Juhl, 2010; Steger et al., 2006; Zika & Chamberlain, 1992). For example, lower levels of meaning in life are associated with greater need for therapy (Battista & Almond, 1973), higher suicide risk and substance abuse (Harlow, Newcomb, & Bentler, 1986), and greater levels of anxiety and depression (Debats, van der Lubbe, & Wezeman, 1993; Mascaro & Rosen, 2005). Conversely, higher levels of meaning in life are associated with hope (Feldman & Snyder, 2005; Mascaro & Rosen, 2005), life satisfaction, self-esteem, optimism, and well-being (Steger & Frazier, 2005). Furthermore, among numerous other

variables, meaning in life has been shown to be the most consistent predictor of psychological well-being (Zika & Chamberlain, 1987).

Experiencing Positive Affect and Meaning in Life

Given that meaning is an important psychological need which plays a central role in the maintenance of psychological well-being, it is not surprising that having meaning in life is related to experiencing positive feelings. The relationship between positive affect and meaning in life is bidirectional. To begin, previous work suggests that people experience positive affect when psychological needs, such as the need for meaning in life, are fulfilled (King et al., 2004; Reker & Wong, 1988; Ryan & Deci, 2001; Telfer, 1980; Waterman, 2007) and when they engage in activities that they perceive as meaningful (Hicks & King, 2009a; Ryan & Deci, 2000, 2001). However, the bulk of the empirical work on the relationship between affect and meaning in life focuses on positive affect as a contributor to the perception of meaning in life. First, people often list happiness as a main component of their life that makes it meaningful (Ebersole, 1998; see also Lambert et al., 2010). Additionally, research has shown that priming positive mood concepts and inducing positive affect bolsters perceptions of meaning in life (Hicks & King, 2009b; King et al., 2006). Positive affect has also been shown to predict feelings of meaning above and beyond other important sources of meaning (e.g., goal progression—King et al., 2006; religious faith—Hicks & King, 2008).

Further research has shown that because positive affect and meaning are so closely linked, positive affect can directly be used as information that one's life is meaningful. For example, studies have shown that when other sources of meaning (e.g., relationships, religious beliefs) are not experimentally salient, a person's positive affect is predictive of how meaningful s/he sees life (Hicks & King, 2007, 2009b). In other words, when other sources of meaning are

not available, or at least not cognitively accessible, people use their current level of positive affect as an indicator of meaning in life.

Given the central role that positive affect plays in contributing to the experience of meaning in life, King and colleagues (2006; King & Hicks, 2009) proposed that positive affect is the ‘natural habitat’ in which people have perceptions of meaningful in life, and this is the prominent view of the relationship between affective experiences and meaning. This may certainly be true; the research just reviewed unequivocally shows that people see life as meaningful when they are in pleasant moods. However, theory and research has yet to consider how situations characterized by negative affect may positively contribute to the sense of meaning in life.

Can Meaning be Found in an Affectively Unpleasant Habitat?

The theoretical and empirical work concerning the basic relationship between negative affect and meaning in life is sparse. Some studies in which both negative affect and meaning in life have been measured have shown that these variables are negatively correlated (e.g., King et al., 2006; Liu & Gan, 2010; Schlegel, Hicks, Arndt, & King, 2009). Other studies, however, have shown that this relationship vanishes when other relevant variables, such as positive affect and self-esteem, are also accounted for as predictors of meaning in life (Schlegel, Hicks, King, & Arndt, 2011). Collectively, these studies suggest that the possible relationship between negative affect and meaning may be complex. It is also noteworthy that the relationship between negative affect and meaning was not the central theoretical focus of any of these empirical reports.

Research suggests that the relationship that is sometimes found between negative affect and meaning may be because negative affect results when the need for meaning in life is unfulfilled (e.g., Maddi, 1970; Pan, Wong, Joubert, & Chan, 2007). For instance, threatening sources of

meaning, such as feelings of social connectedness, increase negative affect (Besser & Priel, 2011; for a review, see Blackhart, Nelson, Knowles, & Baumeister, 2009).

On the whole, there are only a handful of studies showing that meaning in life and negative affect are negatively related; and there is some evidence to suggest that this relationship, when observed, results from low levels of meaning leading to negative affect rather than negative affect leading to low levels of meaning. If anything, this research collectively suggests that 1) negative affect and perceptions of meaning in life do not reliably co-occur, 2) negative affect itself does not directly contribute to perceptions of meaning in life (although I will return to this idea in the General Discussion), and 3) people experience negative affect as a result of low perceptions of meaning in life. Although heightened negative affect and elevated meaning in life do not typically co-occur (point 1 above), there may be important circumstances in which they are experienced simultaneously. Likewise, although negative affect itself may not lead to increased meaning (point 2), there may be important situations that are characterized by negative affect that can also lead to meaning. Thus, given the empirical evidence to date, it is possible that there are situations that are characterized by negative affect that can simultaneously increase perceptions of meaning in life.

I propose that it is quite plausible that affectively negative habitats also provide perceptions of meaning in life. For example, engaging in goal-oriented behavior provides meaning (e.g., Griffith & Graham, 2004; Klinger, 1977; Little, 1998), however, goal-pursuit can be unpleasant and is often stressful. Similarly, passion for social causes and beliefs may simultaneously induce unpleasant feelings (anger) and perceptions of meaning in life. For example, protesters are typically frustrated; however, protesting can help people feel that they are part of a purposeful cause (Klandermans, 2003). And as a final illustration, when people are

annoyed with other people, those who are annoyed are often making a judgment of the person who is annoying them. Being in this position to make an evaluative judgment of someone else can foster a sense of superiority and bolster feelings of personal significance and value (Amabile & Glazebrook, 1982).

In such affectively negative, but meaning-providing, habitats I propose that it is not the negative affect itself that leads to increased perceptions of meaning. Rather, it is other characteristics of the situations (e.g., goal-pursuit) that make people feel that life is meaningful. Thus, in affectively negative meaning-providing situations, the increased perceptions of meaning should be independent of the increased feelings of negative affect.

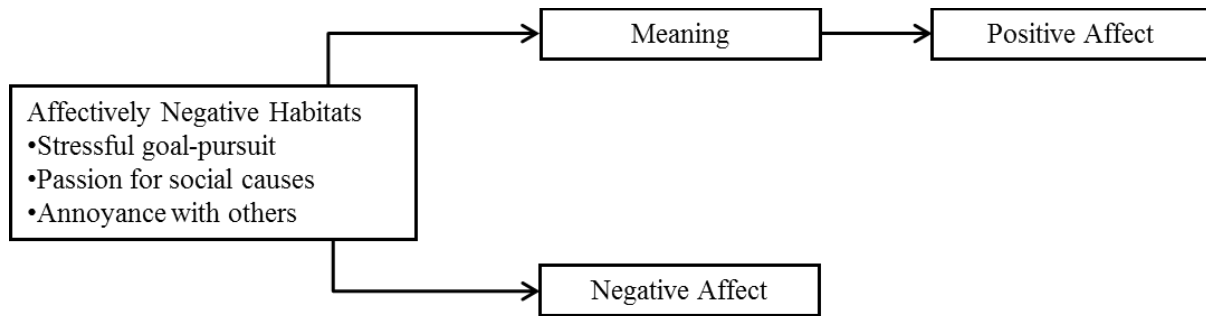


Figure 1. Conceptual model outlining the affective profile of attaining meaning in life within unpleasant habitats.

Additionally, I propose that when people attain meaning in life from affectively negative situations, they also experience increased positive affect (see Figure 1). As previously mentioned, people experience positive affect when the need for meaning in life is fulfilled (King et al., 2004; Reker & Wong, 1988; Ryan & Deci, 2001; Telfer, 1980; Waterman, 2007) and when they are engaged in meaningful activities (Hicks & King, 2009a; Ryan & Deci, 2000, 2001). I believe this will likely hold true even when meaning is attained from affectively negative

situations. Thus, attaining meaning in life from situations that are characterized by negative affect should ultimately result in a mixed emotional profile. That is, people will feel both positive and negative affect. Critically, however, while the heightened negative affect is independent of the heightened levels of meaning in life, the increased positive affect is due to the increased meaning in life.

Stressful, but meaningful, goal-pursuit

The current research aims to provide an initial test of this model, by focusing on stressful goal-pursuit. As briefly mentioned above, engaging in goal-directed behavior is a good example of a circumstance that, although affectively unpleasant, may provide a sense of meaning in life. To begin, the pursuit of goals is often stressful and unpleasant (Cantor et al., 1987; Nurmi, Salmela-Aro, Aunola, 2009). Many career goals, for example, require that people endure a grueling training process. Academics and professionals, for instance, go through emotionally taxing educational programs. Earning degrees involves tests, papers, projects, and deadlines; all of these can provoke anxiety and distress, and often leave people fatigued as they scrape to find time to sleep. Athletes, as another illustration, similarly put themselves through physically and mentally painful training camps and workouts in order to achieve their goals.

Although goal-pursuit is stressful, goals are common sources of purpose and meaning in life (Griffith & Graham, 2004). Not only does achieving goals provide a sense of meaning in life (Battista & Almond, 1973; Griffith & Graham, 2004), but simply engaging in goal-oriented behavior reminds people that their life is purposeful (Griffith & Graham, 2004; Klinger, 1977; Little, 1998; Ryff & Singer, 1998; Steger, Kashdan, & Oishi, 2008). In sum, stressful goal-pursuit is unpleasant, but it provides feelings that one's self is engaged in goal-oriented behavior and thus provides a sense of meaning in life.

In accordance with the model outlined above, it is not the negative aspects of stressful goal-pursuit that provide meaning in life (see Figure 2). Rather, it is the perception of being engaged in goal-oriented behavior that provides meaning in life. Thus, the sense of this engagement is the means by which a stressful habitat can provide meaning. Further, I propose that positive affect will be experienced when the need for meaning is fulfilled, even when fulfilled in a stressful circumstance.

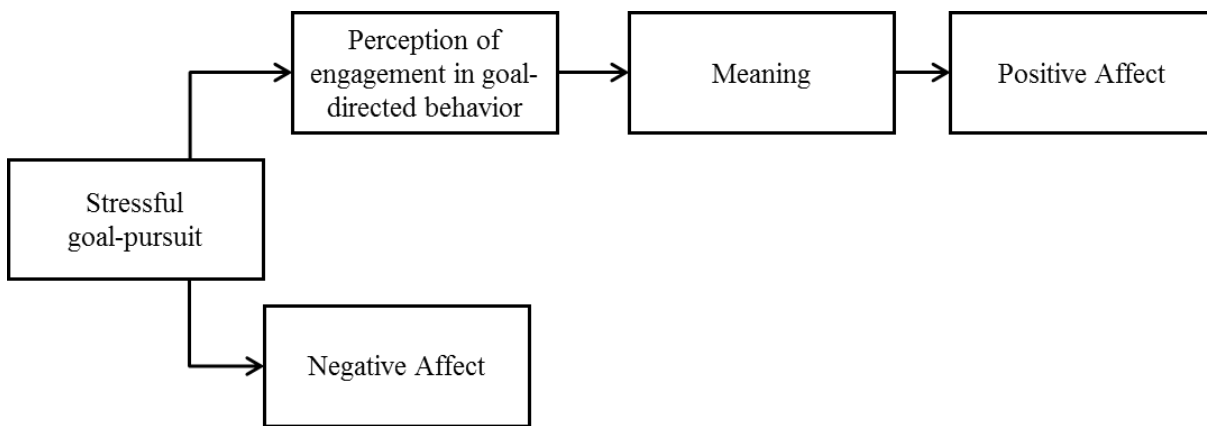


Figure 2. Conceptual model outline how meaning is attained during stressful goal-pursuit and the affective profile of this situation.

I conducted two studies to test these assertions. Specifically, I tested (1) if college-related stress is indeed unpleasant, (2) if college-related stress, due to perceptions of engagement in goal-directed behavior (and not negative affect), provides meaning, and (3) if this meaning subsequently provides positive affect and thus results in a mixed emotional profile.

STUDY 1

In order to test the proposed model in Study 1, I manipulated the salience of the stressful thoughts and feelings associated with goal-oriented activities of college students. Specifically, college students were randomly assigned to an experimental condition in which they thought and wrote about all the stress they experience as busy students trying to manage all their activities directed towards reaching their personal goals. Those in the control condition simply wrote about the activities in which they are engaged in as a college student. Next, participants completed measures that assessed 1) positive affect, 2) negative affect, 3) perceptions of their engagement in goal-oriented behavior (goal engagement), and 4) perceptions of meaning in life.

I predicted that compared to the control condition, the experimental condition would increase goal engagement, which in turn would increase meaning in life, which would subsequently lead to positive affect (see Figure 2). Further, I predicted that the experimental condition would also increase negative affect, but that this increase would be independent of increased meaning in life.

Method

Participants

One hundred and thirty-three (49 females; 83 males 1 unknown; 85% white) Psychology students at North Dakota State University (NDSU) participated in exchange for course credit. College students were specifically targeted for this study because they are typically trying to balance a number of goal-oriented activities, particularly those associated with career and social goals.

Procedure

Participants were run in groups up to six. Upon arrival of all participants to the lab, an experimenter informed the participants that they are going to participate in a study that assesses the relationship between attitudes about college and other general thoughts and feelings. The experimenter then told the participants that they will first complete a writing task that assesses their attitudes about college, and then complete a number of other questions that assess other thoughts and feelings they have. Next, the experimenter ushered the participants into a room with private cubicles. After each participant signed an informed consent, she administered the writing task. After ten minutes, she administered a second pack of questionnaires to the participants that included all of the other measures.

Materials

Experimental manipulation. The writing task served as the experimental manipulation. Participants were randomly assigned to the experimental condition or the control condition. In both conditions participants were told that they would spend 10 minutes on this task and that they should keep working on it until the experimenter comes back to get them started on the second portion of the study.

The purpose of the experimental condition was to make salient the stress that participants experience as they are busy trying to achieve their personal goals. Participants in this condition were given a sheet of paper with two columns. They were instructed to think about and list all of the goals that are personally important to them as a college student in the left hand column. After this they were instructed to write down all the activities that they do to try to achieve those goals. This part of the writing task was designed to get participants thinking about their goals and all the activities they engage in to try to achieve these goals. On the next page, participants

responded to the following three prompts separately: “Write about what it is like for you to try and balance all the important activities that you listed on the previous page,” “Write a couple sentences about the stress you feel as you try to balance all these activities,” and “Write about how important it is for you to take on the difficult task of balancing these activities as you work toward these goals.”

The purpose of the control condition was to simply serve as a baseline to compare against the experimental condition. However, to be consistent with the cover story, participants in this condition were similarly asked to write about the activities in which they are engaged in as college students. However, they were not explicitly asked to mention goals or instructed to immerse themselves in their feelings associated with these activities. Participants in this condition were given a sheet of paper with one column. They were instructed to think about and list the activities they do during a typical day in college. On the next page, participants responded to the following three prompts separately: “On the lines below, write about how you get to class from your residence. Give as many details as you can, including the route you take and how long it takes to get to class,” “Write about what you typically do for lunch. Make sure to include details of when and where you typically eat lunch, and what you typically eat for lunch,” and “Give the details of what you do in a typical weekday evening.”

Affect. Participants completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Specifically, participants indicated the extent to which each of 10 positive affect words (e.g., “excited”) and 10 negative affect words (e.g., “upset”) reflected how they currently felt (1 = *very slightly*; 5 = *extremely*). Items within the positive affect ($\alpha = .88$, $M = 2.94$, $SD = .73$) and negative affect ($\alpha = .86$, $M = 1.59$, $SD = .67$) subscales formed reliable indices and were averaged to produce positive affect and negative affect scores.

Goal engagement. Participants completed a 4-item measure designed to assess their perceptions of the extent to which they are engaged in goal-relevant behaviors. Specifically, they indicated the extent to which they agreed with statements such as “I am actively engaged in activities to help fulfill my personal goals,” and “I feel like I am pursuing my goals in life,” on a 6 point scale (1 = *strongly disagree*; 6= *strongly disagree*). These items formed a reliable index and were thus averaged to produce perceptions of goal engagement scores ($\alpha = .89$, $M = 4.67$, $SD = .94$).

Meaning in life. Participants completed the five item Presence of Meaning in Life subscale of Steger et al.’s (2006) Meaning in Life Questionnaire. Participants indicated the extent to which statements such as “I understand my life’s meaning” and “I have a good sense of what makes my life meaningful” are true on a 7 point scale (1 = *Absolutely Untrue*; 7 = *Absolutely True*). After one item was reverse scored, the items formed a reliable index and were thus averaged to produce perceptions of meaning in life scores ($\alpha = .90$, $M = 5.02$, $SD = 1.27$).

Results and Discussion

In order to test my predictions, I ran separate analyses of variances (ANOVAs) on each negative affect, positive affect, goal engagement, and meaning in life. There was no significant differences between the experimental and control condition on any of these variables (see Table 1). Because these effects were not significant, no mediational analyses were run to test the direct and indirect effects in the proposed model.

Study 1 found no evidence showing that stressful situations, though unpleasant, can provide meaning. There are a number of potential reasons or combination of reasons why my predictions were not supported in this study. To begin, the experimental condition used in the current study may simply not have been powerful enough to influence participants’ current

psychological states. This is perhaps evidenced by the fact that the manipulation did not even have an effect on negative affect. Regardless of whether stressful goal-pursuit does provide meaning, if the experimental condition appropriately elicited stress, then it also should have elicited negative affect. Though, this did not happen. Relatedly, the manipulation may not have sufficiently engaged the participants. Although they were told to keep working on the writing task until the experimenter came to get them started on the second portion of the study, the experimenter noted that many of the participants did not spend the entire ten minutes on the task. Finally, another reason why my predictions may not have been supported could simply be because people cannot actually attain meaning in life while they are stressed as they pursue goals. However, the null effects in this study cannot provide conclusive evidence for this. Furthermore, these results do not rule out the possibility that naturally occurring stress associated with goal-pursuit can be unpleasant, yet contribute to perceptions of meaning in life. Study 2 addressed this possibility.

Table 1
The Effect of the Experimental Condition in Study 1

Dependent Variable	Condition		<i>F</i>	<i>p</i>
	Experimental <i>M (SD)</i>	Control <i>M (SD)</i>		
Positive Affect	2.96(0.73)	2.99(0.78)	0.04	.84
Negative Affect	1.64(0.67)	1.54(0.56)	0.78	.38
Goal Engagement	4.71(0.90)	4.62(0.98)	0.33	.56
Meaning in Life	4.96(1.28)	5.08(1.27)	0.29	.59

Note. Depend variables were not on the same scale

STUDY 2

To test whether naturally occurring stress contributes to meaning, despite being unpleasant, I measured naturally occurring stress associated with the goal-oriented endeavor of going to college. Specifically, I tested whether college students' current feelings regarding the stress they experience in college contributes to their current feelings of meaning in life and positive and negative affect beyond their trait levels of meaning in life, positive affect, and negative affect. Thus, at Time 1, I assessed participants' trait levels of meaning in life and positive and negative affect. Then at a later date (Time 2), I assessed participants' current feelings regarding the stress they experience in college, as well as their current perceptions of meaning in life, positive affect, and negative affect. I also measured participants' current perceptions of their engagement in goal-oriented behavior to test the assertion that it is this aspect of stressful goal-pursuit that provides meaning in life.

I hypothesized that college stress would predict increased goal-engagement, which in turn would predict increased meaning in life, which would subsequently predict increased positive affect (see Figure 2). I also hypothesized that college stress would predict increased negative affect, but that this effect will be independent of the effect of college stress on increased meaning in life. Finally, I predicted that these effects would occur while controlling for trait levels of meaning in life and positive and negative affect, thus demonstrating that students' current college stress contributes to current affect and meaning above and beyond trait levels of affect and meaning.

Method

Participants and procedure

Most students in the Department of Psychology participant pool completed an online survey ($N > 1000$) that assessed trait levels of meaning in life as well as trait levels of positive and negative affect. Completing this survey (Time 1) made students eligible to participate in a subsequent online study. Two hundred and three students participated in this Time 2 study. At Time 2, participants completed scales assessing their current perceptions of stress associated with college and perceptions of their engagement in goal-oriented behavior. Additionally, participants completed state versions of the same meaning in life, and positive and negative affect scales completed at Time 1. All the below descriptive statistics and analyses are from these 203 students (95 females; 108 males; 94% white) who participated in both Time 1 and Time 2 studies. At both Time 1 and Time 2, all students participated in exchange for course credit.

Materials

Time 1. Participants' completed the same positive affect ($\alpha = .85$, $M = 3.60$, $SD = .57$), negative affect ($\alpha = .85$, $M = 2.11$, $SD = .61$), and meaning in life ($\alpha = .91$, $M = 4.73$, $SD = 1.20$) scales used in Study 1. However, because we were interested in assessing trait levels of affect and meaning, the instructions of the scales at Time 1 specifically asked participants to respond based on how they typically feel, as opposed to how they currently feel.

Time 2. Participants completed a measure that assessed current feelings about how stressful college is. Specifically, they used a seven point scale to indicate their answers to the following questions: "Overall, how stressful is college?" (1= *not at all stressful*; 7= *very stressful*), and "Overall, how much stress would you say you experience as a result of being in college?" (1 = *none at all*; 7 = *a lot*). Participants were instructed to answer based on their

current feelings. These 2 items were strongly correlated ($r = .74, p < .001$) and were thus averaged to produce college stress scores ($M = 5.31, SD = 1.09$).

Participants' completed the same goal engagement ($\alpha = .86, M = 4.59, SD = .92$), meaning in life ($\alpha = .91, M = 4.88, SD = 1.26$), positive affect ($\alpha = .90, M = 3.05, SD = .79$), and negative affect ($\alpha = .89, M = 1.98, SD = .72$) scales used in Study 1. Again, on these measures, they were instructed to answer based on their current feelings.

Results and Discussion

To test my predictions, I conducted four regression analyses and a mediational analysis using the macro PROCESS for SPSS (Hayes, 2012). Because I predicted that current college stress contributed to participants' current perceptions of meaning in life and positive and negative affect above and beyond trait levels, I controlled for Time 1 variables in all the below analyses. However, when I did not control for Time 1, the results for the entire model did not differ. Figure 3 displays the model that was tested with the regression analyses, and Table 3 provides the coefficients and their significance test for each path (see Table 2 for zero-order correlations).

Table 2
Zero-Order Correlations in Study 2

	1	2	3	4	5	6	7	8
1 T1 Positive Affect	—							
2 T1 Negative Affect	-.23**	—						
3 T1 Meaning	.51**	-.34**	—					
4 T2 College Stress	-.11	.10	-.17*	—				
5 T2 Positive Affect	.47**	-.03	.26**	-.11	—			
6 T2 Negative Affect	-.21**	.53**	-.31**	.24**	.05	—		
7 T2 Goal Engagement	.36**	-.24**	.37**	.09	.17*	-.38**	—	
8 T2 Meaning in Life	.42**	-.25**	.72**	-.05	.29**	-.30**	.47**	—

Note. T1 = Time 1; T2 = Time 2; * $p < .05$. ** $p < .01$.

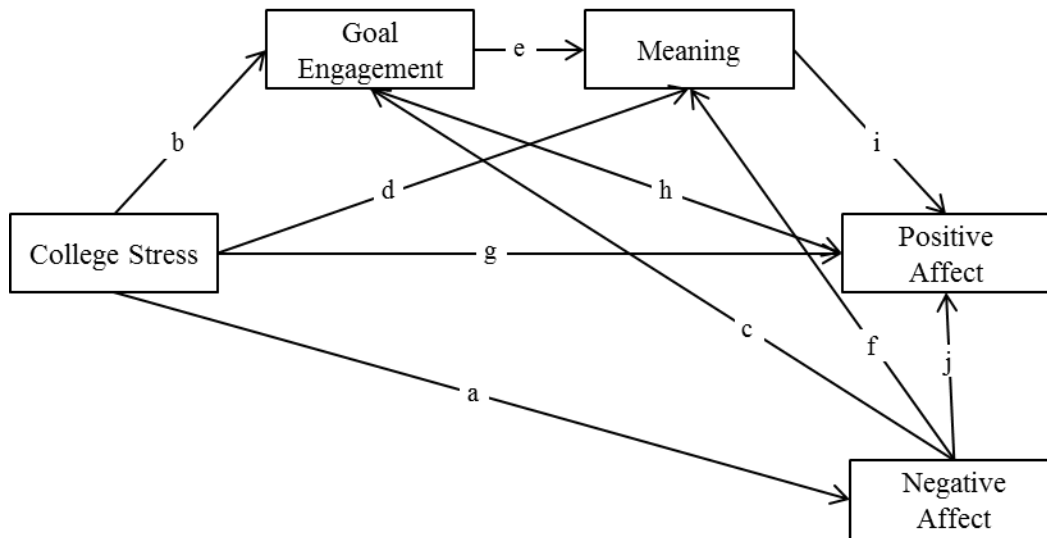


Figure 3. Path model tested in Study 2.

Table 3
Regression Analyses Demonstrating the Direct Effects in Study 2

Dependent variable	Predictor(s)	path	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
1 Negative Affect	College Stress	a	0.11	0.04	2.85	<.01
2 Goal Engagement	College Stress	b	0.18	0.05	3.57	<.01
	Negative Affect	c	-0.44	0.09	-4.68	<.01
3 Meaning in Life	College Stress	d	0.05	0.06	0.93	.35
	Goal Engagement	e	0.30	0.08	3.97	<.01
	Negative Affect	f	-0.09	0.10	-0.84	.40
4 Positive Affect	College Stress	g	-0.09	0.05	-1.94	.05
	Goal Engagement	h	0.04	0.06	0.56	.57
	Meaning in Life	i	0.13	0.06	2.27	.02
	Negative Affect	j	0.24	0.09	2.83	.05

Note. Analyses were run controlling for Time 1 variables

In the first regression analysis (path a), college stress, not surprisingly, positively predicted negative affect. This demonstrated that college stress is indeed unpleasant. In the second, third, and fourth regression analyses respectively, college stress positively predicted goal engagement (path b), which in turn positively predicted meaning in life (path e), which in turn positively predicted positive affect. This is consistent with my prediction that college stress contributes to meaning in life by increasing perceptions of engagement in goal-oriented behavior, and that when people's need for meaning in life is met, they experience positive affect. Although the direct effects from college stress to meaning in life (path d; third regression) and from goal engagement to positive affect (path h; fourth regression) were not significant, it is not necessary for indirect effects to occur for there to be a presence of an indirect effect (Collins, Graham, & Flaherty, 1998; Judd & Kenny, 1981; Kenny, Kashy, & Bolger, 1998; MacKinnon, 1994, 2000; MacKinnon, Krull, & Lockwood, 2000; Shrout & Bolger, 2002). And indeed, the bootstrap analyses (5000 resamples) indicated that the indirect effect of college stress on positive affect serially through goal engagement and then meaning in life was significant, $M_{indirect} = .0074$, $SE = .006$, 95% CI = [.0008 / .03].

Additionally, these analyses supported the assertions that the effect of college stress on meaning, through goal engagement, is independent of the effect of college stress on increased negative affect. First, in the model, negative affect and meaning in life were not related. Moreover, testing the indirect effects of college stress on meaning in life through both negative affect and goal engagement demonstrated that goal engagement was a significant mediator $M_{indirect} = .04$, $SE = .03$, 95% CI = [.006, .10], while negative affect was not, $M_{indirect} = -.0095$, $SE = .01$, 95% CI = [-.04, .01].

These analyses also supported the assertion that high college stress ultimately contributes to feeling mixed emotions. First, it is worth noting that the direct effect of college stress on positive affect was negative. That is, the more stress people have about college the less positive affect they experience. However, the indirect direct effect through goal engagement and meaning in life was positive. In short, college stress predicted positive affect both negatively (direct effect) and positively (through goal engagement and meaning in life). As previously noted college stress positively predicted negative affect, thus it positively predicted both positive affect and negative affect in this model. Additionally, positive and negative affect are positively associated with one another in this model. Taken together, this suggests that when people experience high levels of college-related stress, they also experience both high levels of positive and negative affect.

Finally, I ran supplementary analyses to provide further support that college stress leads to meaning in life via increased perceptions of goal engagement and that positive affect is experienced as a result of perceived meaning in life. First, as previously discussed, research has demonstrated that positive affect can contribute to perceptions of meaning; thus, it is plausible that in the current study positive affect led to meaning in life rather than resulting from having the need for meaning in life being met. However, when I switched meaning in life and positive affect around in the analysis, the serial indirect effect was not significant, $M_{indirect} = .003$, $SE = .004$, 95% CI = [-.001, .01]. Furthermore, I ran analyses testing all other possible orders of the mediating/outcome variables (goal engagement, meaning, positive affect), and in none of these analyses was the indirect path through both mediators significant (all 95% CIs contained zero). In sum, the serial mediation analysis was only significant when the variables were entered in the sequence as proposed.

GENERAL DISCUSSION

The current work was designed to test the broader assertion that meaning in life is not exclusively found within affectively pleasant habitats (King et al., 2006; King & Hicks, 2009). These studies specifically assessed this within the context of engaging in goal-oriented behavior that can produce stress. Using college students, Study 1 tested this assertion by making salient the stress associated with the goal-oriented behavior of going to college. This experimental manipulation did not significantly affect participants' affective state or their perception of meaning in life. Thus, Study 1 failed to find evidence that stressful goal-pursuit is both unpleasant, yet meaning-providing. As discussed, there may be a number of reasons for these null findings. Regardless, the study did not rule out the possibility that the stress college students feel naturally (instead of stress manipulated in the laboratory) may contribute, not only to negative affect, but also to meaning in life. Study 2 found evidence consistent with this proposal. First, the stress that participants' currently felt contributed to their current levels of negative affect, demonstrating that the stress students feel associated with college is unpleasant. Despite being unpleasant, college-related stress contributed positively to participants' perceptions of meaning in life because it was associated with perceptions of engaging in goal-oriented behavior. Meaning in life in turned contributed to participants' level of positive affect. This latter finding is congruent with the assertion that when the need for meaning in life is met, people experience positive affect.

Future Directions

The present work provides the first critical piece of evidence that meaning can be found in unpleasant habitats, and that even when the need for meaning is attained in such unpleasant situations, positive affect results. However, the current work is not without limitations. First, we

found no experimental evidence that the salience of stressful goal-pursuit provides meaning. As discussed at the conclusion of Study 1, there are a number of possible reasons for this and future experimental research is certainly warranted. Additionally, the current work only demonstrates one habitat, stressful goal-pursuit, in which meaning can be derived. Much more work is necessary in order to support the broader assertion that meaning in life can be provided by affectively negative situations. It is necessary for future research to expand upon the present work and assess whether this is a robust phenomenon or isolated to this particular habitat. For example, can some situations in which people are angry and frustrated or annoyed and irritated contribute to perceptions of meaning in life?

Anger and frustration

There may be some situations characterized by anger or frustration that bolster perceptions of meaning in life. One prominent circumstance in which people are angry and frustrated is when they are speaking out for their important beliefs or a meaningful cause. Within the past few years, the media has shown furious protesters occupying Wall Street and attending Tea Party rallies in the United States. In Egypt and Syria people have been infuriated as they fight for basic rights. However, in these situations, anger is largely a byproduct of the passion people have for meaningful causes and personally important beliefs. Research does suggest that protesters do perceive themselves to be a part of a purposeful cause that will make a significant and positive difference in the world (Klandermans, 2003), and people tend to attach social causes into their identity (Reger, Myers, & Einwohner, 2008). Such attachments can help people feel as if their lives are more significant and enduring (e.g., Castano, Yzerbyt, & Paladino, 2004; Fromm, 1947; Lifton, 1968, 1979/1983). Together, this suggests that expressing one's passion for personally valued beliefs or causes provides a place for meaning to co-occur with anger.

Similarly, but to a lesser extent, engaging in frustrating arguments with others may provide a place where perceptions of meaning in life thrive. Arguments are frustrating, but many are centered around people's personally valued beliefs. Such arguments make salient deeply held values and strengthen them as well. Political arguments or debates provide a good example. It can certainly be frustrating to watch or participate in political debates; but they give people the opportunity to reflect (with biases) on their personal values. Consistent with this, research demonstrates that debates do provoke anger (e.g., Holbert, Hansen, Caplan, & Mortensen, 2007), but that they can also strengthen personal beliefs due to biased information processing (Meffert, Chung, Joiner, Waks, & Garst, 2006; see also McHoskey, 1995; Taber & Lodge, 2006). On a broader level, recent evidence has shown that those who characterize themselves as someone who argues a lot have higher levels of meaning in life than those who do not (Baumeister et al., in press). On the whole, future research is warranted to explore whether meaning can be found in such anger provoking and frustrating situations.

Annoyance and irritation

Another habitat that may provide meaning, yet is unpleasant, is experiencing annoyance with others. The experience of annoyance is unpleasant. When a person is annoyed with another, the annoyed person is often making a negative judgment of the person who is annoying her or him. Being in this position to make an evaluative judgment of somebody else may foster a sense of superiority and bolster feelings of personal significance and value. Similarly, people are not typically in a happy mood when they are extremely critical of others. However, giving criticism, and being in a position to do so, likely promotes feelings of competence and personal importance (Amabile & Glazebrook, 1982; Taylor & Lobel, 1989; Wills, 1981), which may in turn bolster a sense of personal worth and meaning. Again, however, it is a question for future research to

explore whether annoyance is another affectively negative situation in which meaning can be derived.

Similar to the current research, in the anger provoking and annoying situations just discussed, it is not the negative feeling of anger or annoyance that provides meaning. Rather, I propose it is other characteristics of the situation (e.g., feeling superior, confirming beliefs). However, it may also be worthwhile for future research to explore whether negative affect itself directly provides meaning.

Does negative affect itself ever directly lead to meaning in life?

The research that illuminates the relationship between positive affect and meaning demonstrates that positive affect itself can directly lead to increased meaning in life (Hicks & King, 2007, 2009b; King et al., 2006). The current analysis and model that I have proposed asserts that it is not negative affect that provides a sense of meaning in life. Instead it is the habitat in which that negative affect is aroused. However, is it possible that negative affect may directly increase feelings of meaning in life for some individuals? Although extant theory and research on the relationship between affect and meaning strongly suggests that it is unlikely that negative affect would directly bolster meaning, there may be reasons to speculate that for a few people, meaning may be inspired directly by the experience of negative emotions. There are at least two ways in which certain individuals may get meaning in life directly from negative affect.

First, people who have endured a relatively high number of negative life events may be able to attain meaning in life directly from negative affect itself. King and Hicks (2009) suggested that people are able to detect meaning in situations and events that are congruent with their important beliefs. However, negative life events often threaten people's beliefs and force them to reconstruct their view of the self and the world in order to incorporate information

learned from negative events. This process, especially when repeated, can lead to a more complex but stable belief system which can detect meaning in numerous life situations, even in negative ones. Thus, for people who have experienced numerous negative life events in the past, experiencing a negative life event in the present is more likely to be congruent with their overall belief system and thus may bolster perceptions of meaning. Future research should directly assess whether the number of negative life events people have experienced predicts their capacity to attain meaning in life when feeling negative affect.

Second, under the social influence of one's broader cultural or sub-cultural groups, people may come to place value on negative affect and actually see it as a contingency of self-worth. For example, some religious traditions emphasize the importance of suffering in the pursuit of piety or spiritual transcendence (Hick, 1966). In Matthew 10:38 Jesus stated, "And whoever does not take his cross and follow me is not worthy of me". This exemplifies the notion that negative affect associated with sacrificing one's life comforts and the willingness to put oneself at risk of public ridicule, torture, and even death may inspire a sense of meaning. Perhaps those who subscribe to these types of cultural beliefs find the negative affect associated with personal sacrifice to be diagnostic of how meaningful their lives are. In fact, historically, many religions (e.g., Islam, Christianity, Buddhism, Hinduism) have advocated different forms of self-sacrifice (fasting, passive non-resistance, self-immolation, martyrdom) that are meant to be physically and emotionally unpleasant, but indicative of compliance with existential meaning-providing belief systems (e.g., Hick, 1966). Indeed, research has observed that in response to an existential threat, people report an increased willingness to make personal sacrifices for meaning-providing identities (e.g., their nation; Routledge & Arndt, 2008).

Moreover, people who come to internalize such types of beliefs may develop a close association between negative affective states and meaning in life. For such people, anxiety and distress may become direct indicators that they are doing something significant with their lives and thus these negative affective states may provide information that their lives are meaningful. Stated differently, struggling for *something* or *anything* may offer these people with a sign that life is purposeful and meaningful.

Regardless of the reason why people might be capable of attaining meaning directly from negative affect (i.e., experiencing numerous negative life events or subscribing to certain cultural beliefs), future research should develop methods that can assess people's capacity to attain meaning directly from negative affect. For example, do some people endorse statements such as "When I am sad, it means that something significant has happened", "Experiencing negative moods indicates that I am doing something important", and "It is important to feel negative emotions in life"? Can the endorsement of these statements be predicted by those who have experienced numerous negative life events or those who hold specific cultural beliefs? Does the endorsement of these statements predict people's ability to derive meaning in life when simply experiencing negative moods?

Choosing to be in unpleasant situations

The current research provided initial evidence that people can attain meaning in affectively negative situations. Beyond this, however, I believe that people may actually choose to be in situations characterized by negative affect in order to meet the need for meaning in life. As reviewed earlier, meaning in life is a basic psychological need, and making sure this need is fulfilled is important for psychological well-being. Thus, in pursuit of meaning in life, it is possible that people willingly place themselves in unpleasant situations if those situations can

also bolster meaning in life. In order to test this, future research should manipulate people's need for meaning in life, perhaps by threatening sources of meaning, and then assessing the extent to which people are willing to place themselves in situations that are unpleasant but meaning-providing. At least one study to date is consistent with this proposal. Specifically, Routledge and Arndt (2008), as previously mentioned, observed that an existential threat (i.e., a reminder of mortality) increased participants' willingness to make personal sacrifices for a meaning-providing cultural identity.

Theoretical Refinements and Integrations

While setting the stage for future work to explore more completely how and when meaning can be derived in unpleasant situations, the present research also sets the stage for a more complete understanding of the affective nature of meaning in life, and perhaps sheds some light on how people are able to experience mixed emotions.

The affective nature of the meaningful and good life

As stated at the onset, positive affect and meaning in life are two important components of the psychological healthy and good life (King et al., 2004; King et al., 2006). And research clearly shows that psychologically healthy people tend to have both happiness and perceptions that life is meaningful. Study 2 of the present work is consistent with this, showing that even when people attain meaning in situations that are unpleasant, positive affect results. It is important to note, however, that just because positive feelings may be the end result in this model, does not mean that it is the end psychological goal. In the current model, meaning in life is considered to be the more key psychological end. As reviewed earlier, numerous theories emphasize that the need for meaning in life is a fundamental psychological need and research has demonstrated its centrality in maintaining psychological well-being. According to the current

perspective, positive affect is simply a byproduct of having this important psychological need fulfilled. Consistent with this perspective, the current work demonstrated that increased positive affect is only predicted via goal engagement and meaning in life; when meaning in life and positive affect are switched in the model, the indirect effect is no longer significant.

Additionally, consistent with the current perspective that positive affect is not the end psychological goal, recent research has demonstrated that when positive affect is an important psychological end, people do not actually experience happiness as an end result (Mauss, Tamir, Anderson, & Savino, 2011). Specifically, this research showed that when participants were induced to value happiness as an end psychological goal, they ironically experienced lower levels of happiness when placed in a happy situation. Thus, the fact that psychologically healthy people are happier may largely be due to the fact that they have fulfilled their need for meaning in life and not because they valued positive affect as a psychological end.

Mixed emotions and meaning

The present analyses may also help explain why it is possible for people to experience a mixture of both positive and negative emotions simultaneously. A number of studies have shown that it is possible for people to experience mixed emotions in a variety of situations. For example, college graduation and other meaningful endings (Ersner-Hershfield, Mikels, Sullivan, & Carstensen, 2008), wedding planning (Otnes, Lowrey, & Shrum 1997), shedding long-held possessions (Price, Arnould, & Curasi, 2000), and watching bittersweet films (*Life is Beautiful*; Larsen, McGraw, & Cacioppo, 2001; Larsen & McGraw, 2011) can all arouse positive and negative feelings.

One notable aspect of this literature is that the work has primarily been devoted to demonstrating that it is possible that positive and negative affect can occur at the same time. No

work has been done to understand *how* it is possible that people can experience mixed emotions. In other words, are there any psychological processes that account for the effects of the above situations (e.g., watching bitter sweet films) on feeling both positive and negative affect simultaneously? The present work suggests that one reason why positive and negative affect can be experienced simultaneously is because some situations characterized by negative affect also provide meaning; and because they provide meaning, people feel positive affect in addition to the negative affect that is inherent in the situation. Supporting this, in Study 2 college stress positively predicted negative affect and, via goal engagement and meaning in life, positively predicted positive affect. Additionally, positive and negative affect were positively correlated with each other. This demonstrates that high levels of college stress are associated with a mix of both high negative affect and high positive affect. However, the association between high levels of college stress and high positive affect is through goal engagement and meaning in life. This suggests that people were able to experience high positive affect in an affectively negative (i.e., stressful) situation, because the situation was meaningful (goal-relevant).

Other situations that engender mixed emotions (e.g., college graduation, bittersweet movies, wedding planning) may do so because they are also situations that are unpleasant, but meaningful. College graduation is sad because it marks the end of an era and the end of friendships, yet it is a meaningful event in people's lives. The bittersweet movie, *Life is Beautiful*, is an unpleasant movie about the fate of Jewish people in concentration camps, yet makes salient the value of human life. Planning a wedding is an onerous task, yet it marks another meaningful life event. All of these examples that have been shown to produce mixed emotions are unpleasant but arguably quite meaningful. Thus, in these situations, mixed emotions may be possible because of the meaning they provide.

Meaning making following traumatic life experiences

It is worth mentioning that there is an existing body of work that demonstrates that traumatic life experiences (e.g., bereavement, serious illness or injury of one's self or loved one, sexual assault, natural disaster) play a large role in people's perceptions of meaning in life. It is important that the current work is properly distinguished from the research on traumatic life events. According to the meaning making model (Park, 2010, in press) and similar perspectives (McCann & Pearlman, 1990; Neimeyer, 2001, 2002; Parkes & Weiss, 1983; Taylor, 1983), extremely negative life events often inspire a meaning making process. However, such events are negative largely because they shatter people's sources of meaning in the first place. They threaten people's goals (Park, in press), personal significance (Taylor, 1983), and beliefs about the self and the nature of the world (Janoff-Bulman, 1989, 1992). These threats cause great distress, which in turn motivate people to restore a sense of meaning.

Restoring meaning involves trying to understand and make sense of these negative events (e.g., Updegraff, Silver, & Holman, 2008; Janoff-Bulman & Frantz, 1997; Silver, Boon, & Stones, 1983) and their significance (e.g., Taylor, Wood, & Lichtman, 1983). This process frequently requires that people revamp their beliefs about the world (e.g., the nature of God; Cason, Resick, & Weaver, 2002) and the self (Taylor, 1983) to accommodate new information learned from these negative events. Similarly, people often adjust their identities (Gillies & Neimeyer, 2006) and reconstruct their goals (Brandtstädter, 2006; Wrosch, Heckhausen, & Lachman, 2006).

Although a good portion of this literature has focused on methods people use to *restore* the meaning that has been lost through traumatic events (Park, in press), some research suggests that over time people experience "posttraumatic growth" as a result of extremely negative events

(e.g., Calhoun & Tedeschi, 2004; Davis, Nolen-Hoeksema, & Larson, 1998; Tedeschi & Calhoun, 1996; Tennen & Affleck, 2002; Yalom, 1980). In other words, although psychological well-being takes a hit after negative life experiences, over time, people experience psychological benefits that go above and beyond simply repairing the psychological damage caused by the traumatic event. And it could be argued that one such benefit is increased perceptions of meaning in life. Experiencing an extremely negative event can change people's perspectives on life. It can lead people to have an increased appreciation for life (Starck, 1983) and ultimately augment the value and significance people place on their lives (Davis et al., 1998). Furthermore, the ability to face adversity through extreme circumstances can sometimes provide feelings of self-efficacy and ultimately bolster feelings of personal worth and value (Tedeschi & Calhoun, 2004; Davis et al., 1998). Moreover, such distressing events can increase the value people place on meaning-providing relationships (Affleck & Tennen, 1996; Calhoun & Tedeschi, 2000).

Taken together, this suggests that traumatic events may lead to increased perceptions of meaning in life once time has passed since the traumatic event. The current work is distinct from this line of work in at least two important ways. First, unlike the posttraumatic growth literature, the current analyses focused on affectively negative experiences that are not necessarily traumatic or life changing. Second, the posttraumatic growth literature suggests that people experience increased perceptions of meaning only after some time has passed since the negative event. Conversely, the present work concerns whether meaning can be found directly while engaged in affectively negative situations.

In Closing

People primarily experience meaning in life when they are feeling happy or are in pleasant moods. The road to meaning in life, however, is not completely lined with roses. The

present research provides initial evidence that people can attain meaning while feeling stress and it paves the way for future research to explore more emotionally complex paths to meaning. Furthermore, the present work provides initial evidence that attaining meaning in life may still result in positive affect, in addition to negative affect, and provides a tentative explanation as to how people can experience mixed emotions. Taken as a whole, the present work suggests that although the path to meaning in life is not always lined with roses, there may be a rose waiting at the end of the path.

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