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ORIGINAL ARTICLE

Processing and Resolving Major Life Stressors: An Examination of Meaning-Making Strategies

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Abstract

Background Meaning making is thought to be key to adjustment following major life stressors, but there is a dearth of research on the topic. We examined how three types of meaning-making related to distress and violations across time. Further, we examined whether meaning-making's association with distress was contingent on whether meaning was made.
Methods Undergraduates who recently experienced a "very stressful event or situation" were assessed four times over 9 weeks ($N = 180$; 76% female; $M_{age} = 18.84$ years).
Results Positive reinterpretation was cross-sectionally associated with better adjustment, but higher baseline emotional processing predicted faster declines in goal violations across time. Baseline emotional processing predicted improving or worsening intrusive thoughts depending on whether meaning was made
Conclusions Meaning-making strategies may have distinct roles in adjustment, with some conferring immediate benefits, while others confer benefits over time and perhaps only to the extent that it leads to greater meaning made.

Keywords Meaning making · Coping · Adjustment · Distress · Emotional processing

Introduction

Meaning making is considered essential to recovery in the context of stressful experiences, including trauma (e.g., Updegraff et al. 2008), loss and bereavement (Park 2005), and chronic stress like severe medical illnesses (Boehmer et al. 2007; Park et al. 2008). Moreover, meaning making is popular in cultural views of adjustment as well as in clinical practice, such as in treating PTSD (e.g., Monson et al. 2006) and depression (Hayes et al. 2005). However, to date, research on meaning making has been hindered by methodological shortcomings that limit tests of its role in recovering from stressful life events.

Meaning-Making Processes and the Meaning-Making Model

The meaning-making model posits that highly stressful life events threaten individuals' global meaning, including their global beliefs, goals and sense of meaning or purpose in life (Janoff-Bulman 1989; Park et al. 2012). When individuals appraise these events (situational meaning) as discrepant with their global meaning, they experience distress (George and Park under review). To reduce distress and facilitate adjustment, individuals attempt to resolve the discrepancy, termed *meaning making* (Park 2010; Park and Folkman 1997).

Perhaps the most central assertion of the meaning-making model is that meaning making reduces distress. That is, meaning making at one time point will predict better subsequent adjustment. A second key tenet of this model is that meaning making reduces discrepancies between appraised and global meaning. Perceived violations of one's global beliefs and goals are expected to diminish over time,

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predicted by previous engagement in meaning making. A third key tenet is that meaning making should lead to adjustment *only* to the extent that meaning is made regarding the stressor. This sense of *meaning made* reflects the person's appraisal of having completed processing (Park and Folkman 1997).

Limitations of Prior Studies

Further research on these central tenets of the meaning-making model is needed. Most relevant prior research suffers from design- and measurement-related limitations. Many studies were conducted retrospectively long after the stressor has passed and nearly all assessed one or at most two time points (Boehmer et al. 2007; Park 2008; Park et al. 2008), thus failing to capture the dynamic period during which people are adjusting to and making sense of their stressor. Further, many studies used limited measures [e.g., single-item measures (Kernan and Lepore 2009; Updegraff et al. 2008)] or assessed only one aspect (e.g., positive reinterpretation; Park et al. 2008; Park et al. 2001).

In theory, meaning making comprises a complex set of processes, yet typical operationalizations used are emotional processing, searching for significance, and positive reinterpretation of a stressful situation (Park 2010). Although both emotional and cognitive processing are important for meaning making (Hunt et al. 2007), existing meaning-making literature is mostly limited to cognitive processing measures. Further, from a clinical perspective, both emotional and cognitive processing are important for adjustment (e.g., emotional rescripting, exposure therapy, cognitive therapy) and perhaps contribute to recovery in complementary ways. In the field of clinical interventions, acceptance-based strategies offer a third approach for recovery following major stressors (e.g., acceptance and commitment therapy; Hayes et al. 2006). Examining different meaning-making strategies, including emotional, cognitive and acceptance-based strategies may reveal important information on potential distinct roles of meaning-making strategies in adjustment processes.

The few existing studies that have examined global meaning violations tentatively support the tenet that meaning making reduces discrepancies, but used unvalidated or single-item measures for violations (e.g., Park 2008; Park et al. 2008). Although a validated measure of global meaning violations now exists (Park 2016), findings of existing studies have yet to be replicated. In addition, these studies reported mixed findings: Emotional processing in bereaved college students related to reduced violations while positive reinterpretation was unrelated (Park 2008), but positive reinterpretation in cancer survivors related to reduced just-world violations (Park et al. 2008). Potential differences in relations of emotional processing and positive reinterpretation with global meaning violations should therefore be further tested using a validated measure of violations.

The tenet that meaning making leads to adjustment only to the extent that meaning is made, requires rigorous testing. Only one study has directly tested the moderation of meaning made on the association between meaning making and adjustment (Manne et al. 2009). This study reported moderation effects for some of the tested measures of meaning made in partners of breast-cancer patients, for example, acceptance moderated the relation between emotional processing and reduced cancer-specific distress. However, measures of meaning made were either single-item measures or measures typically used to assess meaning making (acceptance coping and positive reinterpretation), and thus, may not adequately represent whether participants derived a sense of meaning made.

Present Study

The present study tested how three different meaning-making strategies relate to distress and violations across time, in a sample actively coping with a recent stressor and assessed four times over a period of nine weeks. This study advances research beyond the limitations of previous studies by utilizing more well-developed measures and a multiple-assessment study design which allowed capturing an active and dynamic coping process. To address measurement-related limitations, we assessed meaning making multidimensionally, including emotional processing, positive reinterpretation and acceptance coping. Positive reinterpretation refers to reinterpreting the stressful event in a more positive light (e.g., selectively focusing on an event's potentially positive attributes or reminding oneself of its benefit; Tennen and Affleck 2002). Acceptance coping is a non-judgmental and non-reactive coping strategy (Baer et al. 2006). Emotional processing refers to "a process whereby emotional disturbances are absorbed, and decline to the extent that other experiences and behavior can proceed without disruption" (Rachman 2001). To assess meaning violations and meaning made, we used the recently validated Global Meaning Violations Scale (GMVS; Park et al. 2016) and a more explicit measure of meaning made, the Resolution subscale of the Cognitive Processing of Trauma Scale (Williams et al. 2002).

The following research questions were examined: (1) *Is higher baseline meaning making associated with faster improvements in distress over time?* (2) *Is higher baseline meaning making associated with faster improvements in violations over time?* (3) *Does baseline meaning making lead to improvements in distress over the study span, only to the extent that meaning is made across the study span (i.e., moderation)?*

Methods

Participants were recruited through the Psychology Department participant pool at a large Northeastern University in the United States. Participants were screened during mass testing at the beginning of the semester. The following two questions were used: "Have you had a very stressful event or situation happen to you in the last three months?" and "If you answered 'yes,' how stressful is this event or situation to you now?" For the first question, participants responded yes or no; for the second question, they responded using a 7-point scale ranging from 1 (not at all stressful) to 7 (extremely stressful). Participants who indicated experiencing a stressor and rated it as at least a 3 (somewhat stressful), were eligible to participate in the present study (the average score for the screened individuals was 3.55, SD = 1.81, while average score for the study sample was 5.02, SD = 1.12). Participants were informed that the study was an investigation of the relationship between life events and well-being. They received course credit in exchange for participation. Eligible participants signed up for the study online and were emailed the survey on the data collection days. All data were collected via online surveys and within a 24 h time frame. Emails were sent to each participant on four different data collection days, with three weeks in between each data collection day.

One hundred eighty participants (76% female; M_{age} = 18.84 years, SD = 1.34) were enrolled in the study. The majority of the sample was white/Caucasian (75%), 11% were Asian/Pacific Islander, 6% Latino/Latina, 3% black/African American, and 4% "other". Approximately 40.7% of the sample identified a religious background of Catholicism, 30.5% identified atheism or agnosticism, 6.8% Protestantism, 5.6% Judaism, 4.5% Hinduism, and 8.5% as "other." Approximately 46% of participants reported a family income of greater than $70,000 dollars.

For Time 1, 2, 3, and 4, valid data were present for 177, 164, 155, and 148 participants, respectively. Participants' reported stressors were coded using a categorization scheme previously used to code undergraduate stressors (Park et al. 2016, Study 3). Each stressor was coded as falling into one of seven categories. The percentage of reported stressors that fell into each category was as follows: 27.5% college, academics, extracurricular activities, or transition/moving; 21% illness, injury, or accident; 11.5% death and loss; 7% social conflict; 5.5% abuse, domestic violence, or intimate relationship issues; 0.5% legal problems; 15.4% other (more than one reported stressor or a stressor that did not fall into the other categories); 11.5% did not provide sufficient information for coding.

Materials

Participants were instructed that they qualified for the current study as they had indicated on the prescreener that they experienced a "stressful life event or situation" in the past three months. They were directed to answer the stressor-related survey questions in relation to this event. All study variables were repeatedly assessed at all four time points.

Measures of Meaning Making

To capture the range of different intrapsychic processes that comprise meaning making, we included the Positive Reinterpretation and Acceptance Coping subscales of the COPE Inventory (Carver et al. 1989) and the Emotional Processing subscale of the Emotional Approach Coping Scale (Stanton et al. 2000).

The COPE is a widely used measure of the different ways in which people attempt to manage stress. Sample items for the Acceptance and Positive Reinterpretation subscales, respectively, include, "I tried to get used to the idea that it happened," and "I looked for something good in what was happening". A sample item from the Emotional Processing subscale is, "I took time to realize what I`m really feeling". Participants were instructed to indicate how much they used each way of coping with their stressor in the previous three weeks. Each of the above subscales consisted of 4 items and was rated on a 4-point scale ranging from 1 (*I didn't do this at all*) to 4 (*I did this a lot*).

Measures of Distress

Stressor-related distress was assessed by a face valid single item, *"How distressful is the stressful event or situation to you now?"* at each assessment. Ratings were made on a 7-point scale from 1 (*not at all distressful*) to 7 (*extremely distressful*). Similar single-item measures have been used in previous studies (e.g., Park et al. 2016).

Intrusions were assessed with the Intrusions subscale from the Impact of Event Scale-Revised (IES-R; Weiss and Marmar 1997). This scale measures the extent to which the stressful event intrudes on one's experience through involuntary thoughts, feelings or images regarding the event. Sample items include "I had dreams about it," "I thought about it when I didn't mean to," and "Pictures about it popped into my mind." Participants rated the extent to which they felt distressed by the experience described by each item over the past three weeks on a 5-point scale from 0 (*not at all*) to 4 (*extremely*).

Measures of Violations

Perception of goal and belief violations was assessed with the Belief Violations and Intrinsic Goal Violations subscales of the Global Meaning Violations Scale (GMVS; Park et al. 2016). Participants were explicitly asked the extent to which their stressor violates their beliefs and goals when thinking about how they felt before and after the event. The Belief Violations subscale includes beliefs about fairness and justice, control, and benevolence and safety (e.g., "How much does this stressful experience violate your sense that the world is a good and safe place?"). The Intrinsic Goal Violations subscale asked how much the stressful experience interferes with participants' ability to accomplish the listed goals of "social support and community," "self-acceptance," "physical health," "inner peace," and "intimacy (emotional closeness)." The extent of violations was indicated on a 5-point scale from 1 (*not at all*) to 5 (*very much*). Belief items and goal items were averaged separately to arrive at a score for each, with higher scores indicating greater violations.

Measure of Meaning Made

The four-item Resolution subscale of the Cognitive Processing of Trauma Scale (CPOTS; Williams et al. 2002) assessed the extent to which participants have made sense of the event. They indicated their agreement with statements concerning their current attitudes towards the stressful event such as, "I have come to terms with the experience," and "I have figured out how to cope." Responses were made on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Data Analytic Plan

Multi-level modeling was used to address RQ 1 and 2. In separate models predicting distress variables and belief and goal violations, a time variable centered at baseline (0, 1, 2, 3) was entered at level 1. At level 2, the three meaning-making variables from baseline were entered as grand-mean-centered fixed predictors of the level 1 intercept and the level 1 slope for time. At level 2, gender and ethnicity were also entered as potential controls.

RQ 3 was addressed using moderation analyses. Time 1 resolution scores were subtracted from Time 4 resolution scores to derive an index of meaning made (higher values indicating more meaning made over study span). This meaning made index was multiplied with each of the three meaning-making variables to create three interaction terms. In hierarchical linear regression models predicting Time 4 stressor-related distress and intrusions, the interaction terms were examined one at a time, controlling for baseline levels of those distress variables. In step 1, the main effects and the baseline score on the criterion variable were entered, and in step 2, the interaction term was entered.

In order to consider inflation of Type I error, we calculated adjusted p-values using Bonferroni correction. As we had three meaning-making variables and two distress/violations variables within each research question, the conventional alpha value of .05 was divided by 6 (3×2). Thus, our Bonferroni adjusted alpha level was .008.

Results

Descriptives for study variables across study span can be seen in Table 1. On average, meaning making, distress, and violations decreased, while meaning made increased.

Table 1 Descriptive statistics, reliabilities and intraclass correlations

	Mean (*SD*)				Cronbach's alpha
	Time 1	Time 2	Time 3	Time 4	
(1) Acceptance coping	3.02 (.70)	2.84 (.75)	2.67 (.79)	2.58 (.87)	.81
(2) Positive reinterpretation	2.64 (.80)	2.62 (.79)	2.44 (.79)	2.37 (.84)	.80
(3) Emotional processing	2.61 (.72)	2.49 (.77)	2.34 (.75)	2.27 (.85)	.77
(4) Stressor-related distress	4.61 (1.42)	3.67 (1.61)	3.37 (1.66)	2.94 (1.57)	*a*
(5) Intrusions	2.98 (.98)	2.51 (1.03)	2.35 (1.00)	2.10 (.97)	.91
(6) Goal violations	2.70 (.97)	2.57 (1.05)	2.47 (1.02)	2.25 (.95)	.79
(7) Belief violations	2.67 (.98)	2.52 (.98)	2.56 (1.02)	2.28 (.95)	.84
(8) Resolution	3.79 (1.55)	4.13 (1.61)	4.29 (1.58)	4.67 (1.48)	.87

Cronbach's alpha from Time 1 assessment

SD standard deviation

[a]no Cronbach's alpha computed for distress as it is a single-item measure

For example, average distress (rated on a 7-point scale, ranging from 1 to 7) decreased from 4.61 ($SD = 1.42$) to 2.94 ($SD = 1.57$).

Correlations between study variables at baseline can be seen in Table 2. Positive reinterpretation showed a distinct pattern of correlations with violations, distress, and meaning made relative to the other two meaning-making variables. For example, positive reinterpretation correlated with a higher sense of meaning made ($r = .27$, $p < .001$) whereas acceptance and emotional processing were unrelated ($r = .04$, $p = .59$ and $r = .04$, $p = .63$). Positive reinterpretation was not correlated with intrusions ($r = .08$, $p = .30$), whereas emotional processing was positively correlated with intrusions ($r = .25$, $p = .001$) and acceptance fell just short of meeting criteria for being positively associated with intrusions ($r = .20$, $p = .009$). In terms of associations with belief and goal violations, positive reinterpretation had the lowest correlation values ($r = .01$, $p = .95$ *and* $r = .14$, $p = .07$) relative to acceptance ($r = .14$, $p = .07$ and $r = .14$, $p = .06$) and emotional processing ($r = .07$, $p = .38$ and $r = .24$, $p = .002$).

RQ 1 Is higher baseline meaning-making associated with faster improvements in distress over time?

Multi-level models predicting distress variables were computed, with meaning-making variables entered at level 2 predicting level 1 intercept and the slope for time. It was estimated that the average participant started the study with a distress score of 4.24. It was estimated that this score was higher by .40 ($p = .016$) for each one unit increase in baseline acceptance coping and by .21 ($p = .20$) for each one unit increase in emotional processing, but lower by .34 ($p = .017$), for each one unit increase in positive reinterpretation, however, these coefficients did not meet criteria for the Bonferroni adjusted alpha level of .008. On average, for each passing wave, distress was estimated to decrease by .57. Acceptance and positive reinterpretation were unrelated to rate of change in distress ($b = .02$, $p = .79$ and $b = .10$, $p = .16$, respectively). While, baseline emotional processing was estimated to be associated with a faster rate of change in distress by .18 ($p = .025$), the associated p value fell short of the Bonferroni-adjusted alpha level (Table 3).

Table 2 Intercorrelations at Time 1

	1	2	3	4	5	6	7	8
(1) Acceptance coping	–	.47**	.43**	.13	.20**	.14	.14	.04
(2) Positive reinterpretation		–	.50**	−.07	.08	.14	.01	.27**
(3) Emotional processing			–	.08	.25**	.24**	.07	.04
(4) Stressor-related distress				–	.52**	.32**	.26**	−.50**
(5) Intrusions					–	.58**	.45**	−.47**
(6) Goal violations						–	.40**	−.35**
(7) Belief violations							–	−.30**
(8) Resolution								–

*$p < .05$; **$p < .01$

Table 3 Growth curve models predicting distress using baseline meaning making

Outcome	Level 2 predictor	Intercept	*p*	Time Slope	*p*
Stressor-related distress	*Intercept*	4.24	< .001	−.57	< .001
	Sex	.31	.20	.03	.82
	Race	−.10	.72	.01	.94
	Acceptance coping	.40	.02	.02	.79
	Positive reinterpretation	−.34	.02	.10	.16
	Emotional processing	.21	.20	−.18	.03
Intrusions	*Intercept*	2.66	< .001	−.28	< .001
	Sex	.32	.06	.00	.97
	Race	..22	.05	−.04	.58
	Acceptance coping	−.04	.44	−.04	.44
	Positive reinterpretation	−.16	.11	.05	.24
	Emotional processing	.32	.01	−.09	.06

p = significance value

The model predicting intrusions estimated that at baseline, participants' average intrusions score was 2.66. However, this score was higher by .32 ($p = .007$) for every unit increase in emotional processing, and unrelated to acceptance coping ($b = .22$, $p = .05$) and positive reinterpretation ($b = -.16$, $p = .11$). With each passing wave, intrusions decreased by .28. This rate of improvement was unrelated to acceptance, positive reinterpretation, or emotional processing ($b = -.04$, $p = .44$; $b = .05$, $p = .24$; $b = -.09$, $p = .06$, respectively).

RQ 2 Is higher baseline meaning making associated with faster improvements in violations over time?

Multi-level models predicting belief and goal violations were computed, with meaning-making variables entered at level 2 predicting level 1 intercept and the slope for time. The model predicting belief violations showed that the average participant started the study with a baseline belief violations score of 2.45. This score was unrelated to baseline acceptance ($b = .23$, $p = .04$), baseline positive reinterpretation ($b = -.14$, $p = .20$), and emotional processing ($b = .08$, $p = .45$). On average, for each passing wave, belief violations decreased by .19, and this rate of decline was not associated with acceptance ($b = .01$, $p = .84$), positive reinterpretation ($b = .00$, $p = .96$), or emotional processing ($b = -.04$, $p = .29$) (Table 4).

The model predicting goal violations estimated that on average, participants had a score of 2.50 at baseline. Emotional processing was associated with higher baseline scores of goal violations ($b = .31$, $p = .006$) but was unrelated to positive reinterpretation ($b = -.02$, $p = .81$) and acceptance ($b = .05$, $p = .64$). On average, for each passing wave, goal violations were estimated to decrease by .22. However, emotional processing at baseline was associated with the rate of reduction in violations across time such that for each one unit increase in emotional processing, the rate of decline in goal violations was faster by .13 ($p < .001$). Acceptance and positive reinterpretation were unrelated to rate of change in goal violations ($b = .02$, $p = .60$ and $b = .03$, $p = .30$, respectively).

RQ3 Does meaning making lead to improved distress only to the extent that meaning is made regarding the stressor?

Regression models examined the interaction terms between baseline meaning-making and meaning made over study span in predicting Time 4 distress variables (controlling for Time 1 distress; see Table 5). Of the six interaction terms examined, a significant moderation emerged between emotional processing and meaning made (resolution change score) in predicting intrusions ($\Delta R^2 = .05$, $p = .004$). To probe the moderation effect, simple slope analyses were conducted, wherein the effect of baseline emotional processing on Time 4 intrusions was estimated at the average meaning made score (.92) and at one standard deviation (SD) below (−.84) and above (2.67) the average score. Thus, while on average participants made meaning regarding their stressor over the study span, the negative value for one SD below average score suggested that, for some participants, their sense of meaning made *decreased* over the course of the study.

Simple slope analyses estimated the effects of emotional processing on intrusions at varying levels of meaning made as follows: One SD below, $b = .33$, $p = .02$; average score, $b = .02$, $p = .83$; one SD above, $b = -.28$, $p = .07$. The estimates showed that the effect of baseline emotional processing on Time 4 intrusive thoughts changed in direction across increasing values of meaning made. Among people whose sense of meaning made decreased, higher baseline emotional processing was associated with more Time 4 intrusive thoughts ($b = .33$, $p = .02$), whereas, among people

Table 4 Growth curve models predicting violations using baseline meaning-making

Outcome	Level 2 predictor	Intercept	*p*	Time Slope	*p*
Belief violations	*Intercept*	2.45	< .001	−.19	< .001
	Sex	.27	.08	.12	.02
	Race	.02	.88	−.02	.74
	Acceptance coping	.23	.04	.01	.84
	Positive reinterpretation	−.14	.20	.00	.96
	Emotional processing	.08	.45	−.03	.29
Goal violations	*Intercept*	2.50	< .001	−.22	< .001
	Sex	.23	.13	.13	.009
	Race	.11	.52	−.06	.31
	Acceptance coping	.05	.64	.02	.60
	Positive reinterpretation	−.02	.81	.03	.30
	Emotional processing	.31	.006	−.13	< .001

p = significance value

Table 5 Regression models examining interaction between meaning-making variables and meaning made in predicting adjustment

	Baseline stressor-related distress		Baseline intrusions	
	β	p	β	p
Sex	.06	.42	.10	.20
Race	−.12	.12	−.12	.12
Baseline score	.36	<.001	.37	<.001
Acceptance coping	.04	.65	−.002	.98
Meaning made	−.43	.16	−.02	.94
Acceptance coping × meaning made	−.00	.99	−.33	.27
	R^2 = .27, p = .00, n = 136 ΔR^2 = .00, p = .99		R^2 = .24, p = .00, n = 143 ΔR^2 = .01, p = .27	
Sex	.06	.44	.10	.21
Race	−.13	.10	−.12	.14
Baseline score	.37	<.001	.38	<.001
Positive reinterpretation	.00	.97	.06	.44
Meaning made	−.55	.05	−.09	.73
Positive reinterpretation × meaning made	.11	.68	−.26	.34
	R^2 = .26, p = .00, n = 136 ΔR^2 = .00, p = .68		R^2 = .24, p = .00, n = 143 ΔR^2 = .01, p = .34	
Sex	.07	.35	.11	.13
Race	−.11	.14	−.11	.16
Baseline score	.35	<.001	.39	<.001
Emotional processing	.02	.78	.14	.10
Meaning made	−.03	.92	.48	.10
Emotional processing × meaning made	−.42	.19	−.88	.004
	R^2 = .27, p = .00, n = 136 ΔR^2 = .01, p = .19		R^2 = .28, p = .00, n = 143 ΔR^2 = .05, p = .004	

β = beta coefficient; p = significance level

who gained a sense of meaning made, higher baseline emotional processing appeared to predict less Time 4 intrusive thoughts (b = −.28, p = .07).

Discussion

This study examined how three types of meaning making relate to adjustment and violations by repeatedly assessing a sample of students dealing with a recent stressor across nine weeks. On average, participants showed improved distress and violations and decreased meaning making over time, and participants` sense of meaning made increased across the study period. Thus, this study assessed participants during the dynamic and active process of coping with a recent stressor and, thereby, expands extant meaning-making literature.

Contrary to expectations, none of the meaning-making strategies predicted adjustment across time. However, cross-sectionally, emotional processing was positively associated with intrusions and goal violations, suggesting that distress drove emotional processing. This finding is consistent with the meaning-making model (Park 2010) and prior studies (e.g., George and Park under review; Manne et al. 2009; Updegraff et al. 2008). It is important to note that Bonferroni correction increases the risk of Type II error. The non-corrected p-values, indicated emotional processing to predict lower stressor-related distress over time, consistent with previous research (e.g., Boehmer et al. 2007) and the notion that meaning making is important to adjustment. It is possible that our study was underpowered, and thus, potential significant effects were not detected. Future research should therefore attempt to replicate these findings with a larger sample size.

The present findings showed that emotional processing was associated with reduced goal violations over time. This finding supports the tenet that meaning making reduces discrepancies between appraised and global meaning (Park 2010) and is consistent with the few prior findings testing this aspect (e.g., Park 2008; Park et al. 2008). Belief violations, however, were unrelated with meaning making, cross-sectionally and over time. The following considerations could explain this finding: First, global beliefs may have been less violated than goal violations. Prior research

suggests that belief violations may be lower when suffering from academic stressors relative to loss (Park et al. 2016) and the present sample was predominantly dealing with distress resulting from academics and extracurricular activities. Second, belief violations may require more time for recovery than goal violations. One prior study reported that positive reinterpretation in cancer patients was related to reduced just-world violations at follow-up one year later (Park et al. 2008). Discrepancies between situational and global meaning are distressing (e.g., Park et al. 2016) and examining how different strategies of meaning making reduce global meaning violations is critical to refining our understanding of meaning making. The present findings should therefore be reevaluated over a longer period of time and in a broader spectrum of stressors.

The meaning-making model is based on the notion that meaning made is the end goal of the process and that when meaning is successfully made, favorable adjustment will result. Our finding that meaning made moderated the association between emotional processing and intrusions—such that higher emotional processing predicted lower intrusions over study span in individuals high in meaning made, but *higher* intrusions over time for individuals low in meaning made—is consistent with prior studies of meaning making (e.g., Manne et al. 2009; Park et al. 2008; Updegraff et al. 2008) and rumination (LoSavioet al. 2017; Michael and Snyder 2005). These results highlight the key role played by achieving a sense of meaning made regarding the stressor and underline the importance of future research to better understand how meaning is successfully made.

The pattern of associations found here indicated that different meaning-making strategies may play different roles within the adjustment process. Engaging in positive reinterpretation may be more effective for achieving meaning made relative to the other two meaning-making strategies. By shifting one`s focus towards positive aspects of the stressor, positive reinterpretation is likely to promote positive affect and, thereby, offering more flexibility dealing with the stressor. Many studies have reported that positive reinterpretation was related to successive adjustment (e.g., Boehmer et al. 2007). Emotional processing, in contrast, has rarely been investigated in prior meaning-making research and one study has reported *elevated* distress levels predicted by emotional processing (Stanton et al. 2000). The present results suggest that emotional processing could be more likely to increase distress if not successfully resulting in meaning made, relative to positive reinterpretation. Perhaps, emotional processing is more likely to initially intensify negative emotions emerging from distress, which could make achieving meaning made more challenging. The transition between helpful and not helpful emotional processing seem to be fluent, as Carver and colleagues (1989) for example suggested that "focus on and venting emotions" is a less useful coping response. More research has to be done to advance our understanding of how emotional processing provides meaning made regarding a stressor.

Finally, acceptance coping did not predict adjustment over time. Perhaps, acceptance may already reflect a sense of meaning made, as it was found in prior research to moderate effects of emotional processing on cancer-related distress (Manne et al. 2009). Alternately, acceptance may be more efficient when dealing with severe or uncontrollable stressors like serious illness (Boehmer et al. 2007; Phelps et al. 2008). The role of acceptance within the meaning-making process should be further investigated in a broader spectrum of stressors and considering potential interactions with other meaning-making strategies.

Overall, the present results suggest possible differences in the immediacy with which each of the meaning-making variables relate to adjustment and raise important questions. For example, do individuals choose meaning-making strategies in respect to the type of the stressor? Are certain meaning-making strategies more helpful in the context of specific stressors? Do people engage in different meaning-making strategies simultaneously or successively? Such questions would have important implications for practice, such as helping patients use those strategies that are most effective for their stressor.

Several limitations must be noted. As a non-experimental design, the findings are open to alternative explanations. Namely, other coping strategies or individual differences beyond the assessed meaning-making efforts may explain the identified associations. Another limitation is the undergraduate sample and the type of stressors that participants may have been experiencing. As meaning-making and its association with adjustment may vary across different types of stressors and age groups, a broader sample experiencing diverse types of stressors may have yielded different findings.

Additional limitations of this study pertain to measurement, study design decisions, and multiple comparisons. One of our measures of distress was a brief, single-item index of stressor-related distress that has limited associated validity information. Our design choice of three weeks between assessments was driven by logistical considerations (to allow multiple assessments within the course of the semester), and an alternate time frame may have yielded different findings. A general challenge in longitudinal coping research is that assessment timing decisions inevitably include some arbitrariness due to the unclear timeline of coping processes. Finally, as our study assessed multiple meaning-making and distress variables, several significance tests were conducted within each hypothesis. While we accounted for multiple tests using Bonferroni correction, alternate approaches such as creating a composite distress index may have also been beneficial.

Despite these limitations, the present results add to our understanding of meaning-making following stressors. The finding that different meaning-making strategies may have different effects, and perhaps only to the extent that a sense of meaning is made, has practical implication for therapeutic work (e.g., fostering individuals` ability for emotional processing and positive reinterpretation to achieve a sense of meaning made). Further research is therefore needed on different populations suffering from more intense and diverse stressors. Future research should examine different meaning-making strategies, their potential interplay, and their respective contributions to adjustment.

Compliance with Ethical Standards

Conflict of Interest Iris Lachnit, Crystal L. Park, Login S. Georg declare that they have no conflict of interest.

Ethical Approval All procedures performed in the study involving human participants were in accordance with the UCONN IRB and the 1964 Helsinki declaration and its later amendments.

Animal Rights All institutional and national guidelines for the care and use of laboratory animals were followed.

Informed Consent All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (national and institutional). Informed consent was obtained from all individual subjects participating in the study.

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