

# Emotion

## **Sense of Purpose Predicts Daily Positive Events and Attenuates Their Influence on Positive Affect**

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# Sense of Purpose Predicts Daily Positive Events and Attenuates Their Influence on Positive Affect

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Sense of purpose has proven a consistent predictor of positive outcomes during adulthood. However, it remains unclear how purposeful adults respond to positive events in their daily lives. The current study examined whether sense of purpose predicted the frequency of daily positive events, as well as participants' affect on days with a positive event, across 8 days in an adult sample ( $n = 1959$ ; mean age: 56 years). Sense of purpose predicted a greater frequency of daily positive events. Moreover, sense of purpose moderated the associations between daily positive events and daily positive affect; purposeful adults experienced less of an increase in positive affect both on the current day and the day following the positive event. Findings are discussed with respect to how purpose in life may serve homeostatic functions, insofar that having a life direction reduces responsiveness to daily events and promote affect stability.



*Keywords:* sense of purpose, positive affect, daily events, positive events

Having a sense of purpose, defined as the perception that one feels direction and has goals for life (Ryff, 1989), appears to promote better developmental outcomes across multiple life domains. Studies show that sense of purpose longitudinally predicts future financial success (Hill, Turiano, Mroczek, & Burrow, 2016), better cognitive health, including diminished risk for Alzheimer's disease (Boyle, Buchman, Barnes, & Bennett, 2010), a reduced likelihood for health events ranging from cardiovascular disease (Cohen, Bavishi, & Rozanski, 2016) to infirmity (Boyle, Buchman, & Bennett, 2010), and even lower mortality rate (Cohen et al., 2016; Hill & Turiano, 2014). As a life span resource, purpose is associated with greater well-being during adolescence (Burrow

& Hill, 2011), emerging and young adulthood (Hill, Edmonds, Peterson, Luyckx, & Andrews, 2016), middle adulthood (Ryff & Keyes, 1995), and older adulthood (Reker, Peacock, & Wong, 1987). However, although sense of purpose predicts positive outcomes in the long-run, little is known about the daily lives of purposeful individuals, with respect to whether they do experience more positive events in daily lives and if so, how they respond to these events.

One possibility is that purposeful individuals should have better self-regulatory skills (McKnight & Kashdan, 2009), which allows them to maintain their course with minimal disruption. Having a purpose in life is thought to lead individuals to engage in daily and longer-term goals that suit their overarching life aim (McKnight & Kashdan, 2009; Ryff, 1989). Therefore, part of the value of purpose may be as a regulator that maintains homeostasis to help individuals navigate their daily lives. Indeed, work has similarly suggested that self-regulation is associated with greater meaning in life, a construct that often is defined with respect to feeling purposeful (Van Tongeren et al., 2018), and self-regulatory processes may be important for living a purposeful life (Vazeou-Nieuwenhuis, Orehek, & Scheier, 2017). Support for this claim comes from research showing that sense of purpose predicts better recovery after exposure to negative, emotionally charged stimuli (Schaefer et al., 2013). In addition, sense of purpose appears to moderate the link between reports of daily stressors and daily negative affect (Hill, Sin, Turiano, Burrow, & Almeida, 2018). Interestingly, this buffering role has also been demonstrated in the context of online social interactions. Specifically, possessing a greater sense of purpose attenuated the amount of self-esteem individuals reported after receiving positive feedback (i.e., a high

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number of *likes*) on their profile photographs (Burrow & Rainone, 2017). Therefore, having a sense of purpose may afford a homeostatic function, insofar that it enables individuals to be less affectively responsive to positive events.

Another possibility is that purposeful people may experience more positive events as a result of their goal pursuit, and also benefit more from positive events because they indicate goal progress for those individuals with a life direction. As such, positive events may prove more motivating for individuals with a sense of purpose. McKnight and Kashdan (2009) have suggested that purposeful activities “often have the secondary benefit of elevating the reward potential of subsequent events” (p. 248). This proposal is aligned with work showing that associations between sense of purpose and greater vitality (Scheier et al., 2006), as well as objective activity counts (Hooker & Masters, 2016), insofar that purposeful living appears inherently rewarding and involves engaging in more activities. If true, having a sense of purpose may increase the potential value of positive daily events, because these events may mean more to someone with a life direction.

The importance of studying how purposeful individuals navigate their daily lives is motivated by research on the predictive value of positive events. Daily positive events have received increasing attention because of their unique influences on health and affective outcomes (Sin & Almeida, 2018). For instance, more frequent daily positive events is associated with lower levels of clinically assessed inflammatory markers (Sin, Graham-Engeland, Ong, & Almeida, 2015) and even mortality risk (Jeong, Aldwin, Igarashi, & Spiro, 2016). Though positive events and affect are associated, the magnitude of this association, referred to as responsiveness or reactivity, differs across individuals (Zautra, Affleck, Tennen, Reich, & Davis, 2005). For instance, individuals who experience more positive events may be less responsive to any single occurrence of a positive event. In a daily diary study of adults with rheumatoid arthritis, individuals with higher extraversion (compared to those with lower extraversion) reported more frequent daily positive events but smaller increases in interpersonal joy on days when a higher-than-usual number of positive events occurred (Zautra et al., 2005). Additional evidence comes from work with depressive symptoms, in that individuals higher on depressive symptoms, who likely experience fewer positive events, tend to be more reactive to these events than those lower in depression (Nezlek & Plesko, 2003). If purposeful living does involve more engagement in positive events, this work points to another reason to expect sense of purpose to dampen affective responsiveness to positive events.

### Current Study

The current study employed data from the Midlife in the United States Study (MIDUS) to investigate the role of purpose in predicting engagement in daily positive events, as well as the association between daily positive events on positive affect. Participants who were part of the subset known as the National Study of Daily Experiences (NSDE) completed daily diary interviews by phone across eight days, in which they reported daily affect and positive events. First, we predicted that sense of purpose would be associated with a greater reporting of positive events, given that purposeful individuals exhibit greater life engagement (see also Steger, Kashdan, & Oishi, 2008). Second, we expected that across

the sample, positive events would be associated with increased current-day positive affect. However, the association may be weaker or stronger depending on whether purpose holds homeostatic or motivational functions with respect to positive events. Third, to examine the time course of these associations, we examined the lingering affective responsiveness to positive events one day later, and tested sense of purpose as a moderator in these lagged analyses, similar to past work with this dataset on lingering negative affect (Leger, Charles, & Almeida, 2018). Across all analyses, we also considered gender, age, education, and self-rated health as covariates to demonstrate that any influences on affect or next-day affect were unique to sense of purpose.

## Method

### Participants and Procedure

The current sample participated in both the MIDUS 2 survey and the NDSE. Specifically, 1,949 participants completed the larger MIDUS 2 survey (in which sense of purpose and the covariates were assessed) as well as at least one of eight consecutive daily telephone interviews, though most participants (69.06%) completed all eight daily interviews ( $M = 7.39$  completed assessments,  $SD = 1.27$ ). Participants were more likely to be female (57.72%) and identified as white (84.40%) and were on average 56.41 years of age ( $SD = 12.16$ , range: 33 to 84 years). For all day-lagged models, the sample size dropped modestly ( $N = 1912$ ) due to some individuals failing to complete consecutive assessments. The current sample size has proven sufficient for detecting similar moderation effects in previous work (Hill et al., 2018), and we employed all available data. Ethical approval for the original data collection was obtained at the University of Wisconsin-Madison.

### MIDUS 2 Questionnaire Measures

**Sense of purpose.** Sense of purpose was assessed using the purpose subscale from the Psychological Well-being Scale (Ryff, 1989; Ryff & Keyes, 1995). Participants rated their agreement on a 7-point scale (*strongly disagree* to *strongly agree*) to seven items, including “I have a sense of direction and purpose in life” and “Some people wander aimlessly through life, but I am not one of them” ( $\alpha = .70$ ).

**Covariates.** Age, gender (1 = man, 0 = woman), education (up to high school graduate, some college, or college graduate), and self-rated health were included as covariates, given that all four covariates have been shown to predict daily positive events (e.g., Sin et al., 2015) and are correlated with sense of purpose in the MIDUS dataset (e.g., Hill, Turiano, & Burrow, 2018). Self-rated health was assessed by asking “In general, would you say your physical health is excellent, very good, good, fair, or poor?” Ratings were made on a 0 to 4 scale, with higher scores referring to worse physical health. Mean self-rated health was 1.43 ( $SD = 1.01$ ).

### Daily Diary Measures for Positive Events and Affect

For eight consecutive days, participants reported on whether any positive events occurred in each of five different life domains

(yes/no responses): social interactions, work, home, social network, or other (Almeida, Wethington, & Kessler, 2002). An example item was “did you have an interaction with someone that most people would consider particularly positive (for example, sharing a good laugh with someone, or having a good conversation) since (this time/we spoke) yesterday?” Number of positive events were summed for each day. The intraclass correlation for daily positive events was 0.36; therefore, 36% of the variance in the number of daily positive events was attributable to differences between persons, whereas 64% was at the within-person level.

Daily positive affect was assessed using 13 items (*in good spirits, cheerful, extremely happy, calm and peaceful, satisfied, full of life, close to others, like you belong, enthusiastic, attentive, proud, active, and confident*) ( $R_{\text{between-person}} = 0.99$ ,  $R_{\text{within-person}} = 0.86$ ) (Scott et al., 2018). Participants rated how much of the time they felt each emotion on a scale from 0 (*none of the time*) to 4 (*all of the time*). Mean daily positive affect was 2.72 ( $SD = 0.71$ ). This measure has been employed in multiple previous studies with MIDUS data (e.g., Charles, Mogle, Urban, & Almeida, 2016; Leger, Charles, Turiano, & Almeida, 2016), and it appears to have a single-factor between-subjects solution (Charles, Mogle, Leger, & Almeida, 2019).

### Plan of Analysis

Correlational analyses and linear regressions were first conducted to examine whether sense of purpose was associated with occurrence of positive events. Previous research has demonstrated that sense of purpose is associated with greater average daily positive affect and lower average daily negative affect (Hill, Sin, et al., 2018) in the NSDE sample. To examine the association of sense of purpose with affect during positive event days, as well as the following day, multilevel modeling was used to account for the nesting of days within persons. Given that participants could report multiple positive events each day, the number of positive events was summed for each day, and we included number of positive events as a variable at the daily level. At Level 1 (within-person), we entered number of positive events as a time-varying covariate. Time-invariant measures at Level 2 investigated between-person associations, including age, gender, education, self-rated health, and sense of purpose. To evaluate whether sense of purpose served as a moderator of the associations between daily positive events and current-day affect, we included a cross-level interaction between purpose and number of positive events into the multilevel models.

Based on the approach described in Leger et al. (2018), we evaluated purpose as a predictor of lingering affect (or affective recovery) on the day following positive event occurrence by entering a cross-level interaction term for purpose and the prior-day's number of positive events. These lagged models also covaried for prior-day affect, current-day positive events and its interaction with purpose, and all other covariates. Within- and between-person effects were disaggregated using person-mean centering for Level 1 and grand-mean-centering for Level 2 variables. Pseudo  $R^2$  effect sizes were computed to examine the proportional reduction in residual variance after including the main effect for purpose and the Purpose  $\times$  Positive Events interaction, compared to a base model that contained all variables except purpose. Analyses were conducted using SAS 9.4.

## Results

### Engagement in (Frequency of) Daily Positive Events

Participants reported experiencing an average of 1.13 (of 5 possible) positive events per day ( $SD = 0.69$ , range: 0–5). Sense of purpose was associated with more daily positive events,  $r(1949) = 0.23$ ,  $p < .001$ . In exploratory analyses, we also found that the association between sense of purpose and daily positive events was similar across all specific event categories: positive daily interactions ( $r = .20$ ), positive work events ( $r = .19$ ), positive home events ( $r = .16$ ), positive social network events ( $r = .13$ ), and other positive events ( $r = .11$ ), all  $p$ 's  $< .001$ . The association between purpose and more frequent positive events remained significant in linear regression models that controlled for age, gender, education, and self-rated health.

### Responsiveness to Daily Positive Events

Table 1 presents the results of multilevel models predicting daily positive affect from sense of purpose, as well as additional covariates. Sense of purpose predicted greater daily positive affect (est. = 0.031,  $se = 0.002$ ,  $p < .001$ ), yet the interaction between sense of purpose and positive events was also significant (est. =  $-0.003$ ,  $se = 0.001$ ,  $p < .001$ ). Figure 1 plots the interaction showing that the within-person association between positive events and positive affect was more modest in magnitude for individuals higher on sense of purpose (simple slope for + 1  $SD$  in purpose: est. = 0.028,  $se = 0.007$ ,  $p < .001$ ), compared to those with lower purpose (simple slope: est. = 0.064,  $se = 0.008$ ,  $p < .001$ ). Compared to a base model consisting of covariates only, including the main effect of purpose explained an additional 9.02% of the random intercept variance in daily positive affect. The Purpose  $\times$  Positive Events interaction explained 4.70% of the random slope variance for the relationship between daily positive events and daily positive affect.

Table 2 presents the results of lagged analyses in which current-day positive affect are modeled as a function of sense of purpose,

Table 1  
Results of Multilevel Models Predicting Current-Day Positive Affect From Sense of Purpose, Current-Day Positive Events, and Their Interactions ( $N = 1,949$  Persons and 14,381–14,382 Days)

Predictor	Estimate (SE)	$p$
Intercept	2.616 (0.028)	<.001
Age	0.012 (0.001)	<.001
Gender (0 = Women, 1 = Men)	$-0.003$ (0.029)	.92
Education (Ref = College graduate)		
High school graduate or below	0.209 (0.037)	<.001
Some college	0.143 (0.035)	<.001
Self-rated health <sup>a</sup>	$-0.141$ (0.015)	<.001
Number of positive events (BP)	0.014 (0.022)	.54
Number of positive events (WP)	0.046 (0.005)	<.001
Sense of purpose	0.031 (0.002)	<.001
Sense of Purpose $\times$ Positive Events (WP)	$-0.003$ (0.001)	<.001

Note. BP = between person; WP = within-person.

<sup>a</sup> Participants rated their physical health on a scale from 0 (*excellent*) to 4 (*poor*), with higher scores referring to worse health.

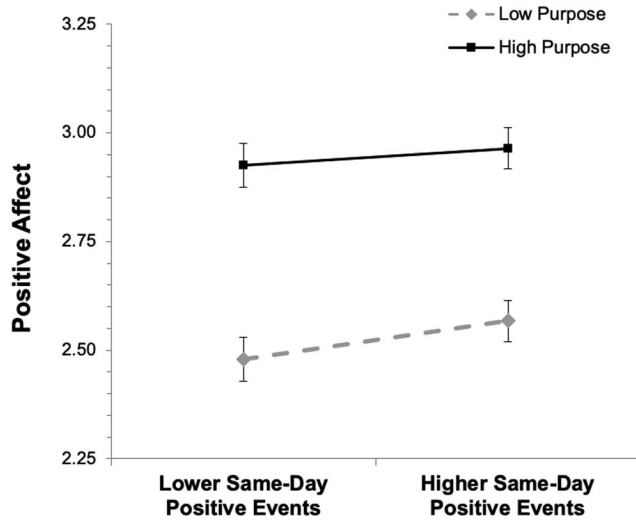


Figure 1. Interaction plot for sense of purpose by number of current-day positive events predicting current-day positive affect, controlling for other predictors in the model. Purpose is plotted at  $+1$  *SD* (High) and  $-1$  *SD* (Low) from the mean of 38.84 (*SD* = 6.89). Low and high positive events are plotted at  $\pm 1$  *SD* (0.69) from the mean of 1.13.

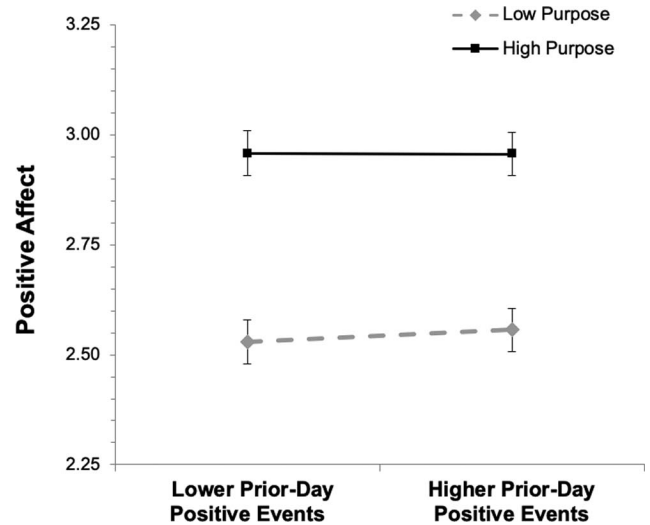


Figure 2. Interaction plot for sense of purpose by number of prior-day positive events predicting current-day positive affect, controlling for other predictors in the model. Purpose is plotted at  $+1$  *SD* (High) and  $-1$  *SD* (Low) from the mean of 38.84 (*SD* = 6.89). Low and high positive events are plotted at  $\pm 1$  *SD* (0.69) from the mean of 1.13.

the prior-day's positive events and affect, as well as additional covariates. Sense of purpose still predicted higher current-day positive affect (est. = 0.030, *se* = 0.002,  $p < .001$ ) and interacted with current-day positive events to predict current-day positive affect (Interaction est. =  $-0.003$ , *se* = 0.001,  $p < .001$ ). Moreover, sense of purpose interacted with the prior-day's number of positive events to predict current-day positive affect (Interaction est. =  $-0.002$ , *se* = 0.001,  $p = .036$ ). Figure 2 plots this interaction, showing that individuals lower in sense of purpose report slightly higher positive affect on days following positive events (simple slope: est. = 0.020, *se* =

0.007,  $p = .007$ ), but for individuals reporting a greater sense of purpose, positive events have no influence on the following day's positive affect (simple slope: est. =  $-0.001$ , *se* = 0.007,  $p = .86$ ). Compared to a model without sense of purpose, the inclusion of purpose explained an additional 8.92% of the random intercept variance in daily positive affect. Further including interactions of purpose with current-day and prior-day positive events explained 11.06% of the random slope variance for the association of daily positive events with daily positive affect.

## Discussion

Though sense of purpose appears positive in the long-run, questions remain regarding how purposeful individuals manage their daily positive experiences. The current findings present evidence that purposeful living may involve more frequent daily positive events, though less fluctuation in positive affect associated with these events. First, purposeful individuals tended to experience more positive daily events, with small-to-medium effect sizes, and frequency of positive events was a significant predictor of daily positive affect across models. Second, sense of purpose may reduce responsiveness to current-day positive events, as well as the extent to which individuals experience lingering positive affect from the prior-day's positive events.

These findings provide an interesting connection to past findings showing that sense of purpose failed to moderate the association between daily stressors and daily positive affect (Hill et al., 2018). As such, sense of purpose appears to attenuate the association between daily events and daily affect of the same valence. In line with past work on extraversion (Zautra et al., 2005), the current study suggests that purposeful individuals are less prone to be overjoyed or experience positive affective lingering in response to positive events, particularly interpersonal events. Furthermore, recent work has suggested that the "fragility" of positive affect

Table 2

Results of Multilevel Models Predicting Current-Day Positive Affect From Sense of Purpose, Current-Day Positive Events, Prior-Day Positive Events, and Their Interactions ( $N = 1,912$  Persons and 11,883 Days)

Predictor	Estimate ( <i>SE</i> )	<i>p</i>
Intercept	2.624 (0.029)	<.001
Age	0.012 (0.001)	<.001
Gender (0 = Women, 1 = Men)	0.018 (0.030)	.56
Education (Ref = College graduate)		
High school graduate or below	0.233 (0.038)	<.001
Some college	0.144 (0.036)	<.001
Self-rated health <sup>a</sup>	$-0.150$ (0.016)	<.001
Number of positive events (BP)	0.028 (0.024)	.23
Sense of purpose	0.030 (0.002)	<.001
Prior-day affect	0.012 (0.010)	.23
Number of current-day positive events (WP)	0.058 (0.005)	<.001
Number of prior-day positive events (WP)	0.010 (0.005)	.054
Purpose $\times$ Current-Day Positive Events (WP)	$-0.003$ (0.001)	<.001
Purpose $\times$ Prior-Day Positive Events (WP)	$-0.002$ (0.001)	.036

Note. BP = between-person; WP = within-person.

<sup>a</sup> Participants rated their physical health on a scale from 0 (*excellent*) to 4 (*poor*), with higher scores referring to worse health.

may have implications for healthy aging and psychological well-being; (Ong & Ram, 2017); this work points to the notion that if positive affect was purely event-contingent, and thus more fragile, it would prove problematic for healthy life span development. Therefore, sense of purpose may prove beneficial by, at least partially, disentangling adults' daily affect from their daily events.

A related, though alternative account can be framed around the consistent effect for sense of purpose on daily positive affect. Sense of purpose was a significant unique predictor of daily positive affect in all models above and beyond the covariates. Furthermore, the figures show little evidence of changes in positive affect among purposeful individuals, regardless of the presence of positive events. As such, one could conclude that purposeful individuals may be buffered against the ill-effects associated with the absence of positive events on a given day. It is worth noting that even purposeful individuals were not reporting at levels close to the ceiling for positive affect, on days with or without many positive events, and there was still potential for upward shifts to occur. That said, future research should consider replicating these findings with a more fine-tuned rating scale, and multiple assessments throughout the day more proximal to the positive events, in order to have greater precision and insight into whether individuals were down-regulating their positive events or showing relative maintenance of positive affect regardless of the day's experience. Moreover, it would be valuable to consider whether sense of purpose operates similarly on high and low arousal emotions, in order to better circumscribe the role of purpose. For instance, it may be that purposeful individuals maintain a foundation of low arousal positive affect across days, or they may be less aroused by daily events.

Another point worth discussion is the consistent association between sense of purpose and frequency of positive events. At least two primary rationales present for explaining these effects. On one hand, purposeful individuals may generate more positive events as a result of their greater life engagement (Scheier et al., 2006) and progression toward their life direction (Ryff, 2014). On the other hand, purposeful individuals may be more likely to perceive events as being more positive in their daily lives, similar to how purpose appears to shape individuals' perceptions of daily obstacles (Burrow, Stanley, Sumner, & Hill, 2014). Related work has similarly shown that positive affect shapes individuals' perceptions of the extent to which their days and activities are meaningful (King, Hicks, Krull, & Del Giaso, 2006), and thus it would be valuable to consider the extent to which sense of purpose uniquely influences perceptions of daily events. Both of these pathways are likely given that having a sense of purpose has been hypothesized to influence individuals' daily events and their perception of said events (McKnight & Kashdan, 2009). However, future experimental research is necessary to better understand the relative explanatory value of the two accounts. Moreover, work should attempt to identify the emotion regulation strategies most frequently employed by purposeful individuals, as these explanations both point to potential differences in situation selection strategies.

The current study is not without its limitations. To start, the sample is relatively well-educated and racially homogeneous compared to the general population, leading to the need for future research with a more diverse and representative sample. In addition, it would be valuable to capture participants' daily levels of

sense of purpose to test the potential for bidirectionality. Finally, participants were only asked to report at the end of the day, limiting our ability to circumscribe the extent to which sense of purpose predicted participants' responsiveness to the events as they occurred. As such, it is difficult to ascertain the time-scale whereby sense of purpose influences the affective responsiveness and lingering processes without having more microlevel data collected throughout the day.

These caveats aside, the current study provides additional evidence that having a purpose in life holds benefits in daily life. Sense of purpose appears to predict engagement in daily positive events and predict the extent to which people respond, at least with respect to fluctuations in positive affect, to events. One possibility is that purposeful individuals do not linger on these events perhaps because they anticipate more such events in the days ahead, as they continue progressing toward their life direction. Overall, having a purpose appears to provide a psychological compass to help adults navigate their way toward more positive events in daily life.

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