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Hope as a Meaningful Emotion:

Hope, Positive Affect, and Meaning in Life

Megan E. Edwards[1], Jordan A. Booker[1], Kevin Cook[1], Miao Miao[2], Yiqun Gan[3], Laura A. King[1]

[1] Psychological Sciences, University of Missouri, Columbia, MO, United States

[2] Department of Medical Psychology, School of Health Humanities, Peking University, China

[3] School of Psychological and Cognitive Sciences and Beijing Key Laboratory of Behavior and Mental Health, Peking University, China

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Abstract

Six studies (combined $N = 2,312$) examined the emotion of hope as a unique and robust predictor of meaning in life. In cross-sectional data (Studies 1-2), hope predicted greater meaning, controlling for other positive affect and this relation was not moderated by positive affect, in majority White U.S. samples. Utilizing a daily diary (Study 3), daily hope predicted daily meaning independent of positive emotions, in a Chinese sample. A five-wave longitudinal design (Study 4) replicated Study 3, demonstrating that hope was the only positive emotion to predict meaning in life in future waves. Finally, two experiments tested whether hopeful feelings would explain the effects of cheerful (versus sadness) mood inductions (Study 5) or hopeful (versus hopeless) mood inductions (Study 6) on meaning in life. Although in neither study did manipulations directly affect meaning in life, hopeful feelings showed significant indirect effects explaining the condition effects on meaning in life. The current studies support that feeling hopeful contributes to the sense that life is meaningful, controlling for other positive feelings.

Keywords: hope, positive affect, meaning in life, discrete emotion

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Experiencing life as meaningful is an important aspect of psychological functioning. Meaning in life encompasses at least three experiences, namely, purpose, coherence (or comprehensibility), and existential significance (or mattering) (George & Park, 2017; Heintzelman & King, 2014; Martela & Steger, 2016). Self-reports of meaning in life relate positively to important outcomes across many life domains, including psychological (e.g., Arslan et al., 2022; Hooker et al., 2020), physical (e.g., Mota et al., 2016; Shiba et al., 2021; Steptoe & Fancourt, 2019) and social (e.g., Folker et al., 2021) functioning. In addition, the experience of meaning can buffer the negative effects of traumatic life circumstances (e.g., Schnell & Krampe, 2020) and predicts more effective coping with stressors (Ward et al., 2023). As such, developing a comprehensive understanding of what makes life meaningful is an important goal for research. Positive feelings contribute to a meaningful life and, whether experienced or induced, positive affect enhances meaning in life (King & Hicks, 2021). In addition, discrete positive emotions, including nostalgia (Routledge et al., 2011), gratitude (Czyżowska & Gurba, 2022), and awe (Rivera et al., 2020), promote meaning in life. To expand the positive emotions linked to meaning in life, we tested the prediction that feeling hopeful would relate to meaning in life, using diverse methods, including cross-sectional, daily diary, longitudinal, and experimental designs. In addition to contributing to our understanding of meaning in life, our approach centered hope as an emotion, an aspect of hope that has been neglected in prior research.

Hope

There are three main aspects of hope that scholars emphasize (Lopez & Snyder, 2003; Luo et al., 2002; Staats & Stassen, 1985): hope involves the belief or expectation that the hoped-

for future is possible, a desire for that outcome, and a positive feeling. Although hope encompasses cognitive, motivational, and affective components, most research on hope has focused on its cognitive and motivational aspects. This focus is likely due to Snyder's (e.g., Snyder et al., 1991) influential approach to hope. This framework defines hope as a sense of agency (i.e., the belief that one can effectively attain goals) as well as pathway beliefs (i.e., having many ways to reach goals). Voluminous research supports the benefits of endorsing high agency and pathway beliefs for healthy functioning (e.g., Chang et al., 2022; Chang & DeSimone, 2001; Irving et al., 1998; Germann et al., 2018; Shorey et al., 2003; Snyder et al., 2002; Snyder et al., 2005; Visser et al., 2013). Agency and pathway beliefs are beneficial for well-being, relating to greater life satisfaction (Cotton et al., 2009), positive coping with stressful life events (Danoff-Burg, 2004; Irving, 1998) and lower emotional distress (Braun-Lewensohn, 2021). Given the relevance of agency and pathways to purpose (a central feature of meaning in life), it is not surprising that agency and pathway beliefs correlate positively with meaning in life (Feldman & Snyder, 2005).

Research drawing on Snyder's approach suggests that agency and pathways predict meaning in life, however, this approach falls short of a comprehensive understanding of hope (Staats & Stassen, 1985). Snyder's framework potentially conflates hope with goal-relevant self-efficacy (Krafft et al., 2019). Agency and pathway beliefs may be aspects of hope but focusing on these experiences neglects hope's affective side. Hope involves not only cognitive and motivational but also *affective* processes (Aspinwall & Leaf 2002; De Pretto et al., 2022). Agency and pathway measures do not assess hopeful feelings—the items do not include the word "hope."

How might we understand the affective side of hope? Hope is a feeling that something good might happen—a positive emotion linked to anticipated and desirable positive outcomes (Edwards et al., 2024). Feeling hopeful implies the possibility of change, a transition to something better than present circumstances. Although "hopeful" does not appear on some common measures of positive affect (e.g., the PANAS, Watson et al., 1988), it has been included in measures of positive feelings (Fredrickson et al., 2003; Miao et al., 2017). Everyday people are likely to view hope primarily as an emotion (Bruininks & Malle, 2006). Yet, this affective side of hope has received only limited scholarly attention (Edwards et al., 2024; Miao et al., in press). There are reasons to expect this emotion to be especially relevant to the experience of meaning in life, as we now consider.

Hope as a Meaningful Emotion

Given that hope is a positive feeling and positive affect is consistent correlate of meaning in life (e.g., King & Hicks, 2021), it is certainly reasonable to expect feeling hopeful to relate to meaning in life. However, there are reasons beyond its positive valence to expect the feeling of hope to share a relation to the experience of meaning, perhaps over and above other positive feelings. Indeed, hope bears obvious and more subtle relevance to the experience of meaning.

Certainly, as noted above, Snyder's conceptualization of hope suggests its central relevance to the experience of purpose. However, considering the affective side of hope suggests the relevance of hope to purpose extends beyond agency and pathways. If emotions provide information or feedback for goals (Clore & Palmer, 2009; Schwarz & Clore, 2003; Lazarus, 1999), hope may be an important emotion for distal, long-term goals. Hopeful feelings inform us to keep going or keep holding on, to keep waiting for delayed outcomes (Edwards et al., 2024). Moreover, even when personal agency bears little relevance to outcomes (e.g., having submitted

an application to college, professional school, or a job), feeling hopeful might still allow a person to remain attached to and mindful of distal cherished goals, extending and potentially protecting life purposes.

In addition, hope is a time traveling positive emotion—it is inherently tied to the future. In turn, the future is tied to meaning. For example, mental simulation, including projecting the self into the future, leads to higher meaning in life (Waytz, et al., 2015). In an experience-sampling study, participants rated thoughts about the future as more meaningful than thoughts about the present (Baumeister, et al., 2020). In projecting the self into the future, hope may support a sense of self-continuity (Baumeister, et al. 2016; Vess et al., 2018). To the extent that hope provides an affective link between the present and future, it might enhance the perception of life is a unified whole, supporting a sense of coherence.

More generally, hope may be an unusual positive emotion that could boost meaning in life even in the face of trauma, adversity, or uncertainty. Because hope is tied to a better future, hopeful feelings may occur even during difficult experiences, potentially facilitating the experience of meaning even when other positive feelings are out of reach. Adversity, trauma, and experiences of suffering (Edwards & Van Tongeren, 2020) as well as the experience of uncertainty (e.g., Hogg, 2022; van den Bos, 2009) can threaten personal meaning. Times of distress and uncertainty may be precisely the contexts when feeling hopeful is most necessary to support meaning in life. When the chips are down or outcomes are uncertain, a person can still hope for the best. Feeling hopeful may fill the void of uncertainty with a positive sense that things might go well.

Overall, hope's emotional and cognitive components should both function to foster meaning in life. However, as previously noted, research has only supported the link between

agency/pathways and meaning (Feldman & Snyder, 2005), leaving open the question of whether hope's affective side contributes to meaning in life. In the present studies, we expected hopeful feelings would predict meaning in life independent of its cognitive side (i.e., agency/pathways).

Accounting for Positive Affect

Research on positive affect and meaning in life helped guide our investigation into the role of hope in meaning in life. As noted above, positive affect and meaning in life are positively related (Chu et al. 2019; Hicks et al. 2012; Miao & Gan 2019; Tov & Lee 2016) and induced positive affect enhances meaning in life (Hicks et al. 2010; King et al. 2006; Ward & King 2016). Because just being in a pretty good mood can enhance meaning in life, we sought to account for positive affect in the link between hope and meaning in life in the present studies. Notably, in past research on awe, the positive affect that emerged from awe provided its link to meaning in life (Rivera et al., 2020). In contrast, we expected that hope would relate to meaning in life independent of positive affect and, for the reasons described above, that hopeful feelings would be a more robust predictor of meaning in life than general positive affect. We tested whether hope and positive affect predicted meaning in life independently.

In addition, hopeful feelings might help explain the overall association between general positive affect and meaning in life. Positive emotions tend to be experienced together (Shiota et al., 2017; Tellegen et al., 1999). When we feel happy, we are likely also feeling confident and excited, and potentially hopeful. When positive affect inductions enhance meaning in life, the experience of hopeful feelings may explain this effect (a possibility we tested in Study 5).

The Present Research

Six studies addressed the relation of hope to meaning in life, in the context of the association between positive affect and meaning in life. We focused on distinguishing hope as a

positive feeling state (e.g., "I feel hopeful") from hope as agency and pathways, and examined whether feeling hopeful uniquely predicted meaning in life, above and beyond agency/pathways and other general positive emotions. Cross-sectional Studies 1-2 tested the prediction that hopeful feelings would relate positively to meaning in life controlling for agency/pathways and positive affect. In Study 3, secondary analyses of existing daily diary data tested whether daily hopeful feelings predicted daily meaning in life even accounting for other positive feelings. Similarly, Study 4, a five-wave short-term longitudinal study, tested the prediction that hope would predict meaning in life over time, over and above positive mood. In an experiment (Study 5), we induced positive, negative, and neutral affect to examine whether hope explained the overall relation between positive affect and meaning. Finally, in Study 6, we experimentally manipulated hopeful (versus hopeless) feelings to test for causal effects on meaning in life. Overall, we predicted that feeling hopeful would predict meaning in life, in the moment and over time, even controlling for positive affect (all studies) and agency/pathways (Studies 1-2).

Transparency and Openness

For this and all other studies, we report how we determined sample size, all data exlusions, all manipulations, and all measures in the study unless otherwise specified. All data, and research materials are available https://osf.io/6jzwy and https://osf.io/caj3n.

Study 1

Participants completed measures of hope, other positive emotions and meaning in life. We tested whether hopeful feelings predicted meaning in life even accounting for agency/pathways and other positive feelings. This study was collected as a part of a larger study that manipulated hope, happiness or a neutral affect, where the current sample was a fourth condition of participants, who were randomly assigned to no manipulation prior to completing

the measures.[1] This condition was pre-registered to be analyzed separately as a cross-sectional design (https://osf.io/6jzwy).

Method

Participants and Procedure

Participants were recruited through Cloud Research (N = 227). All participants were required to be 18 years of age or older and living in the United States. They were compensated $0.50 for completing a 10 minute online study. Once final data collection was complete, 44 participants were excluded from the data for not completing the survey or failing to pass an attention check question. The remaining participants (N = 183, 66.1% women, 33.9% men, 1 identified as non-binary) were ages 18 – 77 years, $M(SD)_{age}$ = 40.63 (14.76), and the majority identity White (79.2%; 8.2% Black or African American, 8.2% Hispanic or Latiné, 7.1% Asian, 1.6% American Indian or Alaska Native, 1.1% other, 1.1% prefer not to say). Power analyses suggest that this sample provided 80% power to detect an effect of β = .22 with α set at .05.

Measures

Positive Affect

Participants reported the extent to which they were currently feeling positive emotions: happy, content, enjoyment, cheerful, excited, energetic, and confident on a scale from 1 (*not at all*) to 7 (*extremely*). To conform to the emotions included in Study 3, we aggregated ratings for happy, excited, energetic, and confident, to represent positive affect, α = .83, $M(SD)$ = 4.38 (1.30).

[1] The experimental manipulations were not effective. The study was conducted during the COVID-19 pandemic. Unwisely, the hopeful/happy manipulations both involved writing about "what makes you feel hopeful/happy during the pandemic?" The neutral condition did not mention the pandemic. Analyses of manipulation checks suggested, the hope/happy condition did not lead to greater hope/happiness compared to the neutral condition. The experimental data were not further analyzed.

Hope

A measure of global hope was adapted from multiple hope measures selecting items that explicitly mentioned *feeling hopeful* (or hopeless; Ginerva et al., 2017; Hagan, 1997; Krafft et al., 2019; Schrank et al., 2011). Five items included, "I feel hopeful," "I am hopeful with regard to my life," "I am hopeful about the future," "I can see little hope for my future," and "I am hopeless about some parts of my life" rated on a scale from 1 (*strongly disagree)* to 6 *(strongly agree)*, α = .86, *M*(*SD*) = 4.42 (1.02).

Participants completed 6-items from the State Hope Scale (Snyder et al., 1996), including 3 items each for agency (e.g., "at the present time, I am energetically pursuing my goals,") and pathways (e.g., "I can think of many ways to reach my current goals"), α = .86. Items were rated from 1 (*definitely not*) to 8 (*absolutely true*), α = .91, *M(SD)* = 5.87(1.34). The overall score was used to measure agency/pathways as the cognitive component of hope.

Meaning in Life

The Meaning in Life Questionnaire (MLQ; Steger et al., 2006) was used to measure the presence of meaning in life (5 items, e.g., "I understand my life's meaning"), α =.92, *M*(*SD*) = 4.91 (1.37), on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). The MLQ scale includes a subscale for search for meaning in life. As search for meaning was beyond the scope of the present studies, results are in the supplement.

Results

As Table 1 shows, all variables were positively and substantially related.

To examine the potential independent contribution of hopeful feelings to meaning in life, we regressed meaning in life on agency/pathways, positive affect, and hopeful feelings simultaneously (tolerance for predictors $\geq$ .51). Results suggested that, although

agency/pathways significantly predict meaning in life, $\beta = .35$, $p < .001$, hopeful feelings also contributed significantly, $\beta = .28$, $p = .003$, with similar magnitude, $z = 0.51$, $p = .609$. Notably, controlling for agency/pathways and hopeful feelings, positive affect no longer predicted meaning in life, $\beta = .03$, $p = .712$. Thus, hopeful feelings contributed to the experience of meaning in life even accounting for hope's cognitive side.

Brief Discussion, Study 1

Results replicate prior research showing that hope (Feldman & Snyder, 2005) and positive affect (King et al., 2006) relate positively to meaning in life. Importantly, both hopeful feelings and agency/pathways uniquely contributed to meaning in life, suggesting that hope's affective side is related to meaning in life. In addition, controlling for the significant contribution of both sides of hope (feelings and cognitions), positive affect no longer predicted meaning in life. Study 2 aimed to conceptually replicate these findings with a more comprehensive measure of positive affect and a different measure of meaning in life, incorporating the three facets of meaning.

Study 2

Study 2 aimed to replicate and extend Study 1, measuring the three facets of meaning in life. Again, we tested whether hopeful feelings, agency/pathways, and positive affect related to meaning in life independent of each other. Data were collected as a part of a larger assessment containing measures for other studies. Study 2 was not pre-registered.

Method

Participants and Procedure

Participants were recruited through Cloud Research ($N = 912$). All participants were required to be 18 years of age or older and living in the U.S. They were compensated $0.50 for

completing this 10 minute online study. Once final data collection was complete, 157 participants were excluded for not completing the survey. The remaining participants (N = 755; 55.0% women, 44.1% men, 6 identified as non-binary 1 preferred not to say) were ages 19-88 years, *M(SD)* = 43.24 (14.05) and the majority identified as White (76.4%; 8.5% Black or African American, 6.5% Asian, 6.4% Hispanic or Latiné, 2.0% other, and 0.3% American Indian or Alaska Native). Power analyses suggest that this sample provided 80% power to detect an effect of β = .11 with α set at .05.

Measures

Positive Emotions

The Differential Emotions Scale (modified, Fredrickson et al., 2003) measured current positive emotions (9 items, e.g. "I feel amused, fun-loving and silly"), *M*(*SD*) = 3.45 (0.92), α = .93, rated on a scale from 0 *(not at all)* to 4 *(extremely).*

Hope

Global hope was measured as in Study 1. However, items were rated on differing scales (reflecting their original scales). "I can see hope for my future," (Ginerva et al., 2017) was rated on a scale of 1 *(It does not describe me at all)* to 5 *(It describes me very well); "How often are you hopeful about the future?,"* (Hagan et al., 1997) was rated on a scale of 1 *(always)* to 5 *(never);* "I feel hopeful" and "I am hopeful with regard to my life" (Krafft et al., 2019) were rated on a scale of 1 (*strongly disagree*) to 6 (*strongly agree*); "I am hopeless about some parts of my life," (Schrank et al., 2011) was rated on a scale of 1 *(strongly disagree)* to 6 *(strongly agree).* Items were standardized and aggregated, α = .85. Agency/pathways were measured using the 8-item Trait Hope Scale (Snyder et al., 1991), α = .89, *M*(*SD*) = 3.04(0.55).

Meaning in Life

The Tripartite Meaning Scale (Costin & Vignoles, 2020) includes 4 subscales measuring global meaning in life as well as the 3 facets of meaning. Items are rated on a scale from 1 *(strongly disagree)* to 7 *(strongly agree*). For global meaning in life (e.g., "My life as a whole has meaning"), *M*(*SD*) = 5.21 (1.56), α = .90; purpose (e.g., "I have certain life goals that compel me to keep going") *M*(*SD*) = 5.20 (1.43), α = .86; coherence (e.g., "I can make sense of the things that happen in my life;" *M*(*SD*) = 4.88 (1.27). α = .76; and significance (e.g., "Even considering how big the universe is, I can say that my life matters"), *M*(*SD*) = 4.61 (1.68), α = .87.

Results

Hopeful feelings and agency/pathways were positively related, to each other, r = .65, and to positive affect, r = .73, .66, respectively. Hopeful feelings (r's = .80, .71, .70, .66), agency/pathways (r*'s* = .61, .58, .58, .51) and positive affect (r's = .70, .58, .60, .63) were all significantly positively related to global meaning, purpose, coherence, and significance, respectively, all p*'s* < .001.

Similar to Study 1, we regressed global meaning in life on agency/pathways, hopeful feelings and positive affect, simultaneously. In this case, all three predictors contributed significantly. For agency/pathways, β = .08, p = .009; for hopeful feelings, β = .60, p < .001, and for positive affect, β = .20, p < .001. The contribution of hopeful feelings to global meaning was significantly stronger than the contribution of agency/pathways, z = 13.67, p < .001, and positive affect, z = 10.82, p < .001. The contribution of positive affect was also significantly stronger than the contribution of agency/pathways, z = 2.74, p = .006.

Hope and Facets of Meaning

Next, we regressed purpose, coherence, and significance on hopeful feelings, agency/pathways, positive affect. The other two meaning facets were entered on Step 1, and the predictors were entered on Step 2. Hopeful feelings (β = .28, p < .001) and agency/pathways (β = .13, p < .001) significantly predicted purpose. (For positive affect, β = -.05, p = .129). Similarly, hopeful feelings (β = .24, p < .001) and agency/pathways (β = .09, p = .006) predicted coherence. (For positive affect, β = .06, p = .118). Finally, hopeful feelings (β = .20, p < .001) and positive affect (β = .27, p < .001) predicted significance. (For agency/pathways, β = -.04, p = .257).

Brief Discussion, Study 2

As in Study 1, the relation between hopeful feelings and global meaning in life was significant, controlling for agency/pathways and positive affect. Thus, the affective side of hope shares a unique relation to meaning in life. In addition, the contribution of hopeful feelings to global meaning in life was significantly stronger than the contribution of agency/pathways (contrary to Study 1) or positive affect (as in Study 1). Regarding the facets of meaning, hopeful feelings had a unique relation to all three facets of meaning. In contrast, agency/pathways predicted only purpose and coherence and positive affect predicted only significance.

Although supporting predictions, Studies 1 and 2 were limited by cross-sectional designs. Study 3 employed daily diary data to examine the relation between daily hope, positive affect, and meaning in life over a three-week period.

Study 3

A secondary analysis of published daily diary data (Miao, et al., 2017) tested the prediction that daily hope would be a unique predictor of meaning in life, even accounting for the experience of other daily positive emotions. Analyses were not pre-registered.

Method

Participants and Procedures

Full methods can be found in Miao et al., (2017). This secondary analysis included 132 adults (72% women). For age, *M(SD)* = 27.2 years (4.54). Participants were students completing education psychology night courses in China. They completed a baseline questionnaire and then online daily dairy measures for the following three weeks.

Materials

All measures were presented in Chinese. Rating scales ranged from 1 (low endorsement) to 7 (high endorsement).

Baseline measures. Baseline measures included the MLQ (Steger et al., 2006); translated by Liu and Gan (2010), for the presence of meaning subscale, $\alpha = .78$. Baseline measures of positive affect included the positive affect subscale of Positive and Negative Affect Schedule (PANAS; Watson et al. 1988). The Chinese version was adapted by Qiu et al. (2008), which contains nine positive adjectives (e.g., active, excited, proud) for the assessment of PA, $\alpha = .88$.

Daily measures. Participants responded to 2 items (e.g., "My life feels meaningful") measuring daily meaning in life. Daily reports of positive affect included, hopeful; excited; happy; energetic; and confident. Descriptive statistics for daily reports are in Table S1.

Analytical Plan

Secondary analyses were conducted using R (R Core Team, 2022) and relevant packages for hierarchical linear models (*lme4*, Bates et al., 2015; *lmerTest*, Kuztesova et al., 2017). Preliminary analyses included tests for missing data and assumptions of data missing at random, bivariate correlations across study measures, and tests of the intraclass correlation (ICC) for each measure captured over multiple times from respondents.

Hypotheses tests included a series of hierarchical linear models that tested between-person differences in meaning in life given demographic factors (age and gender) and baseline positive affect (Model 1); the influence of day-to-day hope, but not other measures of positive emotion, on meaning (Model 2); the influence of other daily positive emotions, but not hope, on meaning (Model 3); and the influences of hope alongside other daily positive emotions for meaning (Model 4). Deviance tests were conducted between models to determine if the addition of daily hope significantly improved model fit.

Results

Management of Missing Data

While all participants had 16 or more (of 21) completed daily reports, many participants (48.5%) were missing at least one daily report of measures. Yet, missing scores arose on different days across participants and were relevant for different participants, with ~5% of participants missing daily reports across most daily reports. Without a data imputation approach, repeated measures ANOVA or structural equation modeling approaches would lose many available participants and their relevant observations for tests. Further, Little's test suggested that assumptions that data was missing at random were violated for this sample.[2] Hence, we preferred to avoid imputing data if possible. Given the large number of overall observations for participants (*n* participants = 132; *n* observations = 2,663), we selected hierarchical linear modeling (HLM) as a tool for hypothesis tests. HLM uses all available lower-level data for modeling, such as daily reports nested within participants, so long as higher-level data—here,

[2] Little's test—a test for whether data is missing at random—was conducted for our measure of meaning across Study Waves. This test was significant, $\chi^2(834) = 962.36$, $p = .001$, showing that assumptions of data missing completely at random (MCAR) were violated. Similarly, Little's test was conducted for our measure of hopefulness across Study Waves. This test was also significant ($\chi^2(834) = 1028.68$, $p < .001$).

measures like age and gender—are available (Osborne, 2000). Hence, our models below retain all participants and use all available data across time points.

Preliminary Analyses

Correlations among measures collapsed across days are shown in Table 2. As can be seen, these positively valenced feelings were generally positively related. Intraclass correlations (ICCs) determined whether associations among day-to-day measures nested within participants pointed to the appropriateness of multilevel tests like HLM. ICCs that are near zero would point to concerns for the appropriateness of a multilevel modeling approach. ICC for the presence of meaning (ICC = .50) was appropriately high for planned HLM analyses. Relatedly, ICCs were deemed appropriately high for daily reports hopeful (ICC = .53), excited (ICC = .43), happy (ICC = .41), energetic (ICC = .40), and confident (ICC = .51).

Hierarchical Linear Models

Table 3 shows the fixed effects of models predicting daily meaning in life. Model 1 showed that the linear effect of time was not significant for reports of daily meaning—participants meaning in life did not increase or decrease over time. Daily reports of hope were significantly and positively associated with reports of daily meaning in life (Model 2). When daily hope was higher, daily meaning in life was as well. Comparing change in model fit given the addition of hope, suggested that the inclusion of hope significantly improved global model fit, $\Delta\, df = 1$, $\Delta\, \chi^2 = 414.98$, $p < .001$.

Model 3 showed that each daily report of positive affect (including excited, happy, energetic, confident) significantly and positively predicted daily meaning in life. Lastly, Model 4, including daily hope alongside other daily measures of positive affect showed that the significant and positive contribution of each daily report of positive affect remained significant.

Comparing Models 3 (positive affect without hope) and 4 (positive affect and hope) suggested the addition of hopeful significantly improved global model fit, $\Delta df = 1$, $\Delta \chi^2 = 50.79$, $p < .001$.

Brief Discussion, Study 3

Feeling hopeful contributed to daily meaning in life even controlling for other discrete positive emotions and with repeated measures over three weeks. These results suggest that in everyday life, feeling hopeful shares a link to the experience of meaning that is independent of other positive feelings. Study 4 aimed to replicate these findings using a U.S.-based sample over 5 waves.

Study 4

A short-term longitudinal design tracked the association between hope, positive affect, and meaning in life across five time points in a U.S. college student sample. We predicted that hope would predict meaning in life, across time points, above and beyond other positive emotions. Previous research has suggested that positive affect does not show cross-time effects on meaning in life (King et al., 2006; Study 3, over a 2-year period). We predicted that hope would significantly predict meaning in life, over time. In this study, we tested both individual feelings of hope compared to other individual positive emotions and global hope compared to a positive emotion composite.

Method

Participants

Participants ($N = 301$) were recruited through an Introduction to Personality class. Participants were required to complete the surveys for class credit and were given the option to consent to have their data used as research. The sample reflects the student who so consented.

Participants were ages 18 – 52, $M(SD)_{age}$ = 20.51 (2.77), 33.6% men, 59.8% women, and 2.4% transgender, gender queer, or another gender identification (13 did not report). Most participants identified as White/Caucasian (73.1%; 8% Black/African American, 6% Asian/Asian-American, 3.3% Hispanic/Latiné, 3.3% other, 0.7% Middle Eastern/Arab, 0.3% Native American, 0.3% Pacific Islander, where 15 did not report).

Procedure and Measures

Five waves of data were collected over a semester (see Table 3 for sample size per wave). Waves occurred at approximately 3-week intervals. In each wave, participants completed measures of positive emotions (from Study 3; happy, hopeful, confident, excitement, energetic), global hope, and meaning in life (from Study 1).

Analytical Plan

Analyses paralleled Study 3. Preliminary analyses included bivariate correlations across study measures, and tests of ICCs for each measure across time points. Hypotheses tests include: first, a series of hierarchical linear models that tested between-person differences in meaning in life at the individual emotion level. Second, a series of hierarchical linear models that tested between-person differences in meaning in life *one wave later*, given demographic factors; the influence of hope, but not other measures of positive emotion, on meaning; the influence of other positive emotions, but not hope, on meaning; and the influences of hope alongside other positive emotions for meaning. For each series of hierarchical linear models, deviance tests were conducted between models to determine if the addition of hope significantly improved model fit. The models were completed once with the hopeful item and each positive emotion separately (found in the Supplement), and once with the global hope measure and positive affect as a composite score.

Results

Preliminary Analyses

Table 4 presents descriptive statistics for Study 4. Correlations collapsed across waves are show in Table 5. Across all measures, reports of meaning were positively related to positive affect and global hope. ICCs (single measures) were computed for meaning in life (ICC = .83), global hope (ICC = .76), and feelings of hope (ICC = .57), happiness (ICC = .50), excitement (ICC = .51), energetic (ICC = .53), and confidence (ICC = .56).

Hierarchical Linear Models

Global Hope

Table 6 shows the fixed effects models on meaning in life. Model 1 suggests a significant positive effect of time on meaning in life (meaning in life generally increased across the five time points). Model 2 found that global hope significantly and positively predicted meaning in life. Model 2 significantly improved model fit from Model 1, $\Delta df = 1$, $\Delta \chi^2 = 219.37$, $p < .001$. Model 3 suggests that the positive affect composite positively predicted meaning in life. Finally, Model 4 suggests that both global hope and the positive affect composite significantly predicted meaning in life. A deviance test, comparing change in model fit when global hope was added following positive affect composite measures, confirmed that the inclusion of global hope significantly improved global model fit, $\Delta df = 1$, $\Delta \chi^2 = 145.01$, $p < .001$.

In addition, models computed to test global hope and the positive affect composite as predictors of meaning in life, one wave later. Table 7 shows the fixed effects models on meaning in life, one wave later. While there was no effect of time on meaning in life (in Model 1), global hope was a significant positive predictor of meaning in life one wave later (Model 2) and a deviance test confirmed that the inclusion of global hope significantly improved model fit from

Model 1, $\Delta df = 1$, $F = 26.59$, $p < .001$. The positive affect composite was not a predictor to meaning in life one wave later (Model 3), and, when global hope was included, global hope, but not the positive affect composite, significantly predicted greater meaning in life one wave later (Model 4). A deviance test, comparing change in model fit when global hope was added following positive affect composite measures, confirmed that the inclusion of global hope significantly improved global model fit, $\Delta df = 1$, $F = 23.84$, $p < .001$.

Models with emotion items examined separately are in the Supplement. These models replicate Study 3 and the Study 4 global hope model described above. Even the single item of hopeful feelings significantly predicted meaning in life, not only in the same wave but one wave later (see Supplement).

Brief Discussion, Study 4

Study 4 results build on the relation between hope and meaning over a semester of five waves. Not only did hope matter over and above other positive feelings (replicating Study 3) but hope uniquely predicted meaning in life across time. These results support the contention that the future-oriented quality of hope renders it especially relevant to the experience of meaning in life.

Study 5

Past research suggests that positive affect inductions enhance meaning in life (e.g., King et al., 2006). Because positive feelings tend to be experienced together, we reasoned that this effect may be explained by the extent to which positive mood inductions foster the feeling of hope. Thus, in an experiment, we randomly assigned participants to cheerful, sadness, or neutral affect inductions. They then rated their emotions and global meaning in life and its facets (purpose, coherence, and significance). We expected the cheerful condition to enhance meaning in life relative to the other two conditions. More importantly, we sought to probe whether this

condition effect would be explained by feeling hopeful (versus other positive emotions). We tested these predictions for global meaning in life as well as purpose, coherence, and significance. The study was pre-registered: https://osf.io/gux6p. G*power was used to determine the sample size for a one-way ANOVA, for a small effect size (f = .1), with 80% power at .05 error probability, and 3 groups: a sample size of 969 participants would be required.

Method

Participants

Participants (N = 995) were recruited from Cloud Research. Participants were required to be 18 years or older and living in the U.S. Participants were excluded for failing an attention check question (n = 29) or not completing the survey (n = 25). For the final sample (N = 941; 50.5% women, 49.4% men, 1 reported an alternate identification; 1% were transgender; 79.5% White, 11.1% Black or African American, 6% Eastern Asian, 5.5% Hispanic or Latiné, 1.4% Asian Indian, 0.7% American Indian or Alaska Native, 0.3% Native Hawaiian or Pacific Islander, and 0.7% other), age ranged from 18-89, *M(SD)* = 41.33(12.63).

Procedure and Measures

Participants first completed a measure of morningness-evenningness dispositions in order for all participants to start at the same neutral state. They were then assigned randomly to one of three conditions: cheerful (n = 309), sadness (n = 316), or neutral (n = 316).

For each condition, participants watched a 2-minute video to induce mood (happy puppies, dogs close to end of life, and brick building tutorial, respectively). Following, participants rated their current feelings, including the same positive emotions from previous studies (happy, excited, energetic, confident; PA; α = .90), hopeful, and negative emotions (worried/anxious, stressed, sad, angry, frustrated, depressed/blue; NA; α = .87). Finally,

participants reported on current meaning in life, using the measure from Study 2, to assess global meaning (α = .92), purpose (α = .89), coherence (α = .82), and significance (α = .89).

Results

Correlations among all outcomes are in Table S4.

Manipulation Checks

As Figure 1 shows**,** conditions affected mood and hopeful feelings as expected. The cheerful condition reported greater positive affect compared to the sadness ($p < .001$) but not neutral ($p = .131$) condition, $F(2, 938) = 47.67$, $p < .001$, $\eta_p^2 = .092$. The sadness condition reported greater negative affect compared to the cheerful ($p < .001$) and neutral conditions ($p = .006$), $F(2, 938) = 48.57$, $p < .001$, $\eta_p^2 = .094$. Finally, the cheerful condition reported greater hope compared to the sadness ($p < .001$) but not neutral ($p = .200$) condition, $F(2, 938) = 21.04$, $p < .001$, $\eta_p^2 = .043$.

Primary Analyses

In contrast to past research and predictions, condition did not significantly affect global meaning in life, $F(2, 938) = 1.88$, $p = .153$, $\eta_p^2 = .004$, purpose, $F(2, 938) = 0.56$, $p = .571$, $\eta_p^2 = .001$, coherence, $F(2, 938) = 0.72$, $p = .489$, $\eta_p^2 = .002$, or significance, $F(2, 938) = 1.28$, $p = .277$, $\eta_p^2 = .003$. Although, as Figure 2 shows, generally small differences were in the expected direction, none were significant.

The unexpected lack of condition effect does not rule out probing the roles of hope and positive affect in meaning in life across and within conditions. We tested for potential indirect effects of condition on meaning, via hope and positive affect. As the cheerful condition significantly differed only from the sadness condition on hope and positive affect, we first focused on these conditions (dropping the neutral condition). First, regarding global meaning in

life, we tested for an indirect effect of condition on meaning in life via feelings of hope, using PROCESS MACRO for SPSS (Model 4, Hayes, 2017). The indirect effect of condition on meaning in life through hope was significant, *b(SE)* = 0.32(.06), *95% CI* [0.21, 0.44], such that the cheerful (versus sadness) condition reported greater feelings of hope, *b(SE)* = 0.90(.15), *95% CI* [0.61, 1.18], which in turn predicted greater meaning in life, *b(SE)* = 0.36(.03), *95% CI* [0.30, 0.42].

To examine whether this effect would persist accounting for positive affect, we tested hopeful feeling and positive affect as parallel mediators. As Figure 3 shows, both hope and positive affect showed relatively equal, independent indirect effects. Condition led to higher hope and higher positive affect, which each, in turn, predicted higher global meaning in life.[3] Similarly, we tested for indirect of effects of condition on the facets of meaning (purpose, coherence, and significance). Results were similar to Figure 3, with indirect effects of both hope and positive affect and all paths being significant, and confidence intervals overlapping considerably (Table S5). Analyses including comparisons with the neutral condition are in the Supplement.

Brief Discussion, Study 5

Counter to past research, a positive mood induction did not lead to higher meaning in life, including global meaning as well as its 3 facets (purpose, coherence and significance). Possible reasons for this lack of effect may be differences in samples, differences in mood induction modality, and dependent measures. Previous research has generally employed the presence of meaning subscale from the MLQ and this study used the TMS. Despite this lack of significant

[3]We also computed serial mediation models (PROCESS Macro Model 6). We compared models with either hope leading positive affect or positive affect leading to hope. Both models found support (See Supplement p. 8 for results).

condition effect on outcomes, analyses of the indirect effects of condition on meaning in life suggest that both hope and positive affect explained an indirect relation between condition and meaning in life. Like the previous studies, results suggest that hope is a unique predictor of meaning even accounting for positive affect.

Study 6

Finally, we sought to the examine whether hope would enhance meaning in life in an experiment testing the effect of a hope (versus hopeless) induction on meaning in life. We predicted that those in the hopeful (versus hopeless) condition would report greater meaning in life. We tested these predictions for global meaning in life as well as purpose, coherence, and significance. The study was pre-registered: https://osf.io/efptk.

A previous study used the same manipulations and these produced differences in meaning in life (Edwards, 2024). The smallest effect size produced was $d = .20$. Using G*power, to detect an effect size of $d = 0.20$, with 80% power and an error probability of 0.05, it suggests a sample size of $N = 788$. We sough to recruit > 800 participants to allow for data exclusion and potential smaller effect sizes.

Method

Participants

Participants ($N = 827$) were recruited from Connect by Cloud Research (Hartman et al., 2023). Participants were required to be 18 years or older and living in the U.S. Participants were excluded for failing an attention check question ($n = 126$) or not completing the survey ($n = 23$). For the final sample ($N = 678$; 49.4% women, 50.4% men, 1 identified as nonbinary; 1.2% were transgender; 73.6% White, 12.5% Black or African American, 5.5% Asian, 14.5% Hispanic or

Latiné, 1.0% American Indian or Alaska Native, 0.3% Native Hawaiian or Pacific Islander, and 0.4% other), age ranged from 18-82, *M(SD)* = 45.83 years (15.90).

Procedure and Measures

As in Study 5, participants first completed a measure of morningness-eveningness. They were then assigned randomly to hopeful (n = 298) or hopeless (n = 380) conditions. In each condition, participants read an article about climate change that either supported that there was still hope regarding climate change or that climate change is hopeless. Following, participants reported on how happy and hopeful they felt on a scale from 1 (*not at all*) to 7 (*extremely*). They also reported on agency (2 items, α = .89) and pathways (2 items, α = .85) on a scale from 1 (*definitely false*) to 8 (*definitely true*) (Snyder et al., 1991). Finally, participants reported on global meaning in life (α = .86), purpose (α = .70), coherence (α = .72), and significance (α = .82), using two items for each. Ratings were from 1 (*strongly disagree*) to 7 (*strongly agree*).

Results

Manipulation Checks

As Figure 4 shows, the hopeful (versus hopeless) condition reported greater feelings of hope, $t(669.03) = 8.20$, $p < .001$, $d = 0.62$, and happiness, $t(665.23) = 6.38$, $p < .001$, $d = 0.49$. Condition did not affect agency, $t(593.25) = 0.48$, $p = .632$, $d = 0.04$, or pathways, $t(600.64) = 0.37$, $p = .358$, $d = 0.03$. Therefore, condition effectively induced hopeful feelings but not agency/pathways. Controlling for happiness, the effect of condition on hopeful feelings remained significant, $F(1, 667) = 24.76$, $p < .001$, $\eta_p^2 = .036$. However, controlling for hopeful feelings, the effect of condition on happiness was no longer significant, $F(1, 667) = 0.14$, $p = .709$, $\eta_p^2 < .001$.

Primary Analysis

Counter to predictions, condition did not affect any of the outcomes of interest. For global meaning in life, $t(589.43) = 1.22$, $p = .222$, $d = 0.10$. Similarly for purpose, coherence, and significance, *p's* > .343. Nevertheless, as in Study 5, we examined hope and happiness as mediators of the indirect effect of condition on meaning.

First, regarding global meaning in life, as in Study 5, the indirect effect of condition on meaning through hope was significant, *b(SE)* = 0.35(.06), *95% CI* [0.24, 0.47], such that the hope (versus hopeless) condition led to greater hope, *b(SE)* = 1.04(.13), *95% CI* [.79, 1.30], which in turn predicted greater meaning, *b(SE)* = 0.33(.04), *95% CI* [0.26, 0.40]. Similar results emerge for happiness, *b(SE)* = 0.25(.05), *95% CI* [0.15, 0.35], such that the hope (versus hopeless) condition led to greater happiness, *b(SE)* = 0.75(.12), *95% CI* [0.52, 0.99], which in turn predicted greater meaning, *b(SE)* = 0.32(.04), *95% CI* [0.24, 0.40]. However, as Figure 5 shows, when both hope and happiness were entered as parallel mediators, only the indirect effect of condition through hope was significant, *b(SE)* = 0.27(.08), *95% CI* [0.13, 0.43]. For happiness, *b(SE)* = 0.07(.05), *95% CI* [-0.03, 0.19].

We conducted similar analyses for each facet of meaning in life. As in Study 5, the other two facets were entered as covariates. Significant indirect effects emerged only for purpose. The indirect effect of condition on purpose through hope was significant, *b(SE)* = 0.17(.03), *95% CI* [0.11, 0.25], such that the hope (versus hopeless) condition led to greater hope, *b(SE)* = 1.09(.12), *95% CI* [0.85, 1.33], which in turn predicted greater purpose, *b(SE)* = 0.16(.02), *95% CI* [0.11, 0.21]. The same was found for happiness as a mediator, *b(SE)* = .11(.03), *95% CI* [.06, .16], such that hope (versus hopeless) led to greater happiness, *b(SE)* = .79(.12), *95% CI* [.56, 1.02], which in turn predicted greater purpose, *b(SE)* = .14(.03), *95% CI* [.09, .19]. As was the case for global meaning in life, as Figure 6 shows, when both hope and happiness were entered

as parallel mediators, only an indirect effect of condition through hope emerged, *b(SE)* = 0.16(0.06), *95% CI* [0.05, 0.28]. For happiness, *b(SE)* = 0.02(.04), *95% CI* [-0.07, 0.10].

Brief Discussion, Study 6

Study 6 aimed to provide experimental evidence of the relation between hope and meaning in life. Similar to Study 5, the manipulation did affect hope but did not affect meaning in life or its facets. Nevertheless, like Study 5, mediation analyses provided support for predictions. The hopeful condition predicted greater meaning in life via greater reported feelings of hope. Importantly, condition did not predict meaning via reported feelings of happiness.

General Discussion

Meaning in life is a fundamental aspect of human functioning and a key resource for coping. The present studies uncovered links between feeling hopeful and this important experience. Across six studies, hopeful feelings consistently predicted meaning in life, above and beyond other positive emotions and positive affect. Studies 1-2 demonstrated that hopeful feelings predicted the experience of meaning independent of typical measures of the cognitive aspects of hope. Daily hopeful feelings predicted daily meaning in life (Study 3) and hopeful feelings prospectively predicted meaning in life (Study 4), even accounting for other positive emotions. Although experimental studies did not demonstrate that mood and hope inductions led to higher meaning in life, indirect effects suggest the role of hope in meaning. In Study 5, hope independently explained the relation between a cheerfulness induction and meaning in life, controlling for other positive emotions. Similarly, in Study 6, it was through hopeful feelings, that a hope manipulation promoted meaning in life. Importantly, in the present studies, other positive emotions remained significant predictors of meaning in life, suggesting the potential of taking a discrete emotion approach to the link between each positive feeling and meaning. As a

step in this endeavor, these studies suggest a unique role for hope in the experience of meaning in life.

Hopeful feelings versus cognitions

Studies 1 and 2 compared the contribution of hopeful feelings to agency/pathways on meaning in life. Hopeful feelings remained a significant contributor to meaning even accounting for hopeful congitions. The emotional component of hope is separable from beliefs about goal attainment and independently predicts meaning in life. Both of these aspects of hope are clearly relevant to meaning. However, there may be times when hopeful feelings function, even when goal pursuit and goal-related action are unavailable. There are times that we might feel hopeful, when we can no longer do anything at all to reach a goal, such as after submitting a job application or waiting to hear back about the cancer treatment. Often, in these periods of waiting, all one can do is hope—we feel hopeful separate from any agentic steps left to take (Edwards et al., 2024). Thus, future research should continue to examine if and when the multiple elements and processes of hope function and perhaps have unique consequences. Alternatively, there may be times when feeling hopeful falls short. When goal-related action is called for, hoping for the best may be less than optimal. Understanding the consequences of hoping for the best, with or without taking action, is another direction for future research.

Hope versus other positive emotions

Across all studies, we consistently pitted the contribution of hope to meaning in life against other positive emotions. In many cases, hope had a stronger contribution to meaning in life compared to the other positive emotions. Moreover, accounting for hope substantially reduced the role of positive affect in meaning in life (Studies 1-2). Unlike past research on awe (Rivera et al., 2020), positive affect did not account for the role of hope in meaning in life.

Similarly, in Studies 3- 4, the addition of hope to models containing other positive feelings consistently increased model fit.

A truly comprehensive model of the relations among complex positive emotions and meaning in life might map out the various ways these feelings, together, promote a sense of meaningfulness and the potentially unique pathways through which they do so. Previously we reviewed the reasons hopeful feelings were a likely candidate for enhancing meaning in life, including their relevance to long-term goals, their future-orientation, and their accessibility during difficult times. Probing these various pathways from hope to meaning in life would help illuminate the specific ways hopeful feelings contribute to meaning in life. Similarly, research might seek to identify the conceptual (and empirical) links from other emotions to meaning. As already noted, one way awe contributes to meaning in life is through positive affect. Other complex emotions might have specific relevance to meaning-related experiences, such as social relationships (gratitude) or self-continuity (nostalgia).

People are motivated to feel like life is meaningful (King & Hicks, 2021) and emotions can provide affirming information in this regard. As argued previously, hope may be especially important in affirming life's meaning during difficult times. Indeed, positive emotions can counter the negative consequences of negative affective processes (e.g., depression; Garland et al., 2010). Yet many positive emotions, such has happiness and contentment, are harder to access in the context of difficult times (such as depression, Vanderlind et al., 2020). In contrast, feeling hopeful may be an available positive experience even at such times, allowing for the maintenance of meaning regardless of the vicissitudes of life. Hope may be considered an internally generated positive emotion that is activated by negative experiences. Future research might examine individual differences that predict this tendency for hope to emerge in difficult

times. The durability of hopeful feelings suggests their potential role in resilient coping. Future research might test whether hope (versus other positive feelings) is more likely to contribute to adaptive coping (and meaning in life) in the specific context of negative life events.

Indeed, it may be that in especially difficult contexts hope is an especially important feeling in the facilitation and maintenance of meaning. Amid experiences of suffering and difficult life events, meaning in life is threatened (Edwards & Van Tongeren, 2021). Hope may help restore meaning during such times. It may be that hope has a stronger relation to meaning during difficult life events or among those who are chronically lower in meaning in life. During life difficulties, the feeling of hope may guide meaning-making efforts toward a positive resolution, telling us that something better is possible.

Finally, it is worth considering whether there might be times when hope would not benefit meaning in life. “False hope” is the notion that hope is based on false pretenses—one is hoping for something that can never be. Of course, in the moment, it is difficult to know if one’s hope is false or not. People who maintain hope in face of terrible odds up are often viewed as heroic. However, there are certainly times when a hoped-for future is never attained. When a doctor says there is no hope and one has but a few months to live, is the person holding on to hope still gaining meaning over the person who accepts their fate and lives life to the fullest in their final days? The complexities of hoping under different situations remains a rich area for future research.

Experimental Results

In Studies 5-6, we attempted to establish causal links between hope and meaning in life. Clearly, these efforts failed. Although in both studies, manipulation checks suggested the manipulations were successful, in neither study did the manipulations affect meaning in life.

Notably, in Study 5, we had reasoned that a positive affect induction might enhance meaning in life because it likely inspired a variety of positive feelings including hopefulness. In a sense, although the failure of the manipulation to enhance meaning in life is a notable weakness, results supported this reasoning. The failure of the hope manipulation in Study 6 to directly enhance meaning in life is, perhaps, more problematic. Indeed, the results are consistent with the conclusion that hope (at least as induced in Study 6) does not play a causal role in the experience of meaning in life. As noted previously, this manipulation was found to enhance all of the facets of meaning in life in a previous dataset (Edwards, 2024). However, in this case, it did not affect meaning in life or its facets. One possible explanation for this failure is that Study 6 data were collected in temporal proximity to hurricane season in the U.S. and the notion that climate change is hopeless may have been more believable than the notion that there is still hope. In any case, it is important to bear in mind that mediation analyses in Study 6 suggest that to the extent that the manipulations induced feelings of hopefulness (versus hopelessness) did relate positively to global meaning in life and purpose. In this regard, a potential explanation for these findings may be that hopeful people, at a dispositional level, experience greater meaning.

Additionally, one reason induced hope did not directly affect meaning in life as predicted may be a lack of ecologically validity. Although experimentally inducing hope/hopelessness provides important levels of control, hope may be most likely to support meaning in life in during challenging times or when hope occurs naturally. As such, testing the causal role of hope in the experience of meaning in life may require considering more real life circumstances or more powerful manipulations. Moreover, future research could benefit from comparing hope to other positive emotions, experimentally.

Limitations

The present studies feature notable strengths. We studied U.S. and Chinese samples and considered relevant covariates. We employed diverse methodologies, including cross-sectional, daily report, longitudinal, and experimental methods. We used varied measures of the variables of interest. Still, limitations warrant note. U.S. samples were majority White and as such the generality of our findings may be ambiguous. Hope, affect, and meaning in life measures were all self-report. Although commonly researchers agree that the best way to measure how people are feeling is to ask them, it is possible that measures beyond self-report would demonstrate stronger differences between hope and positive affect. For example, psychophysiological measures or brain imaging techniques might be useful in distinguishing hopeful feelings from other positive emotions. In addition, observer or peer reports of meaning in life might be useful in disentangling the links between hedonic experience (happiness) and meaning in life. All studies were conducted online. Certainly, continuing to develop manipulations of hopeful feelings is an important goal for research. Moreover, how hope inductions may be beneficial in clinical interventions, and for whom, warrants future research.

Conclusion

Feeling hopeful contributes to the sense that life is meaningful, independent of other positive feelings and more cognitive aspects of hope. Unlike other positive feelings, hope predicted greater meaning in life over time. Although a variety of positive feelings may be contributors to meaning in life, the present studies support the notion that hope shares a unique relation to this important experience.

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Table 1. Correlations, Study 1

	1.	2.	3.
1. Positive affect	-		
2. Hopeful feelings	.61	-	
3. Agency/pathways	.50	.69	-
4. Meaning in life	.37	.54	.55

Note. All correlations are significant, $p < .001$.

Table 2. Correlations (collapsed across all time points), Study 3

	1.	2.	3.	4.	5.	6.
1. Day of Completion	--					
2. Presence of Meaning	.00	--				
3. Excited	.03	**.55**	--			
4. Happy	-.04	**.56**	**.71**	--		
5. Energetic	-.03	**.52**	**.57**	**.64**	--	
6. Confident	-.03	**.56**	**.48**	**.58**	**.59**	--
7. Hopeful	-.01	**.60**	**.59**	**.65**	**.57**	.73

Note. Bolded values are significant, $p < .05$. Total observations = 2,663.

Table 3. Fixed Effects of Daily Reports of Positive Affect on Daily Reports of Meaning in Life, Study 3

	Model 1 Person-Level Effects				Model 2 Daily Hope				Model 3 Other Daily Measures of Positive Affect				Model 4 Hope with Other Measures of Positive Affect			
Marginal R^2	.156				.295				.372				.395			
Effect	Est	SE	*d*	*p*	Est	SE	*d*	*p*	Est	SE	*d*	*p*	Est	SE	*d*	*p*
Intercept	2.04	.50	--	.000	1.63	.40	--	.000	1.12	.37	--	.003	1.14	.36	--	.002
Level-2 Effects																
Age	.00	.01	.00	.873	.00	.01	.00	.890	.00	.01	-.01	.702	.00	.01	.01	.721
Gender	.09	.14	.13	.497	-.01	.11	-.02	.924	.07	.10	.13	.507	.03	.10	.07	.738
Baseline Meaning	.21	.07	.29	.004	.18	.06	.34	.002	.19	.05	.36	.000	.18	.05	.37	.000
Baseline Positive Affect Composite	.39	.08	.54	.000	.17	.06	.33	.005	.12	.06	.22	.004	.08	.05	.17	.131
Level-1 Effects																
Time	.00	.01	.00	.918	.00	.00	.00	.799	.00	.00	.00	.578	.00	.00	.00	.622
Hopeful	--	--	--	--	.37	.02	.72	.000	--	--	--	--	.15	.02	.31	.000
Excited	--	--	--	--	--	--	--	--	.15	.02	.29	.000	.13	.02	.27	.000
Happy	--	--	--	--	--	--	--	--	.12	.02	.23	.000	.10	.02	.19	.000
Energetic	--	--	--	--	--	--	--	--	.10	.02	.19	.000	.09	.02	.18	.000
Confident	--	--	--	--	--	--	--	--	.18	.02	.35	.000	.12	.02	.24	.000

Note. Number of observations = 2,663. For gender, women = 1; men = 0. Time = day of participation. Effect size (*d*) was calculated as the unstandardized estimate (b) divided by the square root of the summed level-1 error and variance of the grouping variable (random effect by subject). Marginal R^2 is the pseudo-R^2 estimate for each model.

Table 4. Descriptive Statistics of Meaning and Life, Global Hope, and Positive Affect, Study 4

Wave	Presence of Meaning	Global Hope	Positive Affect Composite	Emotions					*n*
				Excited	Happy	Energetic	Confident	Hopeful	
1	4.70(1.37)	3.91(0.79)	4.39(1.09)	4.21(1.53)	5.01(1.26)	3.70(1.65)	4.62(1.60)	4.94(1.42)	274
2	4.79 (1.29)	3.98(0.80)	4.43(1.18)	4.25(1.57)	4.94(1.44)	3.78(1.61)	4.66(1.61)	5.01(1.44)	267
3	4.96(1.30)	4.02(0.76)	4.51(1.14)	4.57(1.60)	5.09(1.34)	3.81(1.70)	4.68(1.60)	5.13(1.37)	264
4	4.90(1.31)	3.99(0.78)	4.40(1.24)	4.43(1.56)	4.94(1.42)	3.80(1.70)	4.59(1.64)	4.98(1.56)	264
5	4.97(1.38)	4.04(0.81)	4.44(1.27)	4.39(1.72)	4.98(1.36)	3.75(1.67)	4.67(1.58)	5.06(1.72)	251

Note. Mean (Standard Deviation).

Table 5. Correlations collapsed across timepoints, Study 4

	1.	2.	3.	4.	5.	6.	7.
1. Meaning in Life	--						
2. Global Hope	.68	--					
3. Positive Affect Composite	.52	.56	--				
4. Happy	.49	.53	--	--			
5. Excited	.39	.43	--	.59	--		
6. Energetic	.32	.28	--	.50	.57	--	
7. Confident	.48	.55	--	.59	.52	.53	--
8. Hopeful	.51	.67	.64	.53	.52	.44	.63

Note. All correlations are significant, $p < .001$. Total observations = 1,325.

Table 6. Fixed Effects of Reports of Global Hope and Positive Affect Composites on Reports of Meaning in Life, Study 4

	Model 1 Person-Level Effects			Model 2 Global Hope			Model 3 Positive Affect Composite			Model 4 Global Hope & Positive Affect		
Marginal R^2	.020			.202			.082			.242		
Effect	Est.	SE	*p*	Est.	SE	*p*	Est.	SE	*p*	Est.	SE	*p*
Overall Intercept	3.56	.55	< .001	1.40	.45	.002	2.49	.50	< .001	1.08	.43	.013
Level 2 Effects												
Age	.05	.03	.073	.03	.02	.098	.04	.02	.056	.03	.02	.078
Gender	.23	.15	.141	.17	.12	.145	.23	.14	.089	.18	.11	.103
Level 1 Effects												
Time Intercept	.05	.01	< .001	.05	.01	.001	.05	.01	< .001	.04	.01	.001
Global Hope	--	--	--	.64	.04	< .001	--	--	--	.53	.04	< .001
PA mean	--	--	--	--	--	--	.26	.02	< .001	.16	.02	< .001

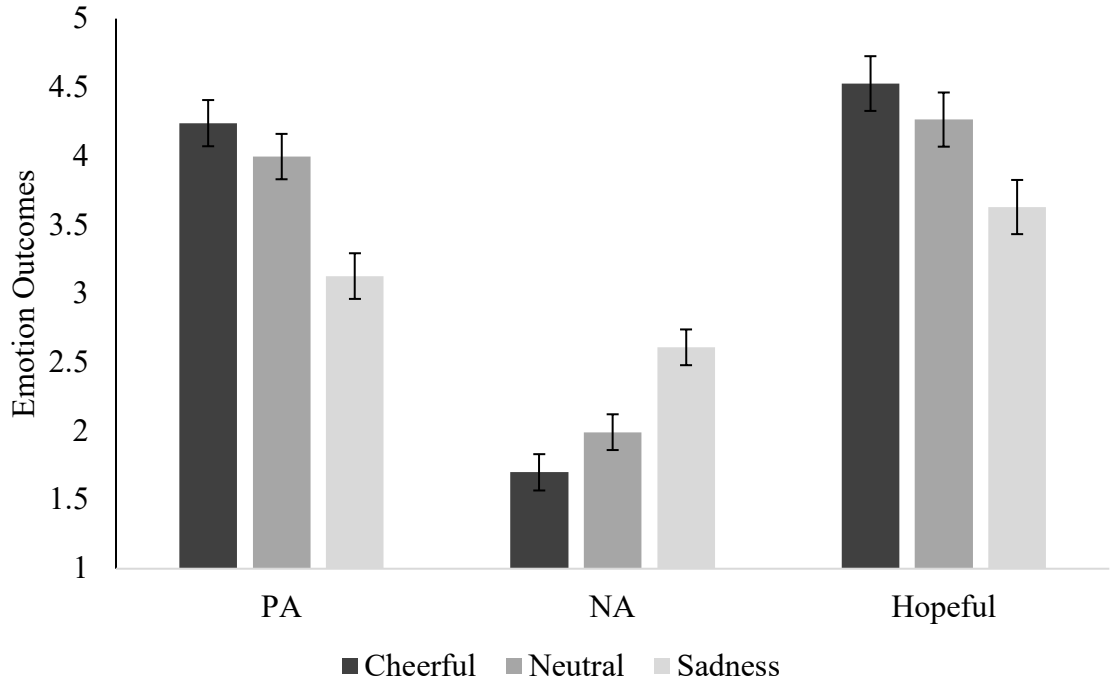
Note. Number of observations = 1,271. For gender, women had the higher value. Time was measured in wave of participation.

Table 7. Fixed Effects of Reports of Global Hope and Positive Affect on Reports of Meaning in Life, One Wave Later, Study 4

	Model 1 Person-Level Effects			Model 2 Global Hope			Model 3 Positive Affect Composite			Model 4 Global Hope & Positive Affect		
Marginal R^2	.727			.734			.728			.735		
Effect	Est.	SE	*p*	Est.	SE	*p*	Est.	SE	*p*	Est.	SE	*p*
Overall Intercept	.65	.18	< .001	0.23	.20	.235	0.55	.19	.004	0.22	.20	.263
Level 2 Effects												
Age	.01	.01	.347	.01	.01	.387	.01	.01	.315	.01	.01	.381
Gender	.03	.05	.595	.03	.05	.564	.03	.05	.671	.03	.05	.551
MIL prior	.86	.02	< .001	.78	.02	< .001	.84	.02	< .001	.78	.02	< .001
Level 1 Effects												
Time	-.03	.02	.188	-.03	.02	.159	-.03	.02	.199	-.03	.02	.161
Intercept												
Global Hope	--	--	--	.20	.04	< .001	--	--	--	.20	.04	< .001
Positive Affect	--	--	--	--	--	--	.04	.02	.099	.01	.02	.795

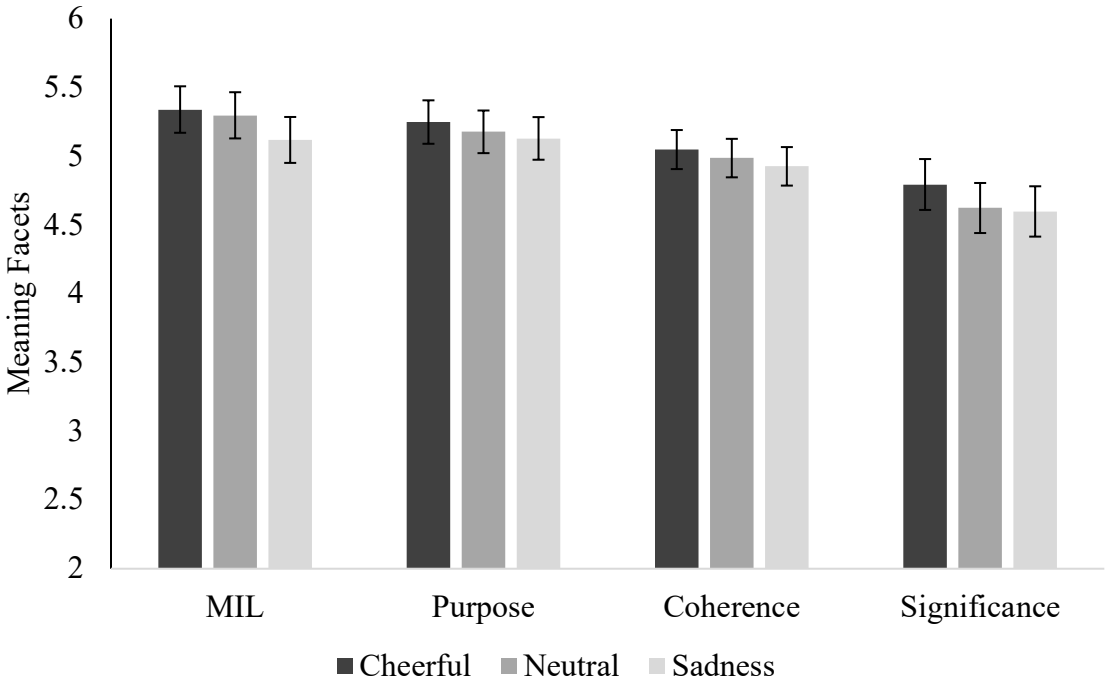
Note. Number of observations = 954. For gender, women had the higher value. Time was measured in wave of participation. MIL = meaning in life.

Figure 1. Manipulation Checks and Condition Effects on Hopeful, Study 5



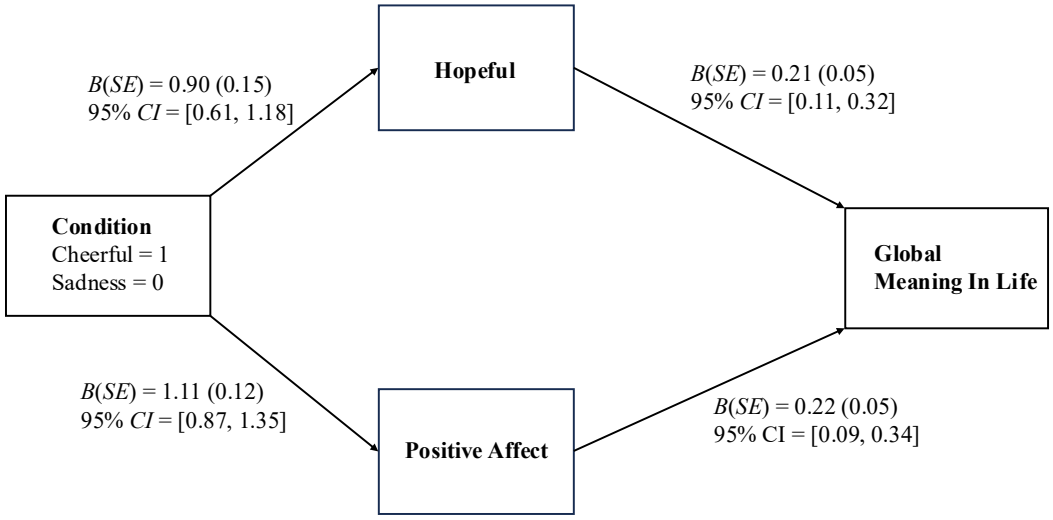
Note. PA = positive affect; NA = negative affect. Error bars represent 95% Confidence Intervals.

Figure 2. Effects of Condition on Global Meaning in Life and Facets, Study 5



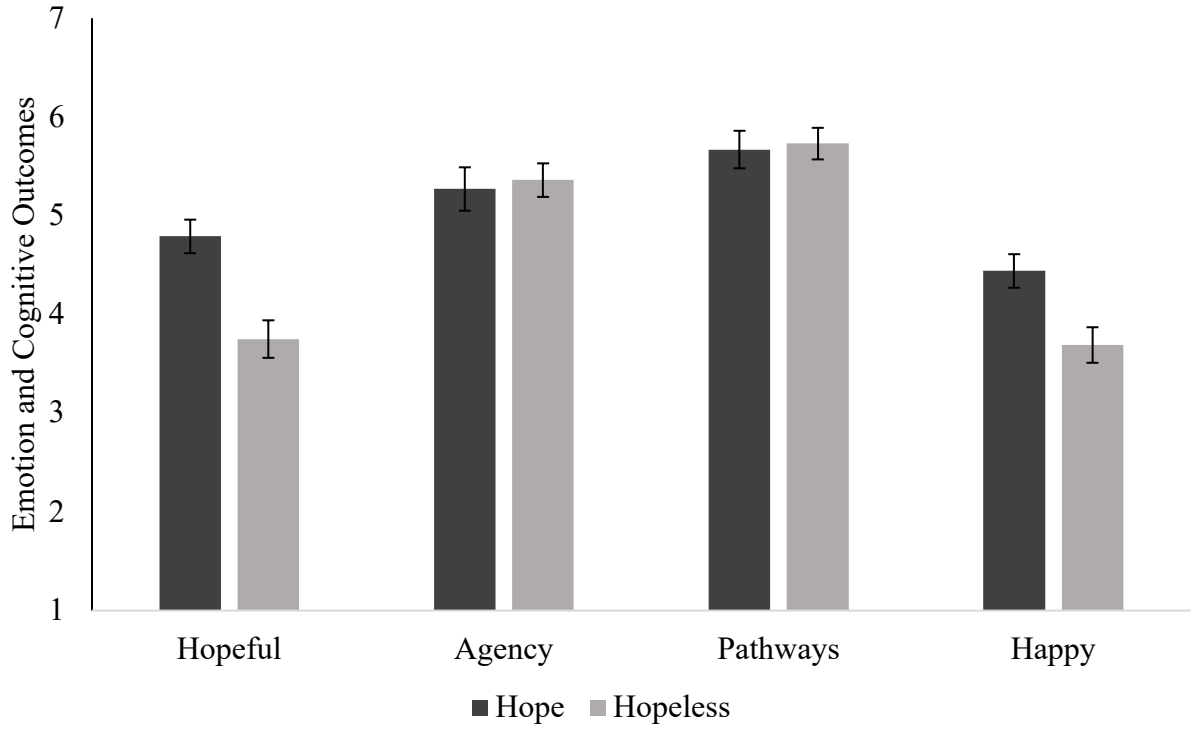
Note. MIL = Global Meaning in Life. Error bars represent 95% Confidence Intervals.

Figure 3. Hope and Positive Affect as Parallel Mediators of Cheerful versus Sadness Condition Effects, Study 5



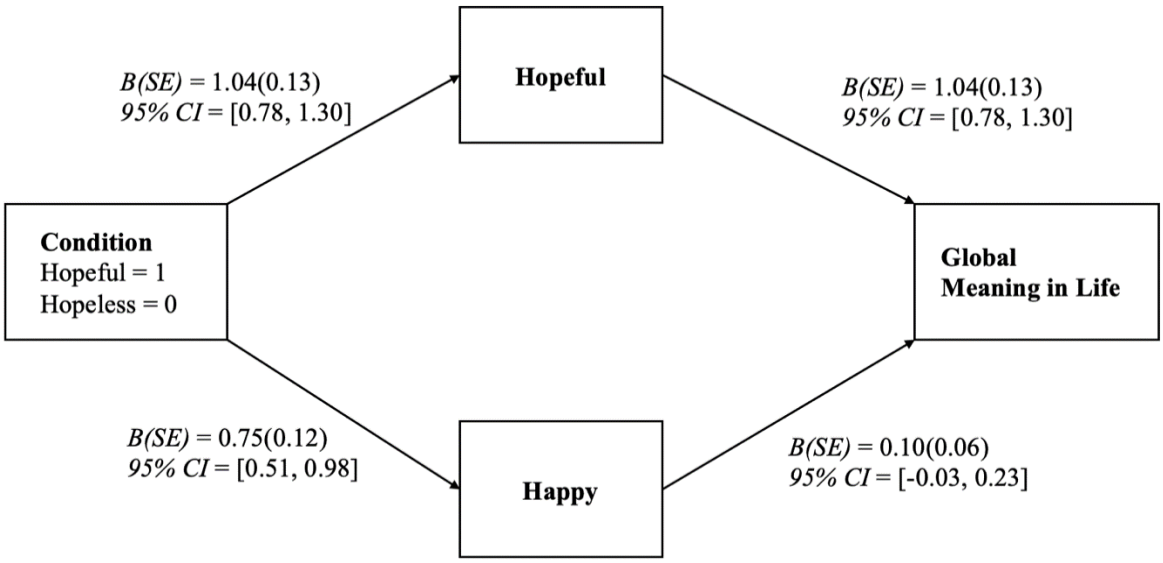
Note. For the indirect effect of condition through hope, *B(SE)* = 0.19(.06), 95% *CI* [.08, .32]. For the indirect effect of condition through postive affect, *B(SE)* = 0.24(.07), 95% *CI* [.10, .40].

Figure 4. Manipulation Checks and Condition Effects on Emotion and Cognitive Outcomes, Study 6



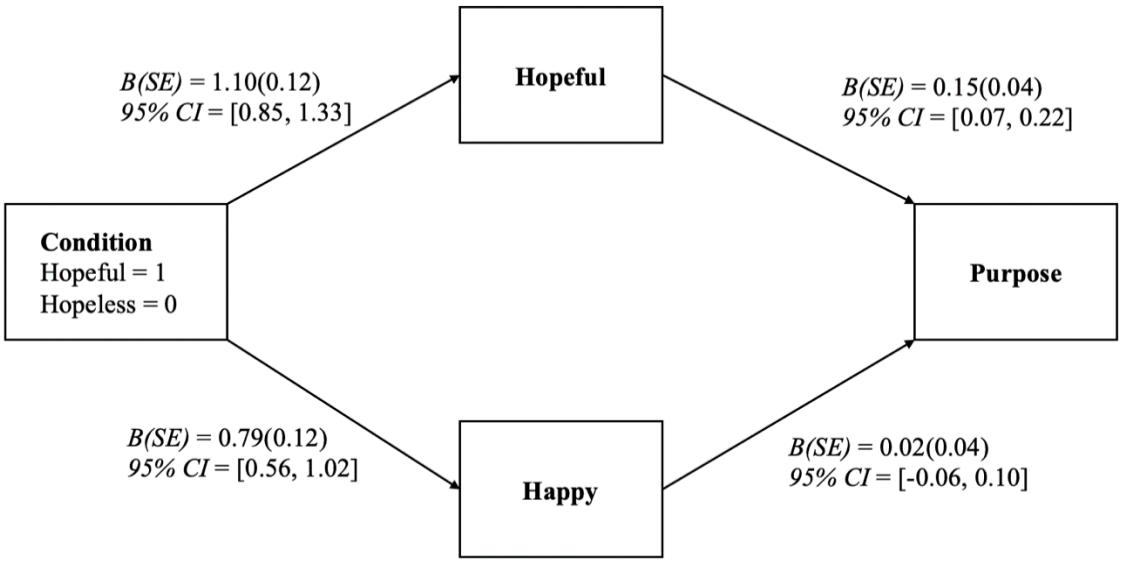
Note. Error bars represent 95% Confidence Intervals.

Figure 5. Hope and Positive Affect as Parallel Mediators of Hope Condition Effects on Meaning, Study 6



Note. For the indirect effect of condition through hope, *B(SE)* = .27(.08), *95% CI* [.13, .43]. For the indirect effect of condition through happy, *b(SE)* = .07(.05), *95% CI* [-.03, .19].

Figure 6. Hope and Positive Affect as Parallel Mediators of Hope Condition Effects on Purpose, Study 6



Note. For the indirect effect of condition through hope, *B(SE)* = .16(.06), *95% CI* [.05, .28]. For the indirect effect of condition through happy, *B(SE)* = .02(.04), *95% CI* [-.07, .10]. Model controls for coherence and significance.