

1-15-2018

Gratitude Predicts Hope and Happiness: A Two-study Assessment of Traits and States

Charlotte vanOyen-Witvliet
Hope College, witvliet@hope.edu

Fallon J. Richie

Lindsey M. Root Luna
Hope College, rootluna@hope.edu

Daryl R. Van Tongeren
Hope College, vantongeren@hope.edu

Follow this and additional works at: https://digitalcommons.hope.edu/faculty_publications

 Part of the [Psychology Commons](#)

Recommended Citation

Repository citation: vanOyen-Witvliet, Charlotte; Richie, Fallon J.; Root Luna, Lindsey M.; and Van Tongeren, Daryl R., "Gratitude Predicts Hope and Happiness: A Two-study Assessment of Traits and States" (2018). *Faculty Publications*. Paper 1464.
https://digitalcommons.hope.edu/faculty_publications/1464

Published in: *The Journal of Positive Psychology*, January 15, 2018. Copyright © 2018 Taylor & Francis.

This Article is brought to you for free and open access by Digital Commons @ Hope College. It has been accepted for inclusion in Faculty Publications by an authorized administrator of Digital Commons @ Hope College. For more information, please contact digitalcommons@hope.edu.

Witvliet, C.V.O., Richie, F.J., Root Luna, L.M., & Van Tongeren, D.R. (2018): Gratitude predicts hope and happiness: A two-study assessment of traits and states. *The Journal of Positive Psychology*.
doi.org/10.1080/17439760.2018.1424924

Gratitude Predicts Hope and Happiness: A Two-Study Assessment of Traits and States

Charlotte vanOyen Witvliet, Fallon J. Richie, Lindsey M. Root Luna, and Daryl R. Van Tongeren

Hope College

Word count: 8271 (main text, references, appendix, footnote) + 620 words (in the tables) = 8891

Acknowledgements: We gratefully acknowledge Shengjie Chen, Allison J. DeMaagd, Carolyn E. Frazier, Katelyn E. Klotz, Brittany Lawson, Sarah Leonard, Nicholas Pikaart, Jamie Rogalski, and Molly Sandquist for their assistance in conducting Study 1, and Nicholas Pikaart for additional assistance with Study 2. We also thank the Howard Hughes Medical Institute for funding support to the second author.

Contact: Charlotte V.O. Witvliet at Hope College, Psychology Department, 35. E. 12th St., Holland, MI 49423; witvliet@hope.edu

Abstract

Gratitude is the appreciation of a gift received; happiness is the enjoyment of a present good; and hope is the desire for a valued future. Two studies investigated gratitude as a predictor of hope and happiness. In Study 1, hierarchical regressions ($N = 181$) revealed that trait gratitude exceeded other constructs (forgivingness, patience, self-control) in predicting trait hope and happiness. In Study 2, we experimentally tested the impact of a gratitude-related writing intervention on state hope and happiness. Participants ($N = 153$) first wrote about a current, meaningful, hoped-for outcome and completed state hope and happiness measures. Participants were randomly assigned to either (a) gratefully remember a past hope that had been fulfilled or (b) a control condition. The grateful remembering condition (vs. control) prompted significant increases in state hope and happiness, commending grateful remembering as a practice that can bolster present happiness and hope for the future.

Word Count: 148

Keywords: gratitude; hope; happiness

Gratitude Predicts Hope and Happiness: A Two-Study Assessment of Traits and States

Gratitude is an experience of abundance, with awareness that one is the recipient of a good gift from a giver (Watkins, Van Gelder, & Frias, 2009). Can awareness of good outcomes already present in one's life uniquely inspire hope for a future good outcome while also enhancing happiness? This idea prompts two related questions: 1) Does trait gratitude predict trait hope and happiness over and above other traits which also have social ramifications across situations—forgiveness, patience, and self-control? 2) Does inducing an episode of gratitude—remembering a past desired outcome that was fulfilled—lead to increased state happiness and hope for a presently desired outcome?

Gratitude, happiness, and hope have positive affective qualities that can occur as states (e.g., feeling grateful, hopeful, or happy in the present moment), and as dispositional traits (e.g., a person who is typically grateful, hopeful, or happy). Yet, gratitude, happiness, and hope are distinct, with different orientations in time: gratitude is oriented toward the past (appreciating a gift and the giver), happiness toward the here and now (enjoying the present), and hope toward the future (yearning for a positive future outcome). Perhaps a focus on evidence that one has experienced a good outcome—such as when one is grateful to have something previously hoped for—will be associated with not only happiness but also hope for what one has not yet experienced, as one positive emotion feeds another.

Empirical studies have examined the relationships among gratitude, hope, and happiness. In developing the dispositional gratitude questionnaire (GQ-6), McCullough, Emmons, and Tsang (2002) found that gratitude was significantly and directly correlated with—but distinct from—hope and well-being measures. Using the Values in Action Inventory of Strengths (VIA-IS) with 5,299 adults, Park, Peterson, and Seligman (2004) found that hope and gratitude were among the top 3 of 24 strengths positively correlated with life satisfaction. A five-study investigation found that adolescents who endorsed higher levels of social engagement scored higher on gratitude, hope, happiness, along with personal and academic well-being indicators (Froh et al., 2010). College students' well-being was associated with gratitude, hope, and happiness (Jones, You, & Furlong, 2013). Across cultures, hedonia and eudaimonia were positively related to each other and to gratitude and hope (Disabato, Goodman,

Kashdan, Short, & Jarden, 2016). Thus, correlational and experimental research has demonstrated associations among gratitude, hope, and happiness. But how does gratitude compare to other positive psychology traits for predicting hope and happiness? And, what effect does experimentally inducing gratitude have on state hope and happiness?

Gratitude

Gratitude occurs when understanding oneself to be the *beneficiary* of a *benefice*, particularly if one perceives that it was intended as *benevolent* by the *benefactor* (Roberts, 2004). In distinguishing gratitude from joy and hope, Roberts observed, “gratitude is about givers, gifts, recipients, and the attitudes of giver and recipients toward one another. It is a deeply social emotion” whereas joy “is a construal of some situation as good, as satisfying some concern of the person” and “Hope is a construal of some possible future good” (p. 65). Whereas gratitude and happiness are associated with abundance, hope is oriented to acquire abundance, to satisfy a deficiency, or to alleviate trouble in the (near or distant) future.

Gratitude can be experienced in a variety of conditions, even difficult ones. Remarkably, even in the context of trauma, some people are able to find benefits, and those who do are better able to flourish (Tennen & Affleck, 2002). After an interpersonal offense, when victims focus on benefits they experienced through facing the offense (e.g., lessons learned, resilience shown, and growth experienced), they demonstrate greater positivity, joy, and improved cardiovascular responding (Witvliet, Knoll, Hinman, & DeYoung, 2010). Benefit-focused reappraisal involves a focus on the silver-lining that activates positive emotion, as underscored by self-report and neurophysiological late positive potential (LPP) amplitude findings (Baker, Williams, Witvliet, & Hill, 2016).

Experienced globally, expressed across languages and cultures, and commended by the world’s major religions (Emmons & Crumpler, 2000), gratitude is characterized by a social and positive orientation as people recognize a gift from a giver and experience thankfulness and joy in response (Emmons & McCullough, 2003). In reflecting on the gratitude and hope relationship, McCullough (2002)

proposed that they may be related through an attentive awareness of meaning in one's life, derived from both the kindness of others and the pursuit of goals.

Gratitude and Hope

Whereas gratitude involves the appreciation of benefits that have already been received, hope involves the positive anticipation of receiving a future desired outcome (Snyder, Rand, & Sigmon, 2002; Scioli, Ricci, Nyugen, & Scioli, 2011). That desired future may involve the acquisition of a positive outcome or deliverance from a present circumstance. The realization of a hope may require action, as emphasized by Snyder et al. (1991, 1996), or may necessitate waiting for the actions of others (Worthington, 2005). Hope has been conceptualized in three ways. First, hope is generative and goal-directed, emphasizing one's own agency (motivation) and pathways (finding ways) to meet goals (Snyder et al., 1991, 1996, 2002). Second, Bruininks and Malle (2005) characterize hope as a positive and anticipatory emotion that emphasizes important outcomes that are not entirely within one's own control. Third, hope can also be understood as multidimensional, integrating cognition, emotion, motivation, relationships, and spirituality (Scioli et al., 2011).

Like gratitude, hope has been examined in relationship to desirable and undesirable states. Hope is inversely related to depressive symptoms (Chang, Yu, & Hirsch, 2013) and anxiety (Arnau, Rosen, Finch, Rhudy, & Fortunato, 2007). In addition, hope is related to better psychological adjustment (Snyder et al., 2002), life satisfaction, and well-being (O'Sullivan, 2011). McCullough (2002) theorized that mindful attentiveness connects hope and gratitude; hopeful and grateful people savor their lives, whether through appreciating the positive past or pursuing meaningful future goals. Furthermore, reflection on the generosity of others—the inherently social orientation of gratitude—may further facilitate hope (see McCullough, 2002), consistent with Scioli et al.'s (2011) view of hope.

Gratitude and Happiness

Gratitude has been considered to be a moral emotion that is strongly associated with positive affect (e.g., Watkins et al., 2009). According to Fredrickson (2004), gratitude functions like other positive emotions, broadening the repertoire of thought-action possibilities and building enduring personal

resources. Therefore, it is possible that cultivating gratitude may boost happiness while also generating hope.

Trait gratitude has been positively correlated with satisfaction with life, positive affectivity, and happiness (Watkins, Woodward, Stone, & Kolts, 2003). Researchers have also found that the characteristic response patterns of trait gratitude account for happiness (above and beyond personality, as measured by the Big Five) based on informants and self-reports (McCullough et al., 2002). Hill and Allemand (2011) found that gratitude and forgivingness traits each accounted for well-being when controlling for the other. They advised researchers to test multiple morally related trait variables to advance research on well-being, and we adopt this approach to study hope and happiness.

Contextualizing Trait and State Gratitude

Gratitude is not the only morally and socially-oriented strength to demonstrate associations with hope and happiness. The extant research has also focused on forgiveness, patience, and self-control. Interpersonal forgiveness resists allowing the past to define the future by focusing on a more positive future, which is theoretically associated with hope (Enright & Fitzgibbons, 2015), and empirically associated with happiness (Yalçın & Malkoç, 2015). People higher in trait self-control are more focused on pursuing positive future goals (Cheung, Gillebaart, Kroese, & De Ridder, 2014) and score higher in happiness (Wiese et al., 2017). Additionally, patience has been positively associated with trait cognitive hope and life satisfaction (Schnitker, 2012). Thus, Study 1 tested whether gratitude would go above and beyond forgivingness, patience, and self-control to predict hope and happiness.

Beyond correlational research, experimental intervention studies include an array of gratitude approaches intended to enhance well-being. These include counting blessings (e.g., Emmons & McCullough, 2003), gratitude letters (e.g., Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011), gratitude group sessions in schools (e.g., Froh et al., 2014), and gratitude diary writing in a clinical sample (Kerr, O'Donovan, & Pepping, 2015). Another approach has been to train people in combinations of VIA-IS strengths (e.g., Proyer, Ruch, & Buschor, 2013).

In a meta-analysis, Davis et al. (2016) identified 26 gratitude intervention studies which utilized random assignment. Overall, the gratitude interventions prompted greater well-being than measurement-only conditions ($k = 5, d = .31$) and alternative activities ($k = 18, d = .14$), but not other positive psychological comparisons ($k = 9, d = -.03$). Bolier et al.'s (2013) meta-analysis included 39 positive psychology intervention studies in which participants could be randomly assigned to interventions or to comparison conditions (i.e., measurement-only, placebo, or usual care). Results showed that the positive psychology conditions yielded significantly better outcomes for subjective well-being, psychological well-being, and depression.

Two hope intervention studies met design criteria for Bolier et al.'s (2013) meta-analysis. Cheavens, Feldman, Gum, Michael, and Snyder (2006) found in 32 community participants that those in a hope-focused group therapy vs. the control increased in their hope agency. Feldmen and Dreher (2012) found that among 96 college students randomly assigned to three conditions, those in a 90-minute hope intervention (vs. a relaxation condition) increased their hope pathways and hope agency scores, as well as their goal progress one month later. To our knowledge, the current research is the first to test the effects of a brief gratitude related writing intervention on happiness and hope.

The Current Studies

Our overarching research question is whether gratitude is meaningfully related to hope and happiness. We conducted two studies to test this question. In Study 1, we predicted that trait gratitude would significantly predict trait hope and happiness beyond other traits (Hypothesis 1). In Study 2, we predicted that engaging in a specific gratitude practice—gratefully reflecting on a past hope that had been fulfilled (compared to a control condition)—would cultivate significantly greater state hope and happiness (Hypothesis 2). For both studies, we have reported all conditions, data exclusions, and how we determined the sample sizes. When additional measures were collected, the domains assessed are reported within the respective method section of each study.

Study 1

Method

Participants. Participants in Study 1 were 181 (150 F, 31 M) undergraduate college students from a liberal arts college in the Midwest who received course research participation credit. Participants included 17-27 year olds ($M = 20.07$, $SD = 1.19$), who self-identified as white ($n = 159$), bi-racial or multi-ethnic ($n = 3$), Black/African-American ($n = 3$), Asian ($n = 4$), Asian American ($n = 2$), Hispanic/Latino ($n = 6$), Indian ($n = 1$), Middle Eastern ($n = 1$), unsure ($n = 1$), and other ($n = 1$). An additional four people participated, but were excluded for failing a check of awareness (i.e., endorsing that they were born on February 30) or honesty (i.e., indicating that they had not been fully honest during the study). The sample size was determined based on the sample sizes in McCullough et al.'s (2002) studies 1 and 3, which examined trait variables in relationship to dispositional gratitude.

Measures.

Trait cognitive hope. Snyder et al.'s (1991) trait hope scale contains two 4-item subscales: agency (i.e., the motivation to achieve a goal) and pathways (i.e., the ability to find many routes to achieve a goal), plus four filler items. Responses ranged from 1 (*definitely false*) to 8 (*definitely true*) for the 8 items ($\alpha = .86$).

Trait integrative hope. Scioli et al.'s (2011) Trait Hope Scale, Short Form A was used to measure hopeful motivation, emotion, relationships, and spirituality. Participants answered 28 items from 0 (*not at all like me*) to 3 (*exactly like me*) with strong reliability ($\alpha = .93$).

Happiness. Using an item from Keyes's (2002) flourishing scale, participants rated how often they felt happy during the past month, from 0 (*never*) to 5 (*everyday*). (See findings for Keyes' full flourishing scale in the footnote).

Gratitude. Using the Gratitude Questionnaire-six item form (GQ-6; McCullough et al., 2002), participants rated each item from 1 (*strongly disagree*) to 7 (*strongly agree*), with $\alpha = .79$.

Forgivingness. The Trait Forgivingness Scale (Berry, Worthington, O'Connor, Parrott, & Wade, 2005) contains 10 items that participants rated from 1 (*strongly disagree*) to 5 (*strongly agree*), with some items reverse scored ($\alpha = .84$).

Patience. Participants rated 11 items of the Patience Scale (Schnitker, 2012) from 1 (*not like me at all*) to 5 (*very much like me*), and we used the total score ($\alpha = .78$).

Self-control. The Self-Control Scale (Tangney, Baumeister, & Boone, 2004) consists of 13 items rated from 1 (*not at all*) to 5 (*very much*), including 7 reverse scored items ($\alpha = .81$).

Procedure. Institutional Review Board approval and informed consent preceded participant completion of the measures above via Survey Gizmo. The survey also included self-report measures of mental health, emotion regulation, and spirituality based on questions of interest for other investigations with students. Analyses of those variables were not run for this study.

Results

Correlations among hope, happiness, and the traits appear in Table 1. We performed hierarchical multiple regression analyses to determine how much variance in trait hope and happiness scores was accounted for by forgivingness, patience, and self-control, and how much additional variance was accounted for by gratitude. When an alternative model was tested, with age and gender entered as Step 1, this step was not significant (all F s ≤ 2.53 , p s $\geq .08$), and the trait model did not change, so the original model was retained. Because of the correlations among the trait variables, we calculated Variance Inflation Factors for the predictor variables in Step 1 and Step 2, as reported in the note for Table 2. The data did not suggest that multicollinearity among the predictors impacted the results.

Trait cognitive hope. As shown in Table 2, a two-step hierarchical regression analysis revealed that together in Step 1, forgivingness ($\beta = .22, p = .007$), self-control ($\beta = .16, p = .029$), and patience ($\beta = .13, p = .089$) accounted for 14% of the variance in hope scores. In Step 2, gratitude ($\beta = .35, p < .001$) accounted for an additional 10% of the variance in trait cognitive hope ($\Delta R^2 = .10; F = 15.01, p < .001$).

Trait integrative hope. Hierarchical regression (see Table 3) showed that in Step 1, forgiveness ($\beta = .42, p < .001$), self-control ($\beta = .05, p = .517$), and patience ($\beta = -.05, p = .505$) accounted for 16% of the variance in trait integrative hope scores. In Step 2, gratitude ($\beta = .69, p < .001$) accounted for an additional 39% of the variance in integrative hope ($\Delta R^2 = .39; F = 55.70, p < .001$).

Trait happiness.¹ In the stepwise hierarchical regression analysis reported in Table 4, in Step 1, forgivingness ($\beta = .24, p = .004$), self-control ($\beta = .23, p < .002$), and patience ($\beta = .04, p = .656$) together accounted for 15% of happiness scores. In Step 2, gratitude ($\beta = .42, p < .001$) accounted for an additional 13% of the variance in happiness ($\Delta R^2 = .13; F = 18.83, p < .001$).

Study 1 Discussion

This correlational study demonstrated gratitude's significant predictive capacity for cognitive and integrative hope, as well as happiness. Snyder's (1991) measure of trait hope emphasizes cognitive approaches to goal pursuit, comprised of the capacity to consider multiple pathways to achieve a goal as well as the necessary motivation to reach the goal. For this measure of trait hope, gratitude accounted for an additional 10% of variance beyond the combination of forgivingness, patience, and self-control. A different approach to conceptualizing trait hope was proposed by Scioli et al. (2011), whose measure integrates cognitive behavioral, affective, relational, and spiritual aspects of dispositional hope. Strikingly, gratitude accounted for more than twice the amount of variance in scores for this measure of trait hope beyond forgivingness, self-control, and patience combined. When predicting happiness over the past month, gratitude similarly accounted for substantially more of the variance in happiness scores than was predicted by the combination of forgivingness, patience, and self-control. Participants with a greater disposition to be grateful for benefits and benefactors in their lives were also happier.

Study 1 offered compelling evidence of the unique capacity of trait gratitude to predict trait hope and happiness. However, its method was correlational, which precludes causal statements. Additionally, by evaluating only positive traits, positive affect remains a viable explanation for gratitude's predictive power. Thus, we conducted an experiment in Study 2 to test the hypothesis that a gratitude-related writing intervention would lead to increases in both state hope and happiness.

Study 2

This experiment was designed to test whether an induction that involved gratitude would not only bolster state happiness, but would also prompt increased state hope for a meaningful outcome that

participants currently desired in their own lives. Gratitude can be a response to experiencing an outcome for which one previously hoped. Thus, we developed a writing task that focused participants' attention on a past experience in their lives in which they had similarly hoped for a meaningful outcome in their life that had occurred, identifying what they were grateful for and to whom they were grateful. This approach expands previous gratitude writing intervention research (e.g., Emmons & McCullough, 2003; Kerr et al., 2015) and contributes to the literature on hope interventions (Cheavens et al., 2006, Feldman & Dreher, 2012). Within Davis et al.'s (2016) meta-analysis, ten of the gratitude writing studies with activity-matched conditions included writing about daily activities, an approach that we adapt here.

Testing the effects of being randomly assigned to gratefully remembering of a past hope fulfilled (versus a control condition), we measured the level of hope participants reported after identifying and writing about a current hope, and again after the experimental or control condition. We similarly assessed how much happiness participants experienced while thinking about the current hope at each time, using a single item similar to Proyer et al. (2013). We predicted an interaction of Condition (grateful remembering vs. control) x Time (pre, post intervention), specifically hypothesizing that grateful remembering would prompt a reliable increase in state hope and happiness from Time 1 to Time 2.

In addition to self-reported state happiness and hope, we conducted linguistic analyses of written responses to the intervention and control conditions, which provided a method for testing whether the participants' written responses during the intervention varied as predicted based on the literature. In particular, gratitude has been positively associated with positive emotion (Fredrickson, 2004), religiosity (Watkins et al., 2003, 2009; McCullough et al., 2002), and with meaningful insight and social reflection (McCullough, 2002). Thus, we predicted that positive (but not negative) emotions, as well as grateful, social, religious, insight language would be used more often when gratefully remembering a past hope that was fulfilled.

Method

Participants. Participants in Study 2 were 153 (101 F, 52 M) undergraduate students from the same liberal arts college as in Study 1 and who received course credit for participating in the experiment

as one way to meet a research requirement. Ages ranged from 15 to 23 years ($M = 18.66$, $SD = .99$).

Participants self-identified as white ($n = 129$, 84%), bi-racial or multi-ethnic ($n = 12$), Hispanic/Latino ($n = 9$), African ($n = 1$), African-American ($n = 1$), and Asian ($n = 1$). Participants were randomly assigned to conditions by Survey Gizmo (control condition $N = 77$, 67.5% female, median age = 18; experimental condition $N = 76$, 64.5% female, median age = 18). Two participants were excluded because they did not complete the entire study.

The sample sizes for each condition were based on effect sizes and N s in gratitude interventions using gratitude versus daily activity lists or journals for psychological well-being outcomes in Davis et al.'s (2016) meta-analysis.

Measures. The dependent variables for this study focused on state hope and happiness, as well as word use in typed responses. Two exploratory items were deemed peripheral to this investigation; one assessed the perception of state optimism (and showed significantly higher scores for the experimental condition), and another assessed perceived support from God (which did not show significant differences between conditions). Prior to the random assignment to condition, a survey assessing traits, mental health, emotion regulation, and spirituality were included for other investigations and were not analyzed for this experiment.

State hope for a particular outcome questionnaire. A 7-item hope scale assessed participants' state levels of hope for a particular meaningful outcome that one desires in one's life, and which is not entirely assured to occur. The existing literature does not include scales that assess state hope for a specific future outcome. Thus, we drew on features from state hope research, including motivation (Snyder et al., 1996), social support (Scioli et al., 2011), and language about the importance and likelihood of the specific desired outcome (Bruininks & Malle, 2005; Bruininks, 2012) to assess state perceptions related to the currently hoped-for outcome participants identified at the beginning of the study. Questions were "Right now, ... how much are you hoping that this outcome will occur?, how hopeful are you that this outcome will occur?, how much do you hope that this outcome will occur?, how important is this hoped-for outcome to you?, how likely is it that this hoped-for outcome will actually

happen?, what is your level of motivation to do what you can to bring about this hoped-for outcome?, how much do you feel supported by others as you hope for this outcome?” Participants responded to 7 items on a scale from 1 (*not at all*) to 10 (*completely*). The internal reliabilities for the 7-item hope scale were good ($\alpha = .82$ pre-intervention; $.89$ post-intervention). The test-retest correlation across all participants was $r(153) = .84, p \leq .01$.

State Happiness. After answering the hope items related to their current hoped-for outcome, participants next responded to the question, “Right now, how happy are you?” on a scale from 1 (*not at all*) to 10 (*completely*). The test-retest correlation was $r(153) = .81, p \leq .01$

Linguistic Inquiry and Word Count (LIWC). To analyze participants’ typed responses during the course of the writing conditions, we used LIWC (Pennebaker, Booth, & Francis, 2007), which identifies words that match dictionaries and calculates the percentage of those words compared to the overall number of words participants used for that response. The following LIWC language categories were tested: positive emotion, negative emotion, social, religious, insight, and gratitude using a gratitude dictionary (Witvliet et al., 2010).

Procedure.

Participants first identified and wrote about a specific outcome that they were currently hoping to experience. They were instructed to identify a current hope that was meaningful to them but had an outcome that they could not completely control. They also described how they would feel if this hoped-for outcome was experienced in real life. Participants held this particular outcome in mind as they rated their level of state hope and happiness right then. They were then randomly assigned to one of two conditions: a grateful remembering condition or a neutral control. Participants could also be randomly assigned by Survey Gizmo to alternative conditions that were for a different study (legacy hope, eschatological hope, control condition).

The instructions for the *grateful remembering condition* guided participants to identify and write about a past hope that had been fulfilled (see Appendix for full prompt). The *control condition* prompted a length and complexity matched alternate activity (Davis et al., 2016). Participants described their

traveling routes for the previous day, where they went and what they saw, as well as their anticipated travel routes for the following day. Each condition had eight response boxes for typing responses. Participants again completed measures of state hope for the particular outcome they had identified at the beginning of the study, followed by their happiness right then.

Results

A review of participants' written responses showed that common current hopes included relational, academic, and job-related outcomes. None of the dependent variables were correlated with age or differed by gender.

Linguistic analyses. As shown in Table 5, the predicted differences were found in the language used during the experimental grateful remembering condition versus the control. Specifically, more positive emotion, social, religious, insight, and gratitude language words were used by participants in the grateful remembering condition compared to the control, although the total number of words typed per condition differed significantly, with higher overall word counts produced for the control condition. There was no significant difference between the negative emotion words used by participants in the control condition versus the grateful remembering condition. While the experimental condition, which ended with a prompt to identify to whom and for what participants were grateful, resulted in more gratitude language use than the control condition, the actual percentage of gratitude words was still low. It is possible that this writing induction may have elicited increased language related to correlates associated with gratitude (e.g., positive emotion, sociality, insight, and religiosity) rather than prompting participants to actually write words synonymous with gratitude.

Changes in hope and happiness. Participants' hope and happiness ratings were tested using mixed 2 Condition (grateful remembering, control) between-subjects x 2 Time (pre, post intervention) repeated measures ANOVAs. Hope and happiness data are depicted in Figure 1. As can be seen in Table 6, the predicted interactions of Condition x Time were significant both for hope and for happiness. Planned comparisons showed that participants in the two conditions did not differ in their starting levels of hope, $F(1,151) = 0.14, p = .71, \text{partial } \eta^2 = .001, \text{mean difference} = -0.42, .95 \text{ CI } [-2.64 \text{ to } 1.79], \text{ or}$

happiness, $F(1,151) = 0.01, p = .93$, partial $\eta^2 = .000$, mean difference = 0.03, .95 CI [-.55 to .60]. Post intervention scores were, however, significantly higher for participants in the grateful remembering condition than those in the control condition for both state hope, $F(1,151) = 7.56, p = .007$, partial $\eta^2 = .048, d = .45$, mean difference = 3.38, .95 CI [.95, 5.80], and state happiness, $F(1,151) = 5.88, p = .016$, partial $\eta^2 = .037, d = .39$, mean difference = 0.73, .95 CI [.14, 1.33].

Critically, and as predicted, participants in the grateful remembering condition reported significant increases from pre to post intervention for both state hope, $F(1, 75) = 9.76, p = .003$, partial $\eta^2 = .115, d = .36$, mean difference = 1.25, .95 CI [.35, 2.15], and state happiness, $F(1, 75) = 25.79, p < .001$, partial $\eta^2 = .256, d = .58$, mean difference = .46, .95 CI [.21, .71]. Unexpectedly, participants in the control condition experienced decreases in state hope, $F(1,76) = 11.71, p = .001$, partial $\eta^2 = .134, d = .39$, mean difference = -1.71, .95 CI [-2.59, -.81], and a trend of decreased happiness, $F(1,76) = 3.89, p = .052$, partial $\eta^2 = .049, d = .22$, mean difference = -0.30, .95 CI [-.55, -.05]. However, given the significant changes from Time 1 to Time 2 in the grateful remembering condition, the differences between conditions at Time 2 were not merely due to decreases in the control condition.

To ascertain whether the effect of gratitude was simply due to increases in positive emotion, follow-up analyses tested whether positive emotion mediated the effect of condition on hope and on happiness changes using PROCESS 2.16 macro (see Preacher & Hayes, 2004; Hayes, 2016) for SPSS (version 21) with 5000 bootstraps. Results showed that writing condition did not have an indirect effect on hope or happiness through positive emotion words. Specifically, while the path from condition to positive emotion word counts was significant in each test ($ps < .0001$), the paths from positive emotion to hope and happiness were not significant ($ps \geq .12$), and both completely standardized effect confidence intervals crossed 0. Thus, condition effects on hope and happiness were not mediated by positive emotion.

Study 2 Discussion

The condition of gratefully remembering a past hope that was successfully fulfilled reliably increased state hope and happiness from pre- to post-intervention, as well as compared to the neutral control condition at post-intervention. To contextualize these findings, a meta-analysis by Davis et al.

(2016) found that gratitude interventions outperformed inert matched activities, with a small effect size for post-test psychological well-being ($d = .14$). The current experiment showed that at post-test, the grateful remembering condition outperformed the control condition on measures of hope ($d = .45$) and happiness ($d = .39$). Further, within the gratitude group, participants showed pre- to post-intervention increases for both hope ($d = .36$) and happiness ($d = .58$). However, we do not know how long these effects last.

As predicted, linguistic analyses of written responses produced during the writing intervention showed that the proportion of negative affect was unaffected by condition, but positive affect words were used more in the gratitude-related condition. Fredrickson (2004) has also viewed positive emotions as playing an important role in gratitude. In this case, it appears that the grateful remembering induction activated positive emotion, which in this case broadened and built participants' current hope for a desired outcome not yet reached. However, analyses of the indirect effects support the conclusion that the effect of condition was not due to the increase in positive affect per se. Consistent with Scioli et al.'s (2011) vision, the condition that prompted more social language also prompted more hope. In line with research on gratitude and religiosity (McCullough et al., 2002; Watkins et al., 2003, 2009), the gratitude intervention prompted more religious language use. Finally, McCullough (2002) posited that meaningful reflection may link gratitude to hope, and the linguistic variable most closely tied to this demonstrated that insight word use was higher in the condition of gratefully remembering a past hope fulfilled.

General Discussion

Two studies provided evidence that greater trait and state gratitude were positively associated with hope and happiness. Study 1 demonstrated that trait gratitude was a strong predictor of dispositional hope and happiness, beyond forgivingness, patience, and self-control combined. These results are consistent with predictions and advance the scholarship of trait gratitude in the context of strengths, happiness, and hope—using both the dominant cognitive measure of trait hope (Snyder et al., 1991) and a more recent integrative measure of trait hope (Scioli et al., 2011).

Study 2 contributes to the emerging literature on positive psychology hope interventions, which have focused on goal-directed hope development with community members (Cheavens et al., 2006) and with college students (Feldman & Dreher, 2012). The current study also contributes a new gratitude related writing paradigm to the gratitude intervention literature (e.g., Davis et al., 2016, Emmons & McCullough, 2003; Froh et al., 2014; Kerr et al., 2015; Lyubomirsky et al., 2011). As predicted, the writing intervention reliably increased state hope and happiness (vs. the control condition). Furthermore, linguistic results echo conceptualizations of gratitude in the literature, which emphasize its relationship to positive emotion (McCullough et al., 2002), religiosity (Watkins et al. 2003, 2009; McCullough et al., 2002), meaning (Van Tongeren, Green, Davis, Hook, & Hulseley), and sociality (McCullough, 2002).

Gratitude and Hope

Insights from Study 1 advance understanding beyond the literature correlating trait gratitude to trait cognitive hope (Snyder et al., 1991) by also demonstrating a potent relationship with integrative hope (Scioli et al., 2011). Therefore, both hope constructs are relevant to the study of gratitude and other traits (i.e., forgivingness, patience, self-control). Notably, gratitude accounted for substantial variance in both integrative hope and cognitive hope scores beyond the other traits. Gratitude may be an important trait to examine in future research projects that investigate integrative and cognitive hope dispositions.

At the state level, the process of gratefully writing about one's own experience in the past of facing a similar experience of hoping—and of having the hope fulfilled—prompted increases in current hope. Although this evidence suggests the non-clinical benefit of gratefully remembering a past positive outcome to produce increases in current hope and happiness, future work may be directed to other populations such as those experiencing a loss of hope or those in clinical settings. Drawing on work showing the value of gratitude writing with clinically distressed people waiting for their therapy to begin (Kerr et al., 2015), we suggest that the grateful remembering approach tested in the present study may have pre-therapeutic utility. This offers another gratitude approach that may proffer affective benefits while also bolstering hope, a common factor in successful therapy (Asay & Lambert, 1999).

It is possible that gratitude and hope naturally prompt temporal reflections, on the past and future respectively, and that this temporality partially explains their relationship. The condition in which participants gratefully remembered a past hope fulfilled emphasized looking back with awareness that one once looked ahead with hope. The control condition also prompted temporal reflections, but with a focus on routine details that may have detracted from state hope for a meaningful outcome. A more stringent future test of our hypothesis would be to compare the grateful remembering induction in Study 2 with an established method for bolstering hope and happiness to determine whether gratefully remembering a past hope fulfilled is a particularly effective intervention for state hope and happiness, testing this longitudinally.

Gratitude and Happiness

In Study 1, we accrued trait evidence that each of the traits tested was significantly and positively correlated with happiness. This echoes work linking happiness to forgivingness (Yalçın & Malkoç, 2015), patience (Schnitker, 2012), and self-control (Cheung et al., 2014). However, gratitude went beyond these traits combined to account for an additional significant proportion of variance in happiness scores.

The effect of engaging in intentional activities on happiness has received substantial attention (e.g., Lyubomirsky, Sheldon, & Schkade, 2005). We believe gratitude can be an intentional response to one's circumstance, in which people aim to identify a good for which they are thankful and a benevolent giver to whom they can give thanks. A recent meta-analysis of gratitude interventions (Davis et al., 2016) showed that at post-test, these had small effects on psychological well-being compared to a matched activity comparison ($d = .14$). While still modest, the current Study 2 gratitude writing intervention outperformed the control writing condition with comparatively stronger effect sizes for post-test happiness ($d = .39$) and hope ($d = .45$). Thus, the strategy of reflecting and writing about a past hope that was fulfilled appears to show promise as an approach for strengthening state happiness and hope, although longer term effects remain to be tested.

Summary, Limitations, and Future Directions

Ordinary life is replete with hopes for the future that are meaningful, desired, possible, and not entirely within our control. As people invest their cognitive energy in remaining motivated and finding alternate pathways to pursue their goals (Snyder et al., 1991), they may also draw on their emotions, relationships, and spirituality (Scioli et al., 2011). The current work suggests that trait gratitude plays an important role in both approaches to hope, as well as happiness. At the state level, the simple pivot of looking to a past similar hope that was fulfilled—and reflecting on for what and to whom one is grateful—can prompt an elevated experience of hope and of happiness.

Limitations of the present studies include that results are constrained by the nature of the sample tested—predominantly white, mostly female, mainly religious and/or spiritual undergraduates, with 10-16% identifying as “not religious at all” and 9-10% identifying as “not spiritual at all” across studies. Future research could determine whether the findings generalize to samples with greater religious diversity and people who are predominantly not religious or spiritual, given that trait gratitude has been found to be directly correlated with single-item religious and spiritual variables (McCullough et al., 2002). We also relied on a single-item measure of happiness while thinking about one’s future hope, and assessed hope based on a state hope scale developed for this research. Future research could use other psychometrically validated measures. In addition, our state measure of gratitude during the induction relied on word counts, as did our assessment of positive affect, whereas future research could confirm that this writing induction increased scores using other established measures of gratitude and emotion. Moreover, longitudinal designs could calibrate the length of the effects elicited by the writing induction.

Future research could test whether adapting this intervention to elaborate on the gratitude writing prompts (e.g., listing more things or people for which one was grateful or by providing more details about why one experienced gratitude for the hope fulfilled) would strengthen the induction by manipulating the span or density of gratitude (see McCullough et al., 2002), which could increase potency. Further designs could compare a grateful remembering intervention to the range of gratitude interventions included in the Davis et al. (2016) meta-analysis, as well as positive emotion inductions. A promising area for future research would be to test whether such gratitude interventions can be practiced so that participants

cultivate dispositional gratitude, and can be associated with the tendency to have cognitive goal-pursuit hope (Snyder et al., 1991) as well as integrative hope (Scioli et al., 2011) and sustainable happiness (Lyubomirsky et al., 2005).

References

- Arnau, R. C., Rosen, D. H., Finch, J. F., Rhudy, J. L., & Fortunato, V. J. (2007). Longitudinal effects of hope on depression and anxiety: A latent variable analysis. *Journal of Personality, 75*(1), 43-63.
- Asay, T. P., & Lambert, M. J. (1999). The empirical case for the common factors in therapy: Quantitative findings. *The heart and soul of change: What works in therapy*. (pp. 23-55) American Psychological Association, Washington, DC. doi:10.1037/11132-001
- Baker, J. C., Williams, J. K., Witvliet, C. V. O., Hill, P. C. (2016). Positive reappraisals after an offense: Event-related potentials and emotional effects of benefit-finding and compassion. *The Journal of Positive Psychology*. doi:10.1080/17439760.2016.1209540
- Berry, J. W., Worthington, E. L., Jr., O'Connor, L. E., Parrott, L., III, & Wade, N. G. (2005). Forgivingness, vengeful rumination, and affective traits. *Journal of Personality, 73*(1), 183-225.
- Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: a meta-analysis of randomized controlled studies. *BMC public health, 13*(1), 119.
- Bruininks, P. (2012). The unique psychology of hope. In J. Begbie, T. Hart, and C. Hopps (Eds.), *Patterns of promise: Art, imagination and Christian hope*. Burlington, VT: Ashgate Publishing.
- Bruininks, P., & Malle, B. F. (2005). Distinguishing hope from optimism and related affective states. *Motivation and Emotion, 29*(4), 324-352.
- Chang, E. C., Yu, E. A., & Hirsch, J. K. (2013). On the confluence of optimism and hope on depressive symptoms in primary care patients: Does doubling up on bonum futurum proffer any added benefits? *The Journal of Positive Psychology, 8*(5), 404-411.
- Cheavens, J. S., Feldman, D. B., Gum, A., Michael, S. T., & Snyder, C. R. (2006). Hope therapy in a community sample: A pilot investigation. *Social Indicators Research, 77*(1), 61-78.
doi:<http://dx.doi.org/10.1007/s11205-005-5553-0>

- Cheung, T. T. L., Gillebaart, M., Kroese, F., & De Ridder, D. (2014). Why are people with high self-control happier? The effect of trait self-control on happiness as mediated by regulatory focus. *Frontiers in Psychology, 5*. doi:10.3389/fpsyg.2014.00722
- Davis, D. E., Choe, E., Meyers, J., Wade, N., Varjas, K., Gifford, A., Quinn, A., Hook, J. N., Van Tongeren, D. R., Griffin, B. J., & Worthington, E. L., Jr. (2016). Thankful for the little things: A meta-analysis of gratitude interventions. *Journal of Counseling Psychology, 63*(1), 20-31.
- Disabato, D. J., Goodman, F. R., Kashdan, T. B., Short, J. L., & Jarden, A. (2016). Different types of well-being? A cross-cultural examination of hedonic and eudaimonic well-being. *Psychological Assessment, 28*(5), 471-482.
- Feldman, D. B., & Dreher, D. E. (2012). Can hope be changed in 90 minutes? Testing the efficacy of a single-session goal-pursuit intervention for college students. *Journal of Happiness Studies, 13*(4), 745-759. doi:http://dx.doi.org/10.1007/s10902-011-9292-4
- Emmons, R. A., & Crumpler, C. A. (2000). Gratitude as a human strength: Appraising the evidence. *Journal of Social and Clinical Psychology, 19*(1), 56-69. doi:/10.1521/jscp.2000.19.1.56
- Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology, 84*(2), 377-389.
- Enright, R. D., & Fitzgibbons, R. P. (2015). *Forgiveness therapy: An empirical guide for resolving anger and restoring hope*. American Psychological Association, Washington, DC.
doi:http://dx.doi.org/10.1037/14526-000
- Fredrickson, B. L. (2004). *Gratitude, like other positive emotions, broadens and builds*. In R. A. Emmons and M. E. McCullough (Eds.), *The psychology of gratitude* (pp. 145-166). New York, NY: Oxford University Press. doi:/10.1093/acprof:oso/9780195150100.003.0008
- Froh, J. J., Bono, G., Fan, J., Emmons, R. A., Henderson, K., Harris, C., Leggio, H. (2014). Nice thinking! An educational intervention that teaches children to think gratefully. *School Psychology Review, 43*(2), 132-152.

- Froh, J. J., Kashdan, T. B., Yurkewicz, C., Fan, J., Allen, J., & Glowacki, J. (2010). The benefits of passion and absorption in activities: Engaged living in adolescents and its role in psychological well-being. *The Journal of Positive Psychology, 5*(4), 311-332.
- Hayes, A. F. (2016). The PROCESS macro for SPSS and SAS. Retrieved from <http://www.processmacro.org/index.html>
- Hill, P. L., & Allemand, M. (2011). Gratitude, forgiveness, and well-being in adulthood: Tests of moderation and incremental prediction. *The Journal of Positive Psychology, 6*(5), 397-407. doi:<http://dx.doi.org/10.1080/17439760.2011.602099>
- Jones, C. N., You, S., & Furlong, M. J. (2013). A preliminary examination of covitality as integrated well-being in college students. *Social Indicators Research, 111*(2), 511-526. doi:[10.1007/s11205-012-0017-9](http://dx.doi.org/10.1007/s11205-012-0017-9)
- Kerr, S. L., O'Donovan, A., & Pepping, C. A. (2015). Can gratitude and kindness interventions enhance well-being in a clinical sample? *Journal of Happiness Studies, 16*(1), 17-36. doi:[10.1007/s10902-013-9492-1](http://dx.doi.org/10.1007/s10902-013-9492-1)
- Keyes, C. L. M., (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior, 43*, 207-222.
- Lyubomirsky, S., Dickerhoof, R., Boehm, J. K., & Sheldon, K. M. (2011). Becoming happier takes both a will and a proper way: An experimental longitudinal intervention to boost well-being. *Emotion, 11*(2), 391-402. doi:<http://dx.doi.org/10.1037/a0022575>
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*(2), 111-131.
- McCullough, M. E. (2002). Savoring life, past and present: Explaining what hope and gratitude share in common. *Psychological Inquiry, 13*(4), 302-304.
- McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology, 82*(1), 112-127. doi:[10.1037/0022-3514.82.1.112](http://dx.doi.org/10.1037/0022-3514.82.1.112)

- O'Sullivan, G. (2011). The relationship between hope, eustress, self-efficacy, and life satisfaction among undergraduates. *Social Indicators Research, 101*(1), 155-172.
- Park, N., Peterson, C., & Seligman, M. E. (2004). Strengths of character and well-being. *Journal of Social and Clinical Psychology, 23*, 603-619.
- Pennebaker, J. W., Booth, R. J., & Francis, M. E. (2007). Linguistic Inquiry and Word Count: LIWC [Computer Software]. Austin, TX: LIWC.net.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers, 36*(4), 717-731.
doi:<http://10.3758/BF03206553>
- Proyer, R. T., Ruch, W., & Buschor, C. (2013). Testing strengths-based interventions: A preliminary study on the effectiveness of a program targeting curiosity, gratitude, hope, humor, and zest for enhancing life satisfaction. *Journal of Happiness Studies, 14*(1), 275-292.
doi:<http://dx.doi.org/10.1007/s10902-012-9331-9>
- Roberts, R. C. (2004). The blessings of gratitude: A conceptual analysis. In R. A. Emmons and M. E. McCullough (Eds.), *The psychology of gratitude*. (pp. 58-78). Oxford University Press, New York, NY. doi:10.1093/acprof:oso/9780195150100.003.0004
- Schnitker, S. (2012). An examination of patience and well-being. *The Journal of Positive Psychology, 7*(4), 263-280. doi:<http://dx.doi.org/10.1080/17439760.2012.697185>
- Scioli, A., Ricci, M., Nyugen, T., & Scioli, E. R. (2011). Hope: Its nature and measurement. *Psychology of Religion and Spirituality, 3*(2), 78-97.
- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., Yoshinobu, L., Gibb, J., Langelle, C., & Harney, P. (1991). The will and the ways: development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology, 60*(4), 570.

- Snyder, C. R., Rand, K. L., & Sigmon, D. R. (2002). Hope theory: A member of the positive psychology family. In C. Snyder, & S. Lopez (Eds.), *Handbook of positive psychology* (pp. 257-276). Oxford University Press: New York, NY.
- Snyder, C. R., Sympon, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the State Hope Scale. *Journal of Personality and Social Psychology*, *70*(2), 321–335. doi:10.1037/0022-3514.70.2.321
- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*(2), 271-322.
- Tennen, H., & Affleck, G. (2002). Benefit-finding and benefit-reminding. In C. Snyder & S. Lopez (Eds.), *Handbook of positive psychology* (pp. 584–597). Oxford University Press: New York.
- Van Tongeren, D. R., Green, J. D., Davis, D. E., Hook, J. N., & Hulseley, T. L. (2016). Prosociality enhances meaning in life. *Journal of Positive Psychology*, *11*, 225-236.
- Watkins, P. C., Van Gelder, M., & Frias, A. (2009). Furthering the science of gratitude. *Oxford handbook of positive psychology* (2nd ed., pp. 437-445). Oxford University Press, New York, NY.
- Watkins, P. C., Woodward, K., Stone, T., & Kolts, R. L. (2003). Gratitude and happiness: Development of a measure of gratitude and relationships with subjective well-being. *Social Behavior and Personality*, *31*(5), 431-452.
- Wiese, C. W., Tay, L., Duckworth, A. L., D'Mello, S., Kuykendall, L., Hofmann, W., Baumeister, R. F., Vohs, K. D. (2017). Too much of a good thing? exploring the inverted-u relationship between self-control and happiness. *Journal of Personality*, doi:http://dx.doi.org/10.1111/jopy.12322
- Witvliet, C. V. O., Knoll, R. W., Hinman, N. G., & DeYoung, P. A. (2010). Compassion-focused reappraisal, benefit-focused reappraisal, and rumination after an interpersonal offense: Emotion-regulation implications for subjective emotion, linguistic responses, and physiology. *The Journal of Positive Psychology*, *5*(3), 226-242.
- Worthington, E. L. (2005). *Hope-focused marriage counseling: A guide to brief therapy*. Downers Grove, Ill: InterVarsity Press.

Yalçın, I., & Malkoç, A. (2015). The relationship between meaning in life and subjective well-being: Forgiveness and hope as mediators. *Journal of Happiness Studies, 16*(4), 915-929.
doi:/10.1007/s10902-014-9540-5.

Table 1.

Correlations among Hope, Happiness, and Strengths and Virtues

	1	2	3	4	5	6
1. Cognitive Hope	-					
2. Integrative Hope	.555***	-				
3. Happiness	.479***	.391***	-			
4. Gratitude	.443***	.711***	.479***	-		
5. Patience	.277***	.150*	.204**	.357***	-	
6. Self-Control	.277***	.180*	.323***	.169*	.270***	-
7. Forgivingness	.336***	.410***	.333***	.390***	.452***	.350***

Note. *** $p < .001$ ** $p < .01$ * $p < .05$

Table 2.

Hierarchical Regression Predicting Trait Cognitive Hope

Steps and predictors	B	SE B	β	t	<i>Adjusted</i> <i>R</i> ²	ΔR^2	F	p
Step 1					.14		10.88	<.001
Forgivingness	.23	.09	.22	2.71				.007
Patience	.17	.10	.13	1.71				.089
Self-Control	.15	.07	.16	2.21				.029
Step 2					.24	.10	15.01	<.001
Forgivingness	.13	.08	.12	1.51				.133
Patience	.07	.10	.05	0.72				.471
Self-Control	.15	.06	.16	2.30	.			.023
Gratitude	.56	.12	.35	4.83				<.001

Note. For all regression analyses, the Variance Inflation Factors for Step 1 and Step 2 are: Forgivingness = 1.35 and 1.45, Patience = 1.28 and 1.34, Self-Control = 1.16 and 1.16, and Gratitude = 1.24.

Table 3.

Hierarchical Regression Predicting Trait Integrative Hope

Steps and predictors	B	SE B	β	t	Adjusted R^2	ΔR^2	F	p
Step 1					.16		12.25	<.001
Forgivingness	.89	.17	.42	5.24				<.001
Patience	-.13	.20	-.05	-0.67				.505
Self-Control	.09	.14	.05	0.65				.517
Step 2					.55	.39	55.70	<.001
Forgivingness	.47	.13	.22	3.64				<.001
Patience	-.53	.15	-.21	-3.59				<.001
Self-Control	.08	.10	.04	0.78				.439
Gratitude	2.26	.18	.69	12.42				<.001

Table 4.

Hierarchical Regression Predicting Trait Happiness

Steps and predictors	B	SE B	β	t	<i>Adjusted</i> R^2	ΔR^2	F	p
Step 1					.15		11.25	< .001
Forgivingness	.03	.01	.24	2.95				.004
Patience	.01	.01	.04	0.45				.656
Self-Control	.02	.01	.23	3.11				.002
Step 2					.28	.13	18.83	< .001
Forgivingness	.01	.01	.12	1.55				.123
Patience	-.01	.01	-.06	-0.81				.418
Self-Control	.02	.01	.23	3.34				.001
Gratitude	.07	.01	.42	5.92				<.001

Table 5.

Means, standard deviations, and confidence intervals of word counts and language categories used during each condition. Different superscripts represent statistically significantly different values.

	Grateful Remembering			Control Condition			<i>F</i> (1, 151)	<i>partial</i> η^2
	<i>M</i>	<i>SD</i>	.95 CI	<i>M</i>	<i>SD</i>	.95 CI		
Word Count	161.50 ^a	66.27	[146.36, 176.64]	235.01 ^b	185.95	[192.81, 277.22]	10.55***	.07
Words/Sentence	16.79	7.69	[15.28, 18.30]	15.99	5.45	[14.49, 17.48]	0.56	.00
Gratitude	0.90 ^a	0.53	[0.81, 0.98]	0.02 ^b	0.10	[-0.07, 0.10]	201.09***	.57
Positive Emotion	8.08 ^a	2.69	[7.59, 8.58]	1.54 ^b	1.51	[1.05, 2.03]	346.60***	.70
Negative Emotion	0.70	1.00	[0.49, 0.90]	0.46	0.79	[0.25, 0.66]	2.77	.02
Social	7.74 ^a	3.40	[6.94, 8.54]	2.99 ^b	3.66	[2.19, 3.78]	69.27***	.31
Religious	1.61 ^a	1.40	[1.34, 1.87]	0.54 ^b	0.88	[0.28, 0.81]	31.88***	.17
Insight	3.31 ^a	1.29	[2.96, 3.66]	1.18 ^b	1.76	[0.83, 1.52]	72.95***	.33

Note. *** $p < .001$ ** $p < .01$ * $p < .05$. Negative emotion $p = .098$.

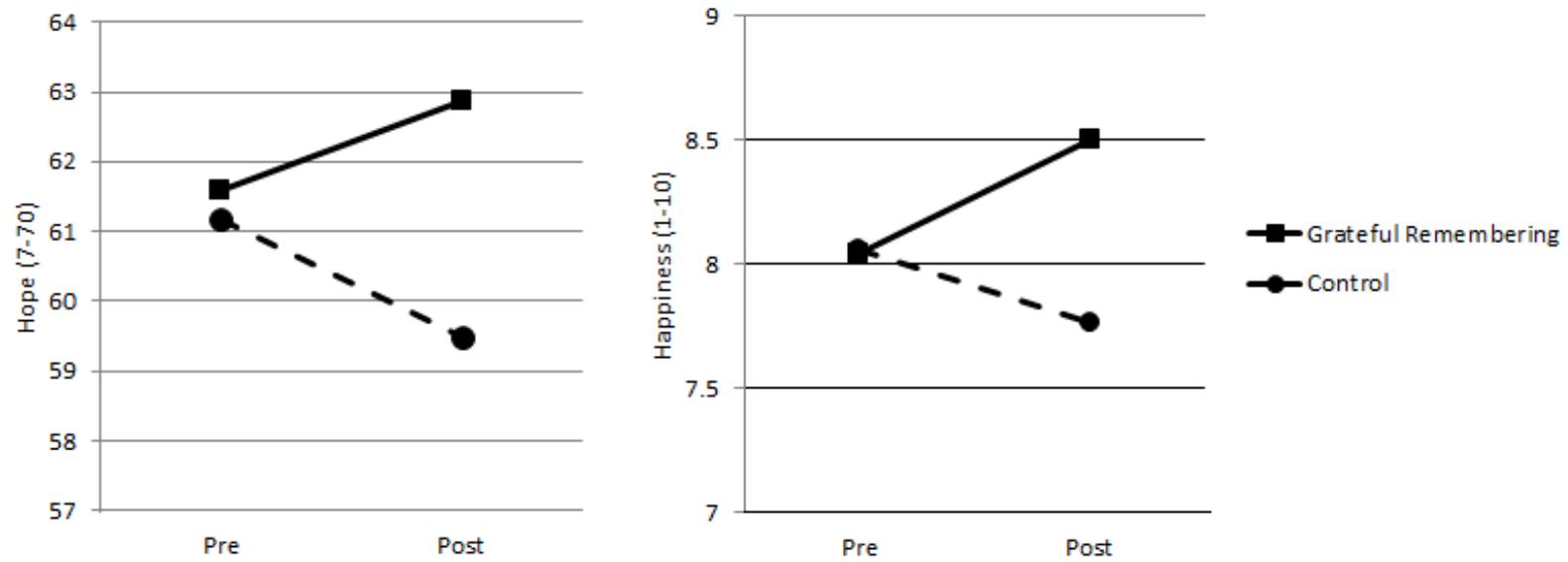
Table 6.

Pre-post writing condition score means (SDs) by condition with F-values and partial η²s for each analysis

	Grateful Remembering		Control		Time		Condition		Time x Condition	
	<i>M (SD)</i>		<i>M (SD)</i>		<i>F (1, 151)</i>	<i>partial η²</i>	<i>F (1, 151)</i>	<i>partial η²</i>	<i>F (1, 151)</i>	<i>partial η²</i>
	Pre	Post	Pre	Post						
Hope (7-70)	61.62 ^a (6.67)	62.87 ^b (6.83)	61.19 ^a (7.19)	59.49 ^c (8.27)	0.50	.003	2.82	.018	21.33***	.124
Happiness (1-10)	8.04 ^a (1.76)	8.50 ^b (1.69)	8.06 ^a (1.85)	7.76 ^a (2.04)	0.84	.006	1.56	.010	18.39***	.109

Note. *** $p < .001$. Based on post-hoc comparisons of the interaction with Bonferroni correction, values with different superscripts represent statistically significant ($p \leq .05$) and reliable differences among the means (.95 CIs for mean differences did not include 0).

Figure 1. Average hope and happiness ratings pre- and post-writing intervention by condition.



Appendix

Remembering with Gratitude prompt:

“Now reflect on a time in your past when you had hoped for an outcome, and your hope was fulfilled. Try to identify a past hope that is similar in significance to the ‘current hoped-for outcome’ which you described in the beginning of this study. Some people learn lessons or insights based on having a past hope fulfilled. Some people were motivated to do what they could to bring about a past hope. People sometimes see the approaches or steps they took that contributed to the positive outcome. Some people see how others played a role in bringing about the outcome they hoped for in the past. Some people grow spiritually, in their beliefs and practices when they experience an outcome they had previously hoped would occur. Sometimes, people have a stronger sense of purpose after experiencing the fulfillment of a past hope. Some people recognize character strengths in themselves that grew through the process of hoping in the past and seeing that outcome fulfilled. Sometimes, people become more grateful after a past hope is fulfilled. Using 1-2 complete sentences, describe the outcome you hoped for in the past, which really did come true already in your life. [Response box] Write about what you learned through having this past hope fulfilled in your life. (Use at least 1 complete sentence for this and the remaining write-in boxes that follow.) [Response box] Describe the motivation you had to bring about the fulfillment of this past hope. [Response box] Write about the steps you took that contributed to the positive fulfillment of the past hope you have described. [Response box] Reflect on how relationships with others played a role in your past hope and experiencing its fulfillment. [Response box] Write about your spiritual growth through the experience of having your past hope fulfilled. [Response box] Describe how your strengths and virtues grew in the process of hoping in the past and seeing that hope fulfilled. [Response box] As you reflect on this past fulfilled hope in your life, identify and name what you are grateful for and to whom you are grateful. [Response box]”

¹Using a stepwise hierarchical regression analysis for total flourishing scores ($\alpha = .94$), in Step 1, forgivingness ($\beta = .35, t = 4.56, p \leq .001$), self-control ($\beta = .14, t = 1.93, p = .056$), and patience ($\beta = .10, t = 1.34, p = .182$) together accounted for 21% of flourishing scores, (adjusted $R^2 = .21$; $F = 17.14, p < .001$). In Step 2, gratitude ($\beta = .54, t = .8.81, p < .001$) accounted for an additional 24% of the variance in flourishing scores (adjusted $R^2 = .45$; $\Delta R^2 = .24$; $F = 37.81, p < .001$).