

## A changed perspective: How gratitude can affect sense of coherence through positive reframing

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We hypothesized that gratitude would be related to sense of coherence via positive reframing, which is a process by which negative events or circumstances are seen in a positive light. We tested this hypothesis in two studies. In Study 1 ( $N = 166$ ) we found a strong, robust relationship between trait gratitude and sense of coherence above and beyond life satisfaction, positive and negative affect, happiness, and social desirability. Study 2 ( $N = 275$ ) showed that gratitude at Time 1 predicted sense of coherence at Time 2, controlling for baseline scores. Positive reframing mediated the relationship between gratitude and SOC. Results are discussed in terms of their practical implications.

**Keywords:** gratitude; sense of coherence; positive reframing; life meaning; well-being

### Introduction

With the advent of Positive Psychology, researchers have begun to systematically explore factors that enhance human life. Gratitude figures prominently among the positive dimensions of the human experience (e.g., Emmons & McCullough, 2004). It has been proposed that gratitude promotes prosocial behavior (McCullough, Kilpatrick, Emmons, & Larson, 2001) and there is evidence that this is the case. For example, both Bartlett and DeSteno (2006) and Tsang (2006) found that gratitude increased helping behavior, and other researchers have suggested that kind acts inspired by gratitude build and strengthen social bonds and friendships (Emmons & Shelton, 2002; McCullough et al., 2001; McCullough & Tsang, 2004).

Recently, an effort has begun to examine the effect of gratitude on close relationships. Algoe, Haidt, and Gable (2008) found that gratitude expressed between sorority sisters promoted relationship formation and maintenance. Other recent research has demonstrated that expressing gratitude to a friend increased regard for that friend, made participants more comfortable in voicing relationship concerns to this friend (Lambert, & Fincham, 2009), and increased their perception of communal strengths in their relationship with this friend (Lambert, Clark, Graham, Durtschi, & Fincham, in press). The primary objective of the current research is to examine the relationship between gratitude and an important indicator of

well-being: sense of coherence. We hypothesize that gratitude will increase sense of coherence, and that this relationship will be mediated by positive reframing.

### Gratitude and mental health

In their groundbreaking study, Emmons and McCullough (2003) employed daily diary methods to experimentally determine the effect of gratitude on mental health over time and found that those who wrote about the things they were grateful for improved in mood, coping behaviors, and even physical health symptoms. This study triggered interest in the effect of gratitude on mental health. Grateful college students reported about half the posttraumatic symptoms as less grateful students following a stressful event (Masingale et al., 2001). Trait gratitude was highly correlated with the Mood Repair Scale ( $r = 0.62$ ), indicating that such a trait may be useful for coping (Watkins, Christensen, Lawrence, & Whitney, 2001). Indeed, Wood, Joseph, and Linley (2007) found a positive link between gratitude and several coping styles and other research links gratitude to lower levels of depression over time (Wood, Maltby, Gillett, Linley, & Joseph, 2008). Thus, efforts have begun to examine the effect of gratitude on mental health and well-being. Our objective was to build on this work by examining how gratitude might affect the mental health indicator sense of coherence.

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### *Sense of coherence as an important predictor of mental health outcomes*

Sense of coherence is the set of beliefs that life is manageable, meaningful, and comprehensible (Antonovsky, 1993). It is considered to be a personal resource (Moos & Schaefer, 1993) that guides the individual's reactions to stressful situations and Antonovsky (1993) developed the construct as a means of anticipating positive responses to stressful life events. There are three dimensions to a sense of coherence: *comprehensibility* refers to confidence in the explicability and predictability of stimuli deriving from external and internal environments; *manageability* refers to the perception that one has personal resources needed to meet the demands of the stimuli; and *meaningfulness* refers to one's perception that the challenges and demands are worthy of engagement and investment.

Sense of coherence is associated with a host of positive life outcomes, including good mental health (e.g., Lundberg & Peck, 1994) and good physical health (e.g., Jorgensen, Frankowski, & Carey, 1999; for a recent review see Eriksson & Lindstrom, 2006). For instance, SOC is associated with perceptions of physical health among the elderly (Nygren, Alex, Jonsen, Gustafson, Norberg, & Lundman, 2005), stressed university students (Jorgensen et al., 1999), and among a representative sample of urban Jewish adults in Israel (Drory, Florian, & Kravetz, 1991). SOC also predicts better coping with critical illnesses (Fok, Chair, & Lopez, 2005). Moreover, low SOC is associated with an increased risk for cancer (Poppius, Virkkunen, Hakama, & Tenkanen, 2006). Clearly, SOC is worthy of the attention of health researchers. Specifically, higher SOC is associated with lower rates of depression (e.g., Lundberg & Peck, 1994; Ying, Lee, & Tsai, 2007) and a variety of other psychological disorders (Ristkari, Sourander, Ronning, & Helenius, 2006). Relatedly, SOC seems to protect workers from job burnout (Kalimo, Pahkin, & Mutanen, 2002). Although these data do not establish the causal relationships between these variables, they are consistent with the notion that SOC is protective of mental health.

SOC is also associated with other sorts of positive outcomes. For example, Volanen, Lahelma, Silventoinen, and Suominen (2004) found that SOC tended to be associated with positive psycho-emotional resources such as the quality of one's relationships, social support, and the quality of work. Other researchers have demonstrated that SOC allows people to create and marshal social resources at work (Feldt, Kivimaki, Rantala, & Tolvanen, 2004). SOC also correlates positively with self-esteem and with optimism (Pallant & Lae, 2002). This literature clearly shows that SOC is associated with a number of positive

outcomes, and it is therefore important to understand its determinants. We predict that gratitude will be one of those determinants.

### *Theoretical model*

Maddi (2006) discusses the concept of hardiness and describes it as being the hard work involved in turning stressful, potential disasters into growth opportunities. We propose that an important aspect of such turn-arounds is the ability to see positive aspects of that which was previously viewed in a negative light. Thus, simply put, positive reframing is the tendency to perceive the positive aspects of a situation, event, or trait that is traditionally viewed negatively. We propose that the relationship between gratitude and SOC can be accounted for by positive reframing (see Figure 1). We first examine and discuss why gratitude should be related to SOC, then discuss why gratitude should be related to positive reframing, following which we discuss why positive reframing would affect SOC.

*Gratitude and sense of coherence (Path A).* Gratitude should be associated with sense of coherence for the following reasons. First, individuals who are grateful for certain life experiences should be more likely to relish or savor these experiences, which ought to lead to viewing the world as more meaningful (a component of SOC) as they appreciate positive experiences in their lives. Second, when a person experiences gratitude, focus is likely to shift to what one has in life and perhaps even on what others do *not* have (cf. Lambert, Graham, & Fincham, in press). This grateful focus should be associated with a sense of contentment and could contribute to the notion that one has been treated fairly or justly by the world. Thus, these thoughts ought to make life seem both more meaningful and more comprehensible (both of which are components of SOC).

Finally, gratitude could lead a person to believe that he or she deserves positive outcomes and is capable of obtaining such outcomes. This combination of beliefs is likely to lead a person to believe that he or she knows what they need to do in order to obtain desired outcomes in the world. In turn, this likely results in feeling that the world is both more

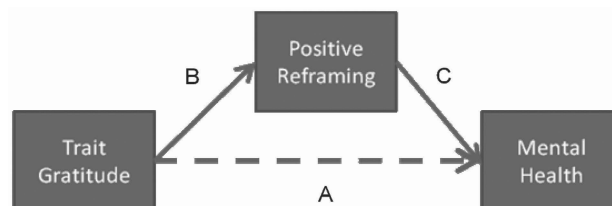


Figure 1. Theoretical model of the relationship between gratitude and sense of coherence.

manageable and more comprehensible (both of which are components of SOC). For all of these reasons, we suggest that gratitude leads to increased SOC.

*Gratitude and positive reframing (Path B).* There is a body of literature on what we term *positive reframing*, though it has been called by several different names, including benefit finding (e.g., Lechner, Carver, Antoni, Weaver, & Phillips, 2006), meaning making (e.g., Neimeyer, 1998, 2001), and positive reinterpretation (e.g., Carver, Scheier, & Weintraub, 1989). We refer to this concept as positive reframing and define the process as perceiving something that was previously viewed as negative in a positive light, for example, as an opportunity, a chance to learn something new, a chance to gain a new skill, or to deepen a relationship, and so on.

Most of the extant literature on this subject has focused on the positive effects of positive reframing (or its related terms) on individuals with serious, life-threatening illnesses. For example, among persons with cancer, benefit-finding was related to lower distress (Fife, 1995; Ho, Chan, & Ho, 2004; Katz, Flasher, Cacciapaglia, & Nelson, 2001; Taylor, Lichtman, & Wood, 1984; Urcuyo, Boyers, Carver, & Antoni, 2005; Vickberg, Bovbjerg, DuHamel, Currie, & Redd, 2000; Vickberg et al., 2001), greater perceived well-being (Carpenter, Brockopp, & Andrykowski, 1999; Curbow, Somerfield, Baker, Wingard, & Legro, 1993; Urcuyo et al., 2005), more positive affect (Carver & Antoni, 2004; Katz et al., 2001; Sears, Stanton, & Danoff-Burg, 2003; Tomich & Helgeson, 2002), higher self-esteem, less anxiety (Lewis, 1989), greater levels of current life satisfaction and expectation of future life satisfaction (Curbow et al., 1993), and fewer symptom reports and medical appointments (Stranton, Danoff-Burg, Sworowski, et al., 2002).

Another study on patients with multiple sclerosis similarly found that benefit finding was related to life satisfaction, positive affect, and dyadic adjustment (Pakenham & Cox, 2008). Neimeyer (1998, 2001) found that meaning making can have an ameliorative impact following the death of a loved one. We suspect that this process is also important to individuals that are not currently coping with a major life crisis and we hypothesize that individuals high in trait gratitude would be more likely to utilize positive reframing as a means for coping with negative events or situations in their lives.

There is some empirical evidence indicating that gratitude promotes such a process of positive reframing. For example, gratitude has been associated with making positive attributions (Wood, Maltby, Gillett, et al., 2008; Wood, Maltby, Stewart, Linley, & Joseph, 2008). Wood, Joseph, and Linley (2007) found that gratitude was positively correlated with a coping style called positive reinterpretation and growth, which is

conceptually similar to positive reframing. Watkins, Cruz, Holben, and Kolts (2008) requested that participants in a grateful processing condition write about the positive consequences from an unresolved memory that they felt they could now be grateful for. Compared to control participants, those in the gratitude condition reported more memory closure, less intrusiveness of the open memory, and less unpleasant emotional impact from the memory. Participants that wrote about the benefits of a traumatic event experienced significantly fewer health center visits than control participants 5 months after their writing experience (King & Miner, 2000). Thus, a grateful approach to negative life events might help reframe negative memories so that they have a less harmful influence.

*Positive reframing and sense of coherence (Path C).* Although the relationship between positive reframing and sense of coherence has not been empirically evaluated, it is plausible that positive reframing predicts SOC. Recall that sense of coherence is the perception of life as being manageable, meaningful, and comprehensible. It seems likely that seeing positive aspects of a daunting, typically unpleasant, task would make it seem a bit more manageable. One study of mothers whose young children died found that those who engaged in positive reframing reported less intense grief reactions and less complicated grief (Riley, LaMontagne, Hepworth, & Murphy, 2007), suggesting that perhaps the positive reframing made the grief more manageable.

It seems likely that positive reframing could also make certain negative events seem more meaningful. For example, perceiving unemployment as an unexpected opportunity to spend time with rarely seen children would likely make that experience more meaningful. In one study, cancer survivors used positive reframing as a means of making meaning out of their experience (Park, Edmonson, Fenster, & Blank, 2008). We therefore propose that positive reframing will be positively related to SOC. Thus, given our argument that participants high in dispositional gratitude will be more inclined to positively reframe events in their life and our proposition that positive reframing will also enhance participants' SOC by making life seem more manageable and meaningful, we hypothesized that positive reframing will mediate the relationship between gratitude and SOC.

### *The present research*

First, we tested the strength and robustness of the relationship between gratitude and SOC, after which we examined positive reframing as a mechanism that might account for the relationship. Thus, in Study 1, we tested the prediction that gratitude would be related



to one's SOC, even when controlling for several additional indicators of well-being. In Study 2, we assessed whether the relationship between gratitude and SOC persisted over time. In addition, we examined the mechanism proposed to underlie this relationship by testing whether positive reframing at Time 2 mediated the relationship between gratitude at Time 1 and SOC at Time 2.

### Study 1

Given that both gratitude and SOC have been related to several indicators of well-being, we thought it would be important to rule out several indicators of well-being, such as happiness, life satisfaction, and positive and negative affect as plausible third variable explanations for the relationship between gratitude and SOC. Thus, we examined whether gratitude accounted for variance in SOC over and beyond that which could be attributed to satisfaction with life, happiness, and affect. In addition, given that both gratitude and SOC tend to be valued, it is possible that measures of these constructs reflect socially desirable responding. We therefore we tested the hypothesis that social desirability was an alternative explanation for any findings.

### Method

#### *Participants*

Participants were 166 undergraduate students (145 female) enrolled in an introductory course on families across the lifespan at a university in the Southeastern United States. Participants earned partial course credit in exchange for their participation. They ranged in age from 18 to 37 with a median age of 20. Participants completed all of the following self-report measures online.

#### *Measures and procedure*

*Gratitude.* Trait gratitude was measured with the 6-item Gratitude Questionnaire (GQ-6; McCullough, Emmons, & Tsang, 2002). Example items include, 'I have so much in life to be thankful for,' and 'I am grateful for a wide variety of people.' Coefficient alpha for this measure in the present sample was 0.83.

*Sense of coherence.* Participants completed the short, 13-item form of Antonovsky's (1993) measure of SOC. The scale measures the extent to which individuals find life to be comprehensible (e.g., 'I have very mixed-up feelings and ideas,' reverse scored), manageable (e.g., 'I have feelings that I'm not sure I can keep under control,' reverse scored), and meaningful (e.g., 'I have the feeling that there's little meaning in the things I do in my daily life,' reverse scored). Evidence suggests the items load on one dominant factor, demonstrate good

test-retest reliability, and demonstrate criterion validity (Antonovsky, 1993). Coefficient alpha in the present sample was 0.81.

#### *Control variables: indicators of well-being and social desirability*

*Satisfaction with life.* Satisfaction with life was measured using the well known Satisfaction with Life scale (Diener, Emmons, Larson, & Griffin, 1985). This measure comprises 5-items (e.g., 'In most ways my life is close to ideal,' 'If I could live my life over again, I would change nothing'). Coefficient alpha in the present sample was 0.85.

*Positive and Negative Affect Scale.* Positive affect was measured using an adapted version of the Positive and Negative Affect Scales (PANAS), which is a 20-item, widely-used measure of positive and negative affect (Watson, Clark, & Tellegen, 1988). Participants were instructed to report how often they felt the 20 emotions in their life generally, thus assessing trait rather than state affect. The alphas for the current sample were 0.89 for positive affect and 0.89 for negative affect.

*Happiness.* Happiness was measured using a 4-item measure (Lyubomirsky & Lepper, 1999). An example item from this scale includes: 'Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you currently?' The alpha for this measure in the current sample was 0.86.

*Social desirability.* A shortened, 12-item version of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982) was used to assess the tendency to present oneself in a socially desirable manner. Reliability was not computed because this measure more closely resembles an index than a scale.

### Results and discussion

Our primary hypothesis was confirmed as the zero-order correlation between gratitude and SOC was strong,  $r(164) = 0.53, p < 0.001$ . In order to ensure that this relationship could not be explained by other measures of subjective well-being, we conducted a hierarchical regression analysis. On the first step, we entered the control variables satisfaction with life, positive and negative affect, happiness, and social desirability. On the second step, we entered gratitude scores. Higher gratitude scores remained significantly related to higher SOC scores, above and beyond the control variables ( $\beta = 0.14, p < 0.05$ ). Full results of this analysis are presented in Table 1. These data indicate a relationship between gratitude and SOC that goes beyond any shared relationship with satisfaction with life, affect, happiness, or social desirability.

In short, we found support for our initial hypothesis. However, these data represent only one instance in time, and to determine the direction of effects longitudinal data is needed. Also, these data do little to explain why or how gratitude affects sense of coherence. We addressed these two issues in Study 2.

**Study 2**

One objective of Study 2 was to determine whether gratitude predicts SOC prospectively. Evidence of such a prospective association would be consistent with the notion that gratitude builds enhanced SOC. A second objective of Study 2 was to examine a mechanism that might explain the relationship between gratitude and SOC. Consistent with our theoretical model, we hypothesize that individuals high in trait gratitude will be more likely to engage in positive reframing as a means of experiencing grateful feelings. Engagement in positive reframing, in turn, should be related to higher levels of SOC. In other words, positive reframing should mediate the relationship between gratitude and SOC.

**Method**

*Participants*

Participants were 254 undergraduate students enrolled in an introductory course on families across the lifespan at a university in the Southeastern United States.

Table 1. Summary of hierarchical regression analysis for variables predicting sense of coherence scores ( $N = 166$ ).

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i> value
<i>Step 1</i>				
Negative affect	-0.52	0.08	-0.48	0.00
Positive affect	0.20	0.09	0.16	0.02
Happiness	0.19	0.15	0.12	0.19
Satisfaction with life	0.44	0.50	0.09	0.23
Social desirability	0.17	0.22	0.04	0.49
<i>Step 2</i>				
Gratitude	0.49	0.23	0.14	0.03

Note:  $R^2 = 0.50$  for Step 1 ( $p < 0.01$ );  $\Delta R^2 = 0.01$  for Step 2 ( $p < 0.05$ ).

However, only the 201 participants (178 female) who completed both time points were included in the analysis. Participants earned extra credit in exchange for their participation. They ranged in age from 17 to 26 years with a median age of 20 years.

*Measures and procedure*

Participants completed all of the following self-report measures early in an academic semester and then again 4 weeks later.

*Gratitude.* Trait gratitude was again measured with the 6-item Gratitude Questionnaire (GQ-6; McCullough et al., 2002). Coefficient alpha for this measure in the present sample was 0.84 at Time 1 and 0.78 at Time 2.

*Sense of coherence.* To assess SOC, we once again administered the 13-item form of Antonovsky’s (1993) measure. Coefficient alpha in the present sample was 0.82 at Time 1 and 0.83 at Time 2.

*Positive reframing.* To assess positive reframing, we created a 4-item measure that included items such as ‘I’ve been trying to see my challenges in a different light, to make them seem more positive,’ and ‘I find it comes naturally for me to see the silver lining in storm clouds.’ Coefficient alpha in the present sample was 0.78 at Time 1 and 0.82 at Time 2.

**Results and discussion**

*Attrition*

We did not anticipate any meaningful differential effect due to attrition. However, to be sure we compared Time 1 gratitude, SOC, and positive reframing scores of those that dropped out with those who remained in the study and found no differences between the groups in level of gratitude  $t(254) = 0.50, p = 0.62$ , positive reframing  $t(254) = -0.58, p = 0.57$ , or SOC  $t(254) = 0.05, p = 0.96$ . Thus, attrition does not seem to have affected the results of our study.

*Relationship between gratitude and sense of coherence*

We tested our hypotheses with structural equations modeling (SEM) using Full Information Maximum

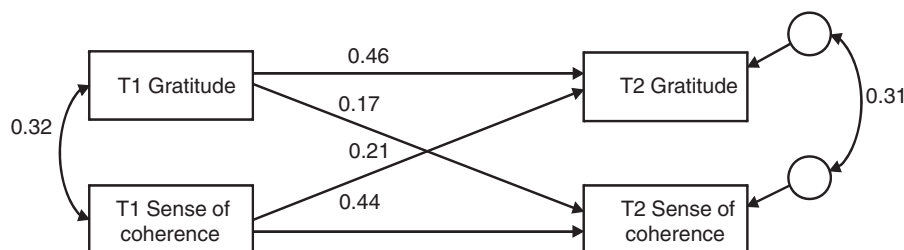


Figure 2. Cross-lagged stability model. Note: All paths were significant.

Likelihood estimation (FIML). FIML computes maximum likelihood estimates and standard errors for missing data by taking into account all of the data in the structural model. This procedure provides efficient estimation of statistical parameters from incomplete data, and thus allows retention of the complete sample for all analyses (Little & Rubin, 1987; Rubin, 1976; Schafer, 1997). Parameter estimates from FIML provide less biased information than other methods of dealing with missing data such as listwise deletion, pairwise deletion, or mean imputation (Schafer, 1997).

First, we examined a cross-lagged stability model involving gratitude and SOC. Significant cross-lagged effects reflect the presence of a relationship beyond that which can be accounted for by the stability of the constructs and the magnitude of their association at Time 1 (see Figure 2). Because this is a fully saturated model without any degrees of freedom, estimates of model fit do not provide meaningful information. As hypothesized, the cross-lagged relation from Time 1 gratitude to Time 2 SOC yielded a significant parameter estimate ( $\beta=0.17, p < 0.01$ ). However, SOC also significantly predicted later gratitude ( $\beta=0.21, p < 0.01$ ), suggesting possible bi-directional effects. Although we did not hypothesize an effect from SOC to gratitude, it does seem to make intuitive sense: it may be easier to experience gratitude for someone who can make sense of life. The results suggest that gratitude and SOC may support each other leading to a benevolent cycle or an upward spiral.

*Analyses of mediation of positive reframing*

Initial gratitude was significantly related to the mediator, positive reframing,  $r(273)=0.32, p < 0.01$ . Also the mediator, positive reframing, was significantly correlated to the dependent variable, T2 SOC,  $r(273)=0.48, p < 0.01$ . To test whether positive reframing functioned as a mediator between initial Gratitude and later SOC, we followed the bootstrapping procedure recommended by MacKinnon, Fritz, Williams, and Lockwood (2007). Specifically, we examined the product of the two paths that comprise the indirect effect divided by the pooled estimate of their standard error ( $\alpha\beta/\sigma\alpha\beta$ ) as this estimate is less

prone to some of the problems, such as an inflated Type I error, that arise in other common methods for testing mediation, such as the Sobel test (Sobel, 1982). A confidence interval for the effect size of the indirect path was computed and if the values between the upper and lower confidence limit do not include zero, this indicates a statistically significant mediation effect.

The 95% confidence interval for the current analysis of positive reframing as a mediator between T1 Gratitude and T2 SOC was 0.01 to 0.03 and did not include zero, even controlling for T1 SOC, indicating statistically significant mediation. Also, the direct effect from T1 Gratitude to T2 SOC became non-significant when adding positive reframing into the model ( $\beta=0.07, p > 0.05$ ), demonstrating that full mediation occurred (see Figure 3). Our hypothesis was confirmed as positive reframing fully mediated the relationship between dispositional gratitude and SOC. We expected a relationship between gratitude and positive reframing given that gratitude has been related to making positive attributions (Wood, Maltby, Gillett, et al., 2008; Wood, Maltby, Stewart, et al., 2008). Once people have reframed a negative situation they should perceive it to be more manageable and meaningful, just as cancer survivors used positive reframing to make meaning of their experience (Park et al., 2008).

**General discussion**

In Study 1 we tested the strength in the relationship between trait gratitude and SOC, and found it to be quite strong ( $r=0.51$ ). The relationship held up even when controlling for several indicators of psychological well-being, including positive and negative affect, happiness, and life satisfaction. Furthermore, we found that social desirability was not an alternative explanation for this relationship. The objective of Study 2 was to test the direction of the relationship between these two variables and to examine a mechanism that might explain this relationship. A cross-lagged model indicated that initial gratitude scores predicted later SOC, even when controlling for initial levels of the variables. Taken together, these studies provide evidence that gratitude is related to enhanced SOC.

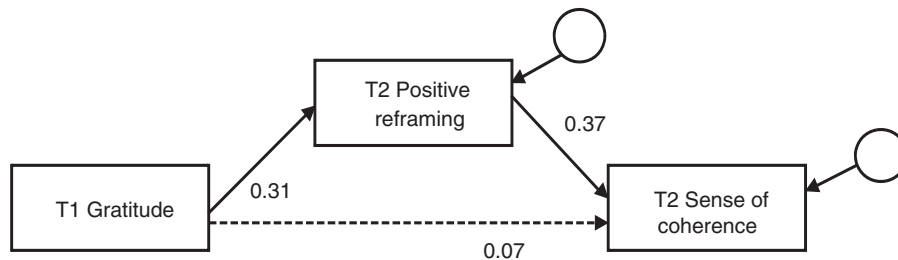


Figure 3. Positive reframing as a mediator between T1 Gratitude and T2 Sense of Coherence (controlling for Time 1 Sense of Coherence; not shown). Note: --- indicates path was not significant.

### ***Gratitude and positive reframing: strengths and weaknesses***

Our theoretical model was supported as the data indicated that individuals with higher dispositional gratitude are more likely to use positive reframing as a way of interpreting negative events, which then helps them to view life as more manageable, meaningful, and comprehensible. This appears to be a consequence of positive reframing. In addition, much of the research to date has shown salutary effects for positive reframing, such as less unpleasant memory impact, more memory closure, and less intrusiveness of the open memory (Watkins et al., 2008). However, there may be some unforeseen negative aspects of positive reframing. For example, perhaps positive reframing could lure an individual into complacency and be demotivating. For instance, in the example of the unemployed individual, perceiving the unemployment as an unexpected opportunity to spend time with children could be beneficial for family relationships, but might hinder job seeking motivation. Negative emotions have important functions and positive reframing may protect individuals from helpful, albeit painful, negative emotions. Furthermore, positively reframing an abusive relationship could prevent an individual from exiting a deleterious situation. These possibilities should be examined by future research.

### ***Possible implications for broaden-and-build theory***

One particular theory relevant to gratitude and its relationships with other positive outcomes is broaden-and-build theory (Fredrickson, 1998, 2001). Broaden-and-build theory suggests that the experience of positive emotions broadens the repertoire of thoughts and actions available to a person at a given point in time (e.g., Fredrickson & Branigan, 2005). Over time, the repeated experience of positive emotions builds the social and psychological resources available to an individual (Fredrickson, 1998, 2001). We were unable to directly test broaden-and-build theory because we examined dispositional rather than state gratitude. However, gratitude is also perceived as a state or even a positive emotion that should serve broaden-and-build functions (Fredrickson, 2004) and one possible interpretation of our results may be that accumulated grateful states resulting from a series of positive reframes are likely to build the psychological resource of SOC over time.

Fredrickson proposes some mechanisms by which gratitude may broaden-and-build. For example, gratitude seems to increase one's desire to reciprocate favors in creative, rather than in retaliatory, ways (Komter, 2004). For example, Graham (1988) found a positive relationship between a child's hypothetical gratitude for being chosen by a team captain and

his/her expectations of reciprocating with a gift. This finding illustrates that rather than reciprocating in a tit-for-tat fashion (e.g., picking the person in return when team captain), the children in the study thought of more creative ways to reciprocate (e.g., by giving a gift), demonstrating that gratitude may lead to creative thinking as one attempts to reciprocate. Also, Lambert, Fincham, Stillman, and Dean (2009) found that participants induced with gratitude felt more satisfaction with life, which decreased their materialistic strivings. Algoe and colleagues (2008) found that gratitude built relationship enhancement motivations. Finally, consistent with the central tenant of the theory that positive emotions broaden one's thought-action repertoire, Watkins, Scheer, Ovnicek, and Kolts (2006) found gratitude was associated with total number of prosocial action tendencies and indebtedness was not, suggesting that gratitude is associated with a broader array of responses to a benefit. These findings point to the potential role of gratitude in broadening and building, and the results of our studies seem to provide further evidence consistent with this process.

### ***Implications for research on gratitude and sense of coherence***

Our findings suggest that trait gratitude is related to increases in trait SOC and it could be that manipulating levels of gratitude may positively affect psychological well-being. Emmons and McCullough (2003) found that when participants wrote about things for which they were grateful on a daily or weekly basis (for a relatively short period of time) they experienced higher levels of psychological well-being. Our findings also suggest that gratitude, through positive reframing, can have positive effects on psychological well-being; however, this needs to be tested by experimental research.

It seems plausible that thinking that one's world is meaningful, comprehensible, and manageable should, in turn, promote psychological well-being. Thus, it seems likely that gratitude might have positive effects on psychological health through its association with enhanced SOC, which should be tested by future research. Consistent with this idea, researchers have long known that external locus of control (which is conceptually similar to feeling that one's world is not manageable) is associated with anxiety (Watson, 1967) and depression (Abramowitz, 1969), and others have suggested that anxiety results directly from the lack of meaning in one's life (Lindgren, 1956). Future research should endeavor to determine how increasing gratitude leads to enhanced psychological well-being; our results suggest that it would be worthwhile to consider SOC as a possible mechanism.



We proposed (Lambert et al., in press) that there are two types of gratitude, benefit-triggered gratitude (elicited by specific benefits conferred by another) and generalized gratitude (elicited by often transpersonal appreciation for that which is valuable or meaningful to oneself), and that generalized gratitude is more closely aligned with mental health indicators. Future research should test the possibility that generalized and benefit-triggered gratitude have different levels of association with SOC once measures of these separate constructs have been developed and validated. We propose that generalized gratitude would be more strongly associated with enhanced psychological well-being whereas benefit-triggered gratitude would be more strongly associated with increased availability of social resources. Future research should test these possibilities. Finally, our findings provide information about one determinant of SOC. That is, gratitude appears to lead to enhanced SOC.

### *Implications for practitioners*

Given that positive reframing mediated the relationship between gratitude and SOC, it may also operate as a mechanism linking gratitude and other important mental health outcomes such as depression. The connection between gratitude and positive reframing ought to be further examined and tested as a plausible coping mechanism or mental health building strategy to be used in interventions or clinical practice. Also, as reviewed earlier, SOC is associated with a number of mental health outcomes. People with higher SOC are less likely to be depressed (e.g., Lundberg & Peck, 1994; Ying et al., 2007) and to have several other psychological disorders (Ristkari et al., 2006). Given this circumstance, clinicians might consider whether low SOC *causes* some of these problems. That is, it is plausible that if one does not believe that life is meaningful (one component of low SOC), this leads to depressive thinking. Moreover, if one believes that one cannot control his or her life (i.e., that it is not manageable) this too could lead to depressive thinking. Consistent with this notion, Seligman's classic research on learned helplessness suggests that perceived inability to control stressors in one's life is conceptually very similar to depression (Seligman, 1972; Seligman & Groves, 1970; Seligman, Maier, & Geer, 1968). Our findings suggest that attempts to enhance gratitude could improve some symptoms to the extent that those symptoms are caused by low SOC.

### **Summary**

In sum, we have presented evidence from two studies suggesting that gratitude is associated with enhanced SOC through the process of positive reframing. This

is likely to be important given SOC's associations with physical and mental health outcomes as well as with social resources (e.g., Feldt et al., 2004; Jorgensen et al., 1999; Lundberg & Peck, 1994). These findings contribute to theory on processes by which gratitude may impact mental health. Moreover, they suggest that clinicians should consider inducing gratitude in clients who do not believe their lives are manageable, meaningful, or comprehensible.

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