IMPLICIT GRATITUDE THEORIES

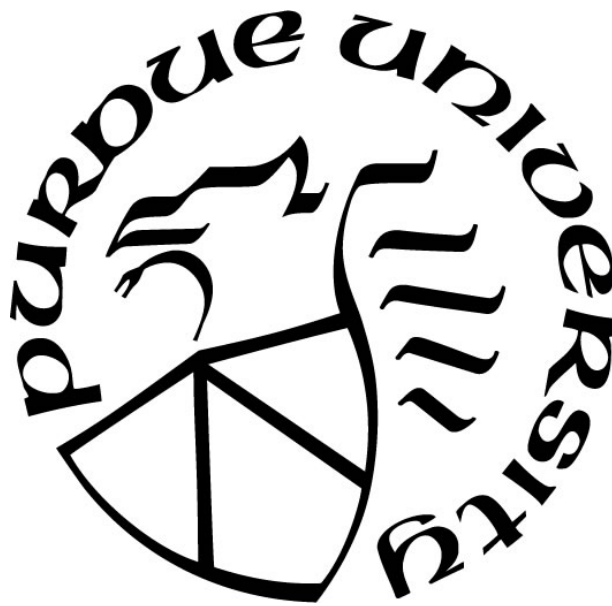by

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ABSTRACT

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Theorists posit that despite the well-known benefits of feeling grateful, the adoption of a grateful perspective is not always easy and the occurrence of a gratitude-worthy event is not always readily salient. Indeed, to experience a sense of gratitude may partly require that people actively regulate their cognitive and attentional resources to notice, appreciate, and subsequently respond to a gratitude event. Drawing from Dweck et al.'s (1995) implicit theories framework, I examined whether implicit beliefs concerning the development of various attributes/characteristics differentially influences people's feelings of gratitude. Implicit theories framework stipulates that people adopt one of two learning perspectives – namely, an entity or incremental perspective. Those with an incremental perspective believe that certain characteristics (e.g., emotions, attributes) are not fixed, but are dynamic and changeable, and that their ability in a certain area can be improved, and that the associated outcomes are linked to their own diligence and labor. By comparison, people with an entity perspective believe certain characteristics are static and cannot be easily changed, and that the outcomes associated with a particular attribute are generally decoupled from their own labors. I reasoned that because incremental (vs. entity) theorists are confident that they can actively regulate their behavior to experience a desired emotional state, they should also believe that they can regulate their feelings of gratitude. In doing so, incrementals (vs. entity) should be more likely to expend cognitive

and attentional resources to notice and attend to a salient gratitude event, capitalizing on opportunities to practice cultivating a grateful perspective. With the current studies, I used correlational, longitudinal, and experimental methods to examine both the fundamental association between implicit gratitude beliefs and gratitude, and whether the effect of implicit gratitude beliefs (i.e., incremental vs. entity) on feelings of gratitude differ as a function of gratitude event salience. I hypothesized that compared to entity theorists, incremental theorists should be more sensitive and attentive to a salient (vs. less salient) gratitude event, and as a result, incrementals (vs. entities) should exhibit higher levels of gratefulness/gratitude. The results across six studies provided reliably consistent evidence in support of the key hypotheses. Gratitude was positively associated with an incremental perspective and negatively associated with an entity perspective; when the gratitude event was salient (vs. less salient) incrementals were more attentive to the opportunity, and their level of gratitude was systematically higher compared to those with an entity perspective, and across the salience conditions, the difference between incrementals' and entities' gratitude levels was also partially explained by gratitude motivation and increased attentiveness to the gratitude event.

INTRODUCTION

Gratitude, conceptualized as both an emotional response and a dispositional orientation[1], is defined as a general tendency to both take notice of and to appreciate the positive aspects in one's life (Wood, Froh, & Geraghty, 2010). Abundant evidence links gratitude to myriad benefits associated with well-being, including increased happiness and life satisfaction, and decreased loneliness and depression (for reviews see Nelson & Lyubomirsky, 2016; Wood et al., 2010). Despite the benefits of gratitude, theorists posit that feeling, expressing, or behaving gratefully is not always easy. Gratitude-worthy events are not always obvious or salient, and at times, people may need to actively regulate their attentional efforts to take notice of, and subsequently respond to a gratitude-worthy event (e.g. Emmons & Mishra, 2011; Tudge, Freitas, & O'Brien, 2015). As yet, however, there is no empirical evidence examining this question; the aim of the current project is to address this gap. To do so, I draw from Dweck et al.'s (1995) implicit theory framework to examine how people's beliefs concerning the development of various attributes/characteristics differentially influence the magnitude and frequency of their gratitude. In the sections to follow I overview relevant gratitude research, followed by a discussion of the implicit theory framework as it relates to grateful experiences.

Gratitude

Typical definitions situate gratitude as an emotional response that is elicited when people receive a benefit or experience a positive outcome derived from an external source

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[1]State and trait conceptions of gratitude are interrelated in that individuals higher in dispositional gratitude report more frequent and intense state gratitude experiences; likewise, actively cultivating gratitude experiences positively influences people's trait-level gratitude (McCullough, Emmons, & Tsang, 2002; Wood et al., 2008).

(e.g., McCullough, Kilpatrick, Emmons, & Larson, 2001; McCullough, Emmons, & Tsang, 2002; Wood, Maltby, Stewart, Linley, & Joseph, 2008). It is also true, however, that the mere existence of a *gratitude-worthy event* does not always culminate in a grateful experience; rather, people may need to actively take notice and assess an event as one worthy of gratitude. People may better experience gratitude when they are able to adopt an orientation that allows them to both notice the positive aspects/value of a gratitude-worthy event (to them) and to attribute the event, in part, as deriving from an external source outside the self[2] (e.g., Exline & Hill, 2012; McCullough et al., 2001; Weiner, 1985; Wood et al., 2008).

In practice, however, recognizing and appreciating gratitude-worthy events is not particularly always easy, and people may routinely fail to notice potential opportunities to experience and/or express gratitude. For example, in a study examining Americans' emotional experiences, only 7% of adults listed gratitude as an emotion that they experience regularly and often (Sommers & Kosmitzki, 1988). This may be because in many circumstances, gratitude-worthy events are not readily salient or obvious, in which case people may not experience gratitude unless they regulate their efforts to take notice and attend to the value of the event. Gratitude-worthy events that are not especially salient may remain relatively unnoticed and unappreciated. As a concrete example, evidence suggests that romantic partners fail to notice roughly half of one another's thoughtful acts and behaviors, resulting in less gratitude and, in turn, lower relationship satisfaction (Algoe, Gable, & Maisel, 2010).

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[2]External sources could be other persons, spiritual forces (e.g., God), or non-social agents (e.g., Nature, Fate).

Moreover, evidence suggests that even when people intend to engage in a gratitude building task, they do not necessarily follow through on these intentions – work examining self-initiated gratitude exercises found that only 11.5% of the sample started the exercise, 3.5% continued beyond the first day, and only 2.7% actually fully completed the exercise (Kaczmark et al., 2013). Similarly, even when people notice the kind or helpful actions of others, there are likely individual and contextual factors that could make it more difficult for people to fully appreciate the help/benefit they have received. For instance, those who have lower trait gratitude typically perceive beneficial help as less valuable and less genuine, resulting in a lower level of state gratitude (Wood et al., 2008; Exline, 2012). Evidence also shows that when people are highly self-focused, they tend to interpret the help they receive from others in a more negative and threatening light (e.g., viewing help from others as less genuine, more controlling, and threatening to the self-concept); as a result, they experience an increase in negative emotions (e.g., feeling indebted, weak and ashamed) and report feeling less gratitude (Algoe & Stanton, 2012; Exline, 2012; Kruse, Chancellor, Ruberton, & Lyubomirsky, 2014; Mathews & Green, 2010). They also experience less closeness with those who have helped them, which would typically represent a positive social outcome that accompanies a grateful experience (Mathews & Green, 2010).

As noted earlier, experiencing gratitude is not necessarily easy and in certain instances may even be quite challenging; as such, a sense of gratefulness may not be readily experienced by all people across all situations. It may be difficult at times for some people to notice and appreciate the existence of a particular benefit, and by extension, may interfere with their capacity to experience a sense of gratitude. To

experience feelings of gratefulness may require that people first actively regulate their efforts to notice and interpret an event as one worthy of gratitude. In turn, people who habitually or routinely engage in such attentional regulation should be more likely to develop greater levels of gratitude.

Although sparse, evidence to date suggests that this might be the case. For example, people randomly assigned to practice noticing and appreciating the positive aspects in their lives (e.g., by keeping a gratitude journal) experience subsequent increases in their gratitude level; across this work, people also experience greater subjective well-being as a result of increased gratitude (Emmons & McCullough, 2003; Froh, Sefick, & Emmons, 2008; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011; Sheldon & Lyubomirsky, 2006). Moreover, to the extent that people exert significant labors to practice gratitude (as rated by independent coders), they also experience greater gains in gratitude and subjective well-being (Lyubomirksy et al., 2011). The limited evidence available suggests that when people are instructed to regulate their behavioral efforts to take note of positive life events it leads to an increase in feelings of gratefulness. To examine these issues, I conceptually situate people's beliefs about gratitude within the framework of Dweck et al.'s (1995) implicit theory. In what follows, I outline the basic tenants of implicit theory framework and its implications for gratitude more specifically.

Implicit Theory

Implicit theories framework stipulates that people can adopt one of two perspectives regarding the development or improvement of various personal skills and

attributes – namely, an entity or incremental perspective (Dweck, Chiu, & Hong, 1995; Yeager & Dweck, 2012).

People who hold an entity perspective believe that some attributes, characteristics, or skills (e.g., intelligence, social competence) are static and relatively immutable (i.e., an in-born trait). They believe that their ability/capacity in certain areas cannot be changed or improved, and that the outcomes in a particular area are, for the most part, decoupled from their own labors. As a result, entity theorists presume that they lack the inherent ability necessary to succeed in a given area (e.g., academic achievement) and make little effort to regulate their behaviors/actions as a means to increase their success in that particular area; they will even withdraw from working on a task if circumstances permit (Blackwell et al., 2007; Hong et al., 1999).

By comparison, those who hold an incremental perspective believe that certain attributes, characteristics, and skills are not fixed, but rather, are dynamic and relatively changeable. Unlike entity theorists, they believe that their ability/capacity in certain areas can be improved and that the associated outcomes are linked to their own diligence and hard work (Blackwell, Trzesniewski, & Dweck, 2007; Hong, Chiu, Dweck, Lin, & Wan, 1999). Incrementals believe that they have the fundamental ability needed for success in a given area and effortfully regulate their behaviors to improve their abilities, presuming that such changes will lead to successful (e.g., improved) outcomes in that particular area.

Research guided by this framework has produced consistent effects across a broad range of domains, including: intelligence, social ability, morality, emotion regulation, and romantic relationships. These perspectives can also be distinct across different domains in that the same individual can have an incremental theory in one area and an entity theory

in another (Dweck et al., 1995; Yeager & Dweck, 2012). Perhaps not surprisingly, adopting an incremental (vs. entity) perspective is associated with improved outcomes across a variety of domains. For example, in the academic domain, 7th-grade students with an incremental (vs. entity) theory of intelligence achieved better academic outcomes at the end of their 8th-grade year; interestingly, this effect was mediated by the students' favorable beliefs concerning the function and consequences of their own labors (Blackwell et al., 2007; see also Aronson, Fried & Good, 2002). Likewise, romantic partners who believe that relationship problems can be overcome (i.e., incremental perspective of relationships) experience better relationship outcomes (i.e., satisfaction and longevity) compared to partners who interpret relationship problems as a signal that the couple is simply not destined to remain together (i.e., entity perspective of relationships) (Knee, 1998; Knee, Patrick, & Lonsbary, 2003).

Drawing from the work on implicit theories, I reasoned that the frequency and magnitude of people's gratefulness should be influenced by their implicit beliefs (incremental vs. entity) concerning gratitude. To date, there is no work examining whether individuals exhibit or adopt a more incremental or entity perspective with respect to gratitude, although prior evidence in the emotion regulation domain (Tamir, John, Srivastava, & Gross, 2007) provides an instructive groundwork to understand how grateful experiences could be influenced by people's implicit beliefs (this work will be discussed in the next section).

Implicit Theory and Gratitude

Although the implicit theories framework is typically applied to more stable "trait-like" domains, it can also be conceptualized within the context of more temporary

and fleeting emotional responding (e.g., Tamir et al., 2007). Within this more dynamic context, the adoption of either an incremental or an entity view would capture the extent to which individuals believe that they can effortfully regulate their situational attention and resources to achieve a desired emotion.

Importantly, those with an incremental perspective believe that they can cognitively regulate their current emotional experience, directing their attentional focus toward more positive (vs. negative) aspects of their environment, and/or cognitively (re)interpreting stimuli in a more positive (vs. negative) light (e.g., Carl, Soskin, Kerns, & Barlow, 2013). Incremental theorists attend to features of the environment, regulating (and/or changing) their situational behavior in a manner that leads to experiencing a desired emotion. By comparison, entity theorists do not believe that they can cognitively regulate their emotions; rather they view their emotions as essentially uncontrollable and relatively unchangeable, and believe that effortful attempts to modulate their current emotion will be unsuccessful. For example, compared to entity theorists, incrementals are more confident in their ability to regulate their emotions across different scenarios (e.g., after doing poorly on a test); presumably, incrementals' confidence is grounded in their reported willingness to engage in strategic behaviors (e.g., cognitive reappraisal) that are aimed at regulating their current emotion (Tamir et al., 2007). Although emotion regulation was not directly measured, the evidence suggests that incremental (vs. entity) theorists were more successful in their regulatory endeavors in that they experienced significantly more positive and less negative emotions over time[3].

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[3]This finding was consistent for both self- and peer-report.

Reasoning from Tamir et al. (2007), I posit that holding an incremental or entity perspective should also apply to gratitude, in that these perspectives should differentially influence the frequency and extent to which an individual experiences a sense of gratefulness. Recall that adopting a grateful perspective is not always easy; individual and contextual factors can make gratitude-worthy features or events difficult to notice and/or fully appreciate. As such, people may need to attentively take notice that a gratitude-worthy event has actually occurred and to interpret the particular event as one that is worthy of grateful feelings.

Following implicit theory, I reasoned that because incremental (vs. entity) theorists are confident that they can actively regulate their behavior to experience a desired emotion, they should believe that they can regulate their feelings of gratitude. As a result, incrementals should be more likely to expend cognitive and attentional resources to notice and attend to a gratitude-worthy event. Incremental (vs. entity) theorists should be more sensitive to salient gratitude-worthy events, such that they can successfully capitalize on these opportunities to experience more frequent and intense state feelings of gratefulness, which should likely lead to an overall greater dispositional level of gratitude.

By comparison, those with an entity perspective should hold the belief that their feelings of gratefulness cannot be successfully regulated, and are essentially beyond their cognitive control. Entity individuals should expend less cognitive and attentional resources to notice and attend to gratitude-worthy events, and they should be less sensitive to such events in general, failing to capitalize on salient opportunities to feel or

experience gratitude. As a result, entity individuals' grateful experiences should be more limited, leading to both lower state and trait gratitude levels.

The aim of the current studies is to examine whether people have different implicit beliefs (incremental vs. entity) concerning gratitude, and whether these beliefs, in turn, differentially affect the magnitude and frequency of people's gratitude. In Studies 1 and 2, I initially examine the basic relationship between implicit gratitude beliefs (i.e., incremental vs. entity) and people's trait and state levels of gratitude, with the general expectation that incrementals (vs. entity) should exhibit stronger associations with both trait and state gratitude. Recall that incremental individuals (vs. entity) are expected to experience more gratitude, in general, because they should be more sensitive to salient gratitude-worthy events and should be more willing to expend cognitive resources to notice and attend to such events. As such, I expect incrementals to capitalize on these opportunities, and as result I expect incrementals (vs. entity) to exhibit greater levels of gratitude. In Studies 3-6, I use experimental methods to examine this question – do incremental and entity theorists' gratitude levels differ as a function of the salience of a gratitude-worthy event.

STUDY 1

Overview

The focus of Study 1 was to initially examine the degree to which people's implicit gratitude beliefs (i.e., incremental vs. entity) are associated with their sense of gratefulness. To do so, participants' trait level of gratitude and their implicit gratitude beliefs were measured with the expectation that an incremental perspective should be more positively related to gratitude than an entity perspective. From an exploratory vein, I also examined whether the association between implicit gratitude beliefs and trait gratitude is mediated by the degree to which participants exert deliberate attentional effort towards cultivating gratitude, in general. Overall, I expect that those with an incremental (vs. entity) perspective should be more deliberately attentive to the notion of being grateful, which in turn, should amplify their gratitude level.

Method

Participants

Participants were 189 M-Turk workers[4,5] (86 women, 1 individual identified as non-binary). The mean age of the sample was 38.69 (SD = 12.96). The ethnic composition of the sample was 85.20% White/Caucasian; 5.29 % Hispanic; 4.23% Black; 1.06% Native American, and 4.24% who identified with a different/other ethnic category (see Appendix C for a note concerning ethnicity).

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[4]Participants (N = 14) who identified with an Asian ethnic background were excluded from the analyses.
[5]Six participants were removed with duplicate M-Turk worker IDs.

Measures

Trait gratitude. To assess trait gratitude, participants completed the GQ-6 (McCullough, Tsang, & Emmons, 2004). The GQ-6 is comprised of 6 items (α = .86; e.g., "I have so much in life to be thankful for"; "If I had to list everything that I felt grateful for, it would be a very long list") anchored on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

Implicit gratitude theories. I modified Dweck's (1999) implicit intelligence measure to assess participants' implicit beliefs about *gratitude*. Four items assess incremental beliefs (α = .91, e.g., "You can always substantially change how grateful you are"), and four items assess entity beliefs (α = .91, e.g., "To be honest, you can't really change how grateful you are"). All items are on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. The full scales for all studies are detailed in Appendix D.

Implicit intelligence theories. Participants' implicit beliefs about intelligence (incremental vs. entity) were also included for comparison with incremental beliefs about gratitude (c.f., Tamir et al., 2007). The Implicit Theories of Intelligence Scale (Dweck, 1999) consists of 4 items that assess incremental beliefs about intelligence (α = .93; e.g., "No matter who you are, you can significantly change your intelligence level"), and 4 items that assess entity beliefs about intelligence (α = .95, e.g., "You have a certain amount of intelligence, and you really can't do much to change it"). All items are on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

Attentiveness. Participants were asked 2 face-valid items assessing the degree to which they, in general, exert deliberate attention towards cultivating gratitude: "Even when times are hard, I make a conscious decision to adopt a grateful outlook on my

circumstances"; "I make a conscious, deliberate effort to try and cultivate a sense of gratitude in my daily life" ($\alpha = .82$). All items are on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

Procedure

After agreeing to the "HIT" on Amazon's Mechanical-Turk, participants completed informed consent and were told that they would answer a number of different personality questionnaires. Participants then completed the measures described above as well as basic demographic information. The key study measures were embedded within a number of filler questionnaires (e.g., Big Five) to avoid arousing suspicion as to the purpose of the study. After completing study measures, all participants were thanked and fully debriefed.

Results

As expected, an incremental perspective was strongly positively correlated with trait gratitude, $r(187) = .47, p < .001$, whereas an entity perspective was strongly negatively correlated with trait gratitude, $r(186) = -.46, p < .001$. There was also a significant correlation between implicit gratitude beliefs (combined) and trait gratitude, $r(186) = .47, p < .001$. Moreover, in a simultaneous regression controlling for participants' implicit beliefs about intelligence, both incremental gratitude, $\beta = .44, SE = .07, t(186) = 6.28, p < .001$, and entity gratitude beliefs, $\beta = -.43, SE = .07, t(186) = -6.12, p < .001$, remained significant predictors of trait gratitude. By comparison, after controlling for participants' implicit beliefs about gratitude, neither incremental intelligence, $\beta = .01, SE = .07, t(186) = .08, p = .922$, nor entity intelligence beliefs, $\beta =$

–.04, *SE* = .07, *t*(186) = -.52, *p* = .602, were significantly related to trait gratitude.

Additional correlations and descriptive statistics are presented in Table 1.

As an initial exploration, I examined the correlations between implicit gratitude

and attentiveness. Consistent with expectations, implicit gratitude (incremental and entity

combined[6]) was significantly correlated with attentiveness, *r*(186) = .30, *p* < .001, such

that as incremental beliefs increased attentiveness increased. Likewise, the incremental

subscale was also significantly positively correlated with attentiveness, *r*(187)= .38, *p* <

.001, while the entity subscale was significantly negatively correlated, *r*(186)= -.18, *p* =

.014 (see Table 1 for descriptive statistics). To further explore this relationship, I

conducted a mediation analysis with implicit gratitude beliefs as the predictor variable,

attentiveness as the mediator, and trait gratitude as the outcome variable (see Figure 1 for

a descriptive model). Standard regression procedures were followed (i.e., predictor

variables mean-centered). The results showed that a more incremental perspective was

positively associated with attentiveness, *B* = .34, *SE* = .08, *p* < .001, 95%CI [.184, .495],

and attentiveness, in turn, was positively associated with trait gratitude, *B* = .47, *SE* = .05,

p < .001, 95%CI [.380, .564]. Importantly, the indirect effect was also significant,

providing support for mediation, *b* = .160, *SE* = .04, *p* < .001, 95%CI [.081, .240]. That

is, the positive association between implicit beliefs and trait gratitude may be partly

explained by incrementals' (vs. entities') tendency to take notice of and attend to

gratitude-worthy events.

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[6]Consistent with prior work (e.g., Job, Dweck, & Walton, 2010), for the current studies I created a composite of implicit gratitude by averaging the incremental and entity (reverse-scored) items, such that higher scores indicate a more *incremental* gratitude perspective.

Discussion

Although the findings from Study 1 are limited by the correlational design, they provide initial evidence that implicit gratitude is significantly linked with dispositional gratitude; an incremental perspective was strongly positively associated with dispositional gratefulness, whereas a strong negative association with gratefulness emerged for an entity perspective. Further analyses also suggest that attentiveness partially mediated the relationship between implicit gratitude beliefs and trait gratitude. The primary aim of Study 2 is to replicate these findings.

STUDY 2

Overview

The findings from Study 1 initially demonstrate that incremental (vs. entity) beliefs are strongly and positively associated with trait gratitude. As noted earlier, the primary aim of Study 2 is to replicate the results from Study 1. To do so, I use a longitudinal design, which involved culling data from a larger study examining whether regularly practicing gratitude improves women's satisfaction with their physical appearance[7]. After completing a baseline assessment of individual difference variables – including implicit gratitude beliefs – participants completed a weekly online survey in which they were instructed to write about their grateful experiences. Relevant to the current work, I reasoned that incrementals (vs. entities) should more attentively engage in the gratitude writing exercise because they believe that achieving positive outcomes (i.e. increased gratitude) is related to their labors, and as a result they should exhibit a stronger sense of gratefulness.

Method

Participants

Participants were 66 undergraduates ($M_{age} = 18.58$, $SD_{age} = .81$) who participated as part of a larger longitudinal survey that was administered during the Fall 2017 semester[8]. The ethnic composition of the sample was 65.56% Caucasian/White3.33% Black, 2.22% Hispanic/Latino, and 2.22% who identified as a different/other ethnicity.

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[7]Although this study was focused on women, the findings offer exploratory insight into the relationship between implicit gratitude beliefs and gratefulness. For generalizability, all samples in the remaining studies include both women and men.

[8]The full sample included 241 undergraduates who participated in an initial baseline session; 188 agreed to further complete a series of weekly online surveys; the current sub-sample includes only participants

Procedure

Participants were recruited from an introductory psychology pool for a study ostensibly about college students' everyday experiences. They were given partial course credit for participating in an initial lab session where they completed the same measures used in Study 1 for trait gratitude ($\alpha = .81$) and implicit gratitude theories[9] ($\alpha_{incremental} = .93$; $\alpha_{entity} = .91$).

After completing baseline measures, participants were invited to complete a series of weekly online surveys for additional monetary compensation; these surveys were administered online once a week for a total of 8 weeks. At the start of each week, participants were emailed a link to complete the online survey. Participants were given 48 hours to complete the survey and were sent email reminders at regular intervals asking them to finish the survey if they had not done so already.

Upon accessing the survey, participants were instructed to *write about a recent way that you experienced gratitude and describe your experience of gratitude in detail – what does being grateful feel like, and how does it affect you personally*?" Participants were required to write for at least 2 minutes but could write for a longer duration if they wished. The essays were coded by three independent, trained coders for attentiveness[10] (ICC = .73) and state gratitude[11] (ICC = .87); these measures serve as the key outcome variables. All coding responses were made on a 1 to 7 scale. After finishing the writing task, participants also completed a 3-item state gratitude measure anchored at 1 (*not at*

randomly assigned to write about gratitude. Participants ($n = 25$) who identified as Asian were also excluded from analyses.

[9]Participants also completed other individual difference items not relevant to the current work.

[10]How much attentional effort is this participant putting into the writing exercise (adapted from Luybomirsky et al., 2011)?

[11]How much did this person feel grateful?

all) and 11 (*very much so*) (i.e., I currently feel grateful; I currently feel appreciative;

Right now, I have so much in life to be grateful for). Upon completion, participants were

thanked and fully debriefed.

<div align="center">**Results**</div>

Primary Analyses

Consistent with Study 1, analyses showed that at the initial lab session, an

incremental gratitude perspective was strongly positively correlated with trait gratitude,

$r(64) = .41$, $p < .001$, whereas an entity gratitude perspective was strongly negatively

correlated with trait gratitude, $r(64) = -.35$, $p = .004$. Moreover, there was a significant

correlation between implicit gratitude beliefs (combined) and trait gratitude, $r(64) = .40$,

$p < .001$. In addition, trait gratitude was correlated with both self- and coder-rated

gratitude (both averaged across weeks), $r_{self} (49) = .63$, $p < .001$, $r_{coder} (48) = .29$, $p =$

.042; self-rated gratitude was also significantly correlated with coder-rated gratitude,

$r(48) = .32$, $p = .02$. The relationship between implicit gratitude beliefs (combined) and

self-rated gratitude (averaged across weeks) was consistent with Study 1; an incremental

perspective was marginally positively correlated with self-rated gratitude, $r(49) = .22$, $p =$

.12, whereas an entity perspective yielded the opposite effect, $r(49) = -.21$, $p = .142$. The

correlation between implicit gratitude beliefs (combined) and self-rated gratitude was

also marginally significant, $r(49) = .22$, $p = .12$. However, there was no relationship

between implicit gratitude beliefs and coder-rated gratitude (averaged across weeks),

$r_{increm} (48) = .03$, $p = .858$; $r_{entity} (48) = .10$, $p = .486$; $r_{average} (48) = -.03$, $p = .834$.

Additional correlations and descriptive statistics are presented in Table 2.

In this case, implicit gratitude (combined), as well as the incremental and entity subscales did not significantly correlate with attentiveness (collapsed across weeks), respectively, $r(48) = -.08, p < .581; r(48) = -.04, p < .840; r(48) = .14, p = .336$. To further explore this relationship, I conducted two mediation analyses with implicit gratitude as the predictor variable, attentiveness as the mediator, and self- and coder-rated gratitude as the respective outcome variables (see Figure 1 for a descriptive model). Standard regression procedures were followed (i.e., predictor variables mean-centered).

The first analysis indicated a marginal effect of implicit gratitude on self-rated gratitude (collapsed over weeks), $b = .41, SE = .24, p = .085$, such that incrementals (vs. entity) expressed more gratefulness, on average. There was no effect of implicit gratitude on attentiveness (collapsed over weeks), $b = -.06, SE = .11, p = .570$, and no effect of attentiveness on gratitude, $b = .31, SE = .30, p = .302$. There was also no support for mediation, the indirect effect was not significant, $b = -.02, SE = .24, p = .619$. With the second analysis, the results showed that attentiveness (collapsed over weeks) significantly predicted coder-rated gratitude (collapsed over weeks), $b = .66, SE = .07, p < .001$, but there was no effect of implicit gratitude on gratitude or attentiveness, respectively, $b = .02, SE = .05, p = .668; b = -.06, SE = .11, p = .571$. There was also no support for mediation, as the indirect effect was not significant, $b = -.04, SE = .07, p = .571$.

More nuanced results emerged from multi-level analyses exploring the potential relationship between gratitude and attentional efforts across time. I conducted a multi-level model with weekly self-reported gratitude as the outcome variable, week number (coded as 0 – 7) entered as Level-1 fixed effect, implicit gratitude entered as a Level-2

fixed effect, and their cross-level interaction. Individuals' slope across weeks was also allowed to randomly vary. In a null model, there was no significant effect of week number, $b = .01$, $SE = .03$, $t = .35$, $p = .729$, indicating that individuals changed relatively little in their self-reported gratitude across each week. There was a significant main effect of implicit gratitude, $b = .53$, $SE = .20$, $t = 2.69$, $p = .009$, such that incremental individuals (vs. entity) reported higher gratitude overall. The implicit gratitude x week number interaction was marginally significant, $b = .05$, $SE = .03$, $t = 1.57$, $p = .122$. Although the simple slope for incrementals (+ 1 SD) was not significant, it was positive and trended in the expected direction, $b = .07$, $SE = .05$, $t = 1.30$, $p = .199$, likewise, the simple slope for an entity perspective (– 1 SD) was not significant, but it also trended in the expected direction, $b = -.05$, $SE = .33$, $t = -.95$, $p = .349$. For participants who scored very low on implicit gratitude beliefs (i.e., a strong entity perspective), the slope was even more negative, $b = -.24$, $SE = .17$, $t = -1.47$, $p = .148$, although still not significant. I also ran the same multi-level analyses with coder-rated gratitude as the outcome variable. In a null model, there was no significant effect of week number, $b = .01$, $SE = .02$, $t = .55$, $p = .582$ and no main effect of implicit gratitude, $b = .01$, $SE = .01$, $t = 1.12$, $p = .265$. Although the implicit gratitude beliefs x week interaction was also not significant, $b = -.003$, $SE = .02$, $t = -.18$, $p = .855$, I examined the *a prior* simple slopes at +1 SD and – 1 SD for implicit gratitude beliefs (i.e., incremental and entity). Both slopes were not significant: incrementals, $b = .01$, $SE = .03$, $t = .193$, $p = .848$, entities, $b = .01$, $SE = .03$, $t = .44$, $p = .659$.

I also conducted a second multi-level analysis to examine the effect of implicit gratitude on attentiveness across time. In a null model with week number (coded 0 – 7)

entered as a Level-1 predictor, there was a significant negative fixed effect of week, such that participants on average were less attentive in later weeks versus earlier weeks, $b = -.05$, $SE = .06$, $t = -3.57$, $p < .001$. I also ran a model with week number entered as a Level-1 fixed effect, implicit gratitude entered as a Level-2 fixed effect, and their cross-level interaction. Individuals' slope across weeks was also allowed to randomly vary. The fixed effect of week number remained significant, $b -.04$, $SE = .02$, $t = -2.22$, $p = .031$, such that participants gradually expended less attentiveness across each week. The fixed main effect of implicit gratitude was not significant, $b = -.05$, $SE = .10$, $t = -.52$, $p = .607$, and although the cross-level week x implicit theories interaction was also not significant, $b = .02$, $SE = .02$, $t = .99$, $p = .328$, the slopes for an incremental (+1 SD) and entity (– 1 SD) perspective were in the expected direction. Specifically, the slope across time for an entity perspective (– 1 SD) was significantly negative, $b = -.06$, $SE = .03$, $t = -2.24$, $p = .029$; that is, although entity individuals started with the same relative degree of attentiveness as incrementals, entities quickly reduced their effort on the gratitude building task. By comparison, the slope across time for incrementals (+1 SD) remained stable and did not significantly differ from zero, $b = -.02$, $SE = .02$, $t = -.90$, $p = .373$; whereas entity individuals' attentiveness dropped off in the latter weeks, incrementals consistently attended to the gratitude building task across the 8 weeks.

Discussion

The results from Study 2 provide converging evidence that individuals' implicit theories of gratitude are associated with their expressions of gratefulness. Replicating the findings from Study 1, across the analyses, I found that incremental beliefs were strongly positively associated with dispositional gratitude, whereas entity beliefs were strongly

negatively associated with gratitude. Moreover, preliminary analyses suggest that across

time incrementals were more consistently attentive to the gratitude event. By comparison,

attentiveness gradually lessened across time for those with entity beliefs.

STUDY 3

Overview

The results from Studies 1 and 2 provide initial correlational support for the general hypothesis that incremental (vs. entity) beliefs are strongly associated with an increased sense of gratitude; the findings also suggest that this relationship may be grounded in incrementals' tendency to regulate their attentional effort to notice and cultivate feelings of gratitude. As noted earlier, I reasoned that incrementals should more attentively engage in a gratitude building task because they believe that achieving positive outcomes/consequences is related to their labors. Hence, I expect incrementals to be more aware of and attentive to gratitude-worthy events, in general; as such I expect incrementals to exhibit more gratefulness following such an event. Specifically, if incrementals (vs. entity) take note of and are more attentive to gratitude-worthy events, I expect that when a gratitude-worthy event is more salient they will experience a greater sense of gratefulness than those who hold an entity perspective; when the event is less salient I expect minimal differences to emerge between incremental and entity theorists. The aim of Studies 3-6 is to empirically examine this question – do feelings of gratefulness differ for those with an incremental versus entity belief as a function of the general salience of a gratitude-worthy event.

Method

Participants

Participants were 188[12] undergraduate students (M_{age} = 18.61, SD = 1.09) who participated for course credit. The gender composition of the sample was 129 women, 58 men, and one student who identified as transmasculine. The ethnic composition of the sample was 85.11% White/Caucasian, 5.32% Black, 5.32% Hispanic/Latino, 1.06% Middle Eastern, and 3.19% who identified with a different ethnic category.

Procedure

After completing an informed consent, participants learned that the study was about college students' everyday life. All participants were told that for the forthcoming task they would recall a recent experience and write about it. Specifically, participants were randomly assigned to one of two salience conditions. In a good event (i.e., gratitude-more-salient) condition, participants were instructed to: "Think about a good thing that someone did for you recently – something that made you smile or that made you feel warm and happy." Wording for this prompt was derived from a previous study examining words/descriptions prototypical of grateful experiences; *smile*, *warm feeling* and *happy feeling* were all identified as being highly prototypical of gratitude (Lambert, Graham, & Fincham 2009). Participants in the typical event (i.e., gratitude-less-salient) condition were instructed to: "Think about an ordinary thing that someone did for you recently – something that made you think of your typical or everyday experiences." Participants in both conditions received the following instruction: "In 1 or 2 sentences, briefly describe the event you are thinking about."

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[12]Participants (n = 55; 22.63%) identifying as Asian were excluded from analyses.

After writing the brief description, participants were advanced to the next page, at which point they were instructed to write an essay in response to the following prompt: "Imagine yourself in the event you just described as if it were occurring right now and answer the following question in as much detail as possible: To what extent does this event lead you to feel grateful?" After finishing the essay, participants also rated the degree to which they felt *grateful*, *appreciative*, and *thankful* on a 1 (*not at all*) to 11 (*very much*) scale (α = .94); this measure of state gratitude represents a key dependent variable. In addition, two coders (blind to conditions and hypotheses) independently coded the essays for gratefulness (ICC = .76) using a scale anchored at 1 (*none/very little*) to 11 (*very much*). As a manipulation check, coders rated the positivity of the event (i.e., good vs. typical) (ICC = .80) on a scale from 1 (*mostly negative*) to 7 (*mostly positive*); they also rated the gratitude essay for attentiveness[13] (ICC = .85). The length of each essay (i.e., word count) and the time writing were also recorded.

Participants also completed the same measures used in Study 1, which were embedded among filler items (e.g., Big Five): implicit gratitude (α = .89), implicit intelligence (α = .94), and trait gratitude (α = .83). As an additional indicator of participants' motivation to attentively regulate their sense of gratefulness, they completed a 6-item internal/external grateful motivation measure anchored on a scale from 1 (*strongly disagree*) to 9 (*strongly agree*), (α = .71; e.g., "I am personally motivated to be a genuinely grateful person", adapted from Plant & Devine, 1998). Following previous work, I reverse-scored appropriate items and averaged the 6 items together to form a

[13]Across studies 3-6, coders used the following rubric: this person put a lot of thought, effort, and attention into his/her response; this person gave a thorough and detailed response.

single score; higher values indicate greater internal motivations (heretofore referred to as gratitude motivation). Upon completion, participants were thanked and fully debriefed.

Results

Manipulation Check

As expected, participants' essay event was significantly more positive in the good event condition ($M = 5.52$, $SD = .71$) compared to the typical event condition ($M = 5.08$, $SD = .83$), $t(184) = 3.95$, $p < .001$. However, there was no effect of participants' implicit gratitude (i.e., incremental vs. entity) on event positivity, $\beta = .05$, 95%CI [-.10, .19], $SE = .07$, $t = .67$, $p = .504$.

Primary Analyses

Gratitude. Consistent with Study 1 and 2, the results showed that an incremental gratitude perspective was strongly positively correlated with trait gratitude, $r(186) = .35$, $p < .001$, whereas an entity perspective was strongly negatively correlated with trait gratitude, $r(186) = -.24$, $p < .001$. Likewise, the correlation between implicit gratitude (incremental and entity combined) and trait gratitude was also significant, $r(186) = .32$, $p < .001$. An incremental perspective was marginally correlated with self-reported gratitude, $r(186) = .13$, $p = .075$, but not with coder-rated gratitude $r(186) = .01$, $p = .85$. An entity perspective did not significantly correlate with either self-reported, $r(186) = .00$, $p = .95$ or coder-rated gratitude, $r(186) = -.01$, $p = .87$. Moreover, implicit gratitude (incremental and entity combined) did not significantly correlate with either self-, $r(186) = .07$, $p = .349$, or coder-rated gratitude, $r(186) = .01$, $p = .847$. Coder- and self-rated gratitude were significantly correlated, $r(186) = .64$, $p < .001$, and both were significantly

correlated with trait gratitude, $r_{self\text{-}rate}$ (186) = .29, $p < .001$; $r_{coder\text{-}rate}$ (186) = .18, $p = .02$.

Additional correlations and descriptive statistics are presented in Table 3.

To examine the effect of implicit gratitude beliefs on state gratitude, I performed a multiple regression analysis[14], in which state gratitude was regressed onto salience condition, implicit gratitude, and their interaction[15] (see Figure 2a). All standard regression procedures were followed (e.g., mean-centering predictor variables; Aiken, West, & Reno, 1991). Recall that across all studies incremental items and entity (reverse-coded) items were averaged to create a composite measure (higher scores indicate a more *incremental* perspective of gratitude).

The analysis revealed a significant main effect for salience condition, β = .42, 95% CI [.14, .71], *SE* = .14, t = 2.9, p = .004, such that participants exhibited more gratitude in the good event (*M* = 9.51, *SD* = 1.83) versus the typical event (*M* = 8.57, *SD* = 2.35); the main effect for implicit gratitude was not significant, β = .05, 95%CI [-.10, .19], *SE* = .07, t = .63, p = .531. However, the effect for salience conditions was qualified by a significant salience condition x implicit gratitude interaction, β = .31, 95%CI [.01, .60], *SE* = .15, t = 2.05, p = .042. As expected, simple slopes analyses revealed that those with more incremental beliefs (+1 SD) exhibited significantly more gratitude in the good event compared to the typical event condition, b = 1.56, *SE* = .44, t = 3.53, $p < .001$. In contrast, gratitude for those with more entity beliefs (–1 SD) did not significantly differ across the good and typical event conditions, b = .22, *SE* = .46, t = .48, p = .635.

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[14]As with Study 1, regression analyses with implicit intelligence as a covariate did not significantly change the results for self- or coder-rated gratitude, and implicit intelligence perspectives did not significantly predict self- or coder-rated gratitude, respectively, β = .04, 95%CI [-.07, .16], *SE* = .06, t = .79, p = .430; β = -.02, 95%CI [-.13, .09], *SE* = .06, t = -.41, p = .681.

[15]Across studies 3-6, essay length and time writing produced no significant changes to the results, and will not be further discussed.

The same regression analysis was also conducted with coder-rated state gratitude as the outcome variable, and a similar pattern of results emerged (see Figure 2b). Specifically, there was a significant main effect for salience condition, $\beta = .63$, 95%CI [.36, .91], $SE = .14$, $t = 4.45$, $p < .001$; participants exhibited higher levels of gratitude in the good event ($M = 7.61$, $SD = 1.55$) compared to the typical event condition ($M = 6.38$, $SD = 2.05$); the main effect for implicit gratitude was not significant, $\beta = -.02$, 95%CI [-.16, .12], $SE = .07$, $t = -.30$, $p = .765$. Once again, the main effect was qualified by a salience condition x implicit gratitude interaction (marginal), $\beta = .25$, 95%CI [-.04, .54], $SE = .15$, $t = 1.708$, $p = .089$. Simple slopes analyses revealed that incremental individuals (+1 SD) exhibited significantly more gratitude in the good event versus the typical event, $b = 1.70$, $SE = .38$, $t = 4.42$, $p < .001$, whereas the difference in gratitude for entity theorists (–1 SD) across the salience conditions was marginal and smaller than that for incrementals, $b = .72$, $SE = .40$, $t = 1.80$, $p = .073$.

Attentiveness and gratitude motivation. The correlations between coder-rated attentiveness and implicit gratitude (incremental and entity combined), as well as the incremental and entity subscales were not significant, respectively, $r(186) = .06$, $p = .39$; $r(186) = .04$, $p = .55$; $r(186) = -.07$, $p = .33$.

I also used Hayes' PROCESS macro (Hayes, 2012) to conduct a moderated-mediation model predicting self-rated gratitude (see Figure 3 for a descriptive model), with implicit gratitude (mean-centered) as the predictor variable, coder-rated attentiveness as the mediator, and salience condition (good vs. typical event) as the moderator. The model tests the indirect effect of attentiveness on self-reported gratitude,

and examines whether the magnitude of the indirect effect differs as a function of salience condition (good vs. typical event).

The results indicated no significant effect for attentiveness, $b = .10$, $SE = .08$, $t = 1.26$, $p = .210$, or for implicit gratitude, $b = -.14$, $SE = .19$, $t = -.73$, $p = .469$. However, the effect for the condition variable, $b = .86$, $SE = .31$, $t = 2.73$, $p = .007$, and the implicit gratitude x condition interaction were significant, $b = .66$, $SE = .32$, $t = 2.00$, $p = .047$. The indirect effect of attentiveness was not significant in either salience condition: typical, $b = .004$, $SE = .02$, 95%CI [-.031, .040], $p = .807$; good, $b = .021$, $SE = .03$, 95%CI [-.036, .079], $p = .468$, and the index for moderated mediation also did not reach significance, as indicated by a confidence interval that includes zero, $index = .02$, $SE = .05$, 95%CI [-.041, .155].

The same analyses produced a similar pattern of effects for coder-rated gratitude. The main effects of attentiveness, $b = .48$, $SE = .06$, $t = 7.98$, $p < .001$, and salience condition, $b = 1.05$, $SE = .24$, $t = 4.43$, $p < .001$, were significant; the effect of implicit gratitude was not, $b = -.23$, $SE = .15$, $t = -1.59$, $p = .113$. There was also a marginal effect of the implicit gratitude beliefs x condition interaction, $b = .41$, $SE = .25$, $t = 1.65$, $p = .10$. The indirect effect of attentiveness was not significant in either salience condition: typical, $b = .02$, $SE = .09$, 95% CI [-.145, .188]; $p = .803$; good, $b = .10$, $SE = .12$, 95% CI [-.126, .331], $p = .380$, and again the index of moderated mediation was not significant, $index = .081$, $SE = .16$, 95%CI [-.252, .401].

I also ran a similar PROCESS model predicting self-rated gratitude with gratitude motivation as the mediator (see Figure 4 for a descriptive model). The results indicated no main effect for implicit gratitude, $b = -.27$, $SE = .19$, $t = -1.40$, $p = 163$; the effects,

however, for gratitude motivation, $b = .29$, $SE = .12$, $t = 3.18$, $p = .002$, and for salience

condition (good vs. typical), $b = .90$, $SE = .31$, $t = 2.94$, $p = .004$, were significant. A

marginal salience condition x implicit gratitude interaction also emerged, $b = .54$, $SE =$

$.32$, $t = 1.65$, $p = .10$. The indirect effects of gratitude motivation were significant for

both salience conditions: typical, $b = .14$, $SE = .06$, 95% CI [.017, .256], $p = .026$; and

good, $b = .27$, $SE = .10$, 95%CI [.070, .479], $p = .008$. Although the indirect effect is

descriptively larger in the good (vs. typical) event condition, the index of moderated

mediation failed to reach significance, $index = .14$, $SE = .10$, 95%CI [-.007, .425].

I further examined the same model with coder-rated gratitude as the outcome

variable and with gratitude motivation as the mediator. In this case, there was no

significant effect for implicit gratitude, $b = -.22$, $SE = .17$, $t = -1.27$, $p = .204$, or for

gratitude motivation, $b = .03$, $SE = .11$, $t = .25$, $p = .801$. However, the effect for salience

condition was significant, $b = 1.21$, $SE = .27$, $t = 4.44$, $p < .001$, and the salience

condition x implicit gratitude interaction was again marginally significant, $b = .48$, $SE =$

$.29$, $t = 1.65$, $p = .100$. However, the indirect effects of gratitude motivation across the

salience conditions was not significant: typical, $b = .01$, $SE = .04$, 95%CI [-.064, .084], p

$= .798$; good, $b = .02$, $SE = .09$,95%CI [-.130, .169], $p = .798$. The index of moderated-

mediation was also not significant, $index = .001$, $SE = .05$, 95%CI [-.055, .163].

Discussion

Findings from Study 3 replicate those from the first 2 studies in that gratitude was

strongly positively associated with an incremental belief, while negatively associated

with an entity belief. In addition, the results provide initial experimental evidence

suggesting that those with incremental beliefs are more sensitive to a gratitude-worthy

event; specifically, compared to entities, incrementals experienced more gratitude when the event was more salient (i.e., good) versus less salient (i.e., typical). Additional analyses indicated that gratitude motivation (but not attentiveness) mediated the relationship between implicit gratitude and self-rated gratitude, although this mediation pattern did not emerge for coder-rated gratitude. Concerns with the coder-rated measures will be further discussed in the general discussion.

STUDY 4

Overview

Although entity theorists' gratitude did not differ across the salience conditions (i.e., good and typical event) in Study 3, it remains possible that those with an entity perspective may require a higher threshold to assess an event as gratitude worthy. If this is the case, they might express more gratefulness when the magnitude of a gratitude-worthy event is positively heightened. To explore this question, Study 4 includes a third salience condition using a stronger prompt to increase the salience of a gratitude worthy event (e.g., write about the *very best* thing that recently happened to you). Overall, I expect the findings for Study 4 to replicate the pattern of results from Study 3.

Method

Participants

Participants were 251[16] undergraduate students (M_{age} = 18.80, SD = 1.21) who completed the study for partial course credit. The gender composition of the sample was 158 women and 93 men. The ethnic composition of the sample was 86.85% White/Caucasian, 6.77% Hispanic/Latino, 2.39% Black, 3.99% who identified with a different ethnic category.

Procedure

The procedure for Study 4 was similar to that of Study 3. Specifically, for the salience conditions, participants were randomly assigned to a good event or a typical event as described in Study 3, or to a third salience condition in which participants were

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[16]Participants (n = 66; 20.82%) who identified with an Asian background were excluded from analyses.

instructed to recall *the very best thing that someone did for you recently – something that really made you smile or that made you feel warm and happy*. Participants in all three conditions were told: *in 1 or 2 sentences, briefly describe the event you are thinking about*.

After writing the brief description, participants wrote an essay describing how they could be grateful for the event (instructions were identical to Study 3). Participants also rated the degree to which they felt *grateful*, *appreciative*, and *thankful* for the event (α = .90) using a slider scale that ranged from 1 (*not at all*) to 100 (*very much*). The grateful essays were also independently coded by 3 research assistants for gratefulness (ICC = .78). As with Study 3, the coders also rated the positivity of the event (ICC = .35), and they rated the gratitude essay for attentiveness (ICC = .80). The length of each essay (i.e., word count) and the time writing were also recorded.

Participants also completed the same set of measures as in Study 3: implicit gratitude (α = .93), implicit intelligence (α =.94), trait gratitude (α = .80), and the gratitude motivation measure (α = .67). These measures were embedded among filler items (e.g., Big Five). After completing demographic information, participants were thanked and fully debriefed.

Results

Preliminary Analysis

An initial examination revealed that gratitude (self- and coder-rated) did not significantly differ across the good and best events [self: M_{good} = 87.42, SD_{good} = 17.43; M_{best} = 87.72, SD_{best} = 17.26), t (166) = -.11, p = .910]; [coder rated: M_{good} = 8.2, SD_{good} = 1.68; M_{best} = 8.27, SD_{best} = 1.56), t (166) = -.29, p = .770]. Thus, I collapsed across the

good and best conditions for all subsequent analyses, heretofore referred to as simply the good condition.

Manipulation Check

As in Study 3, a significant effect of salience condition emerged in that the good event was rated by the coders as more positive ($M = 5.41$, $SD = .75$) than the typical event ($M = 4.85$, $SD = .83$), $t(248) = 5.35$, $p = .003$. There was a marginal effect of participants' implicit gratitude beliefs (incremental vs. entity) on the positivity of the event, $\beta = .10$, 95%CI [-.02, .23], $SE = .06$, $t = 1.72$, $p = .086$, such that incrementals' (vs. entity) essays were marginally more positive.

Primary Analyses

Gratitude. Again, the results showed that an incremental gratitude perspective was strongly positively correlated with trait gratitude, $r(249) = .22$, $p < .001$, whereas an entity perspective was strongly negatively correlated with trait gratitude, $r(249) = -.21$, $p < .001$. Implicit gratitude (incremental and entity combined) was also significantly correlated with trait gratitude, $r(249) = .23$, $p < .001$. An incremental perspective was also significantly correlated with self-rated gratitude, $r(249) = .17$, $p = .007$, but not for coder-rated gratitude, $r(249) = .06$, $p = .326$. Although, marginal, an entity perspective was negatively correlated with self-rated gratitude, $r(249) = -.10$, $p = .117$, and coder-rated gratitude, $r(249) = -.09$, $p = .156$. Implicit gratitude (i.e., combined) was significantly correlated with self-rated gratitude, $r(249) = .15$, $p = .021$, but not with coder-rated gratitude, $r(249) = .08$, $p = .205$. Coder- and self-rated gratitude were significantly correlated, $r(249) = .53$, $p < .001$, and both were significantly correlated

with trait gratitude, $r_{\text{self-rated}}$ (249) = .39, $p < .001$; $r_{\text{coder-rated}}$ (249) = .21, $p < .001$.

Additional correlations and descriptive statistics are presented in Table 4.

As with Study 3, to examine the effect of implicit gratitude beliefs on self-rated gratitude, I regressed gratitude onto salience condition, implicit gratitude, and their interaction[17] (see Figure 5a). A significant main effect for implicit gratitude emerged, β = .14, 95%CI [.02, .26], SE = .06, t = 2.26, p = .025, in which incrementals expressed more gratitude than those with an entity perspective. There was also a main effect for salience condition, β = -.25, 95%CI [-.51, .01], SE = .13, t = -1.86, p = .064, such that participants were more grateful in the good event condition (M = 87.57, SD = 17.29) compared to the typical event condition (M = 83.07, SD = 17.40). The salience condition x implicit gratitude interaction did not reach significance, β = -.14, 95%CI [-.38, .11], SE = .12, t = -1.110, p = .268, however, the key *a priori* predictions for the simple slopes were significant. Mimicking the results from Study 3, simple slopes analyses showed that incrementals (+1 SD) expressed significantly more gratitude in the good event compared to the typical event condition, b = 6.84, SE = 3.25, t = 2.10, p = .036. By comparison, gratitude for those with an entity perspective (–1 SD) did not significantly differ across the good and typical event conditions, b = 1.87, SE = 3.17, t = .588, p = .557.

Following the results from Study 3, a similar pattern of results emerged with coder-rated gratitude as the outcome variable (see Figure 5b). Specifically, there was a main effect for salience condition, β = -.41, 95%CI [-.67, .15], SE = .13, t = -3.11, p = .002, such that participants exhibited more gratitude in the good event (M = 8.24, SD =

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[17]As with the earlier studies, regression analyses with implicit intelligence as a covariate did not significantly change the results for self- or coder-rated gratitude, and implicit intelligence perspectives did not significantly predict self- or coder-rated gratitude, respectively, β = .05, 95%CI [-.04, .14], SE = .04, t = 1.05, p = .296; β = .05, 95%CI [-.05, .14], SE = .05, t = 1.01, p = .314.

1.61) compared to the typical event condition (*M* = 7.53, *SD* = 1.8); the main effect for implicit gratitude was not significant, β = .07, 95%CI [-.05, .19], *SE* = .06, *t* = 1.18, *p* = .24. The implicit gratitude x salience interaction was also not significant, β = -.07, 95%CI [-.32, .16], *SE* = .13, *t* = -.65, *p* = .519; however, again the key *a priori* simple slopes were significant. Specifically, incrementals (+1 *SD*) expressed significantly more gratitude in the good versus typical event, *b* = .84, *SE* = .32, *t* = 2.66, *p* = .008, whereas the difference in gratitude for entity theorists (–1 *SD*) across the salience conditions was marginal and smaller than incrementals, *b* = .56, *SE* = .31, *t* = 1.81, *p* = .07.

Attentiveness and gratitude motivation. As with studies 1 and 2, consistent with expectations the correlation between implicit gratitude (i.e., incremental and entity combined) and attentiveness was positively correlated (marginal), *r*(249) = .12, *p* = .067; as incremental beliefs increased attentiveness increased. Likewise, the incremental subscale was marginally positively correlated with attentiveness, *r*(249) = .09, *p* = .139, whereas the entity subscale was significantly negatively correlated, *r*(249) = -.13, *p* = .048.

As in Study 3, I used Hayes' PROCESS macro (2012) to conduct a moderated-mediation model predicting self-rated gratitude, with implicit gratitude (mean-centered) as the predictor variable, coder-rated attentiveness as the mediator, and salience condition (good vs. typical event) as the moderator. There was a significant effect for attentiveness, *b* = 1.09, *SE* = .52, *t* = 2.07, *p* = .040, and a marginal effect for salience condition, *b* = 4.28, *SE* = 2.29, *t* = 1.87, *p* = .063. Neither the main effect for implicit gratitude, *b* = .65, *SE* = 1.67, *t* = .45, *p* = .651, nor the implicit gratitude x salience condition interaction, *b* = 2.18, *SE* 2.12, *t* = 1.03, *p* = .306, were significant. The indirect effect of attentiveness was

also not significant across the salience conditions: typical, $b = .13$, $SE = .23$, 95%CI [-.314, 571], $p = .569$; good, $b = .32$, $SE = .23$, 95%CI [-.130, .770], p = .163. The index of moderated-mediation was also not significant, $index = .20$, $SE = .40$, 95%CI [-.217, 1.550].

A similar pattern of effects emerged for coder-rated gratitude. The main effects for attentiveness, $b = .44$, $SE = .04$, $t = 9.98$, $p < .001$, and salience condition, $b = .67$, $SE = .19$, $t = 3.54$, $p < .001$ were both significant. There was no significant effects for implicit gratitude, $b = -.02$, $SE = .14$, $t = -.11$, $p = .909$ or for the implicit gratitude x salience condition interaction, $b = .06$, $SE = .18$, it = *.33,* p = .744. Although the indirect effect of attentiveness was larger for the good event, $b = .13$, $SE = .07$, 95%CI [-.008, .265], $p = .065$, compared to the typical event, $b = .05$, SE .09, 95%CI [-.119, .223], $p = .555$, the index of moderated-mediation was also not significant, $index = .08$, $SE = .12$, 95%CI [-.138, .333].

I ran the same moderated-mediation model described above but with gratitude motivation as the mediator and self-rated gratitude as the outcome variable. The results revealed a main effect for gratitude motivation, $b = 5.52$, $SE = .83$, $t = 6.69$, $p < .001$, and a marginal effect for salience condition, $b = 4.08$, $SE = 2.13$, $t = 1.92$, $p = .056$. The main effect for implicit gratitude, $b = -.35$, $SE = 1.56$, $t = -.22$, $p = .823$, and the implicit gratitude x salience condition interaction both failed to reach significance, $b = 1.70$, $SE = 1.97$, $t = .86$, $p = .400$. The indirect effect of gratitude motivation was significant for the good event, $b = 1.90$, $SE = .59$, 95%CI [.754, 3.047], $p = .001$, but not for the typical event, $b = 1.23$, $SE = .68$, 95%CI [-.095, 2.558], $p = .069$. However, the confidence

interval for the moderated-mediation index still included zero, indicating that it was not significant, $index = .67$, $SE = 1.02$, 95%CI [-1.26, 2.76].

Again, a similar pattern of effects emerged with coder-rated gratitude as the outcome variable. There was a main effect for both gratitude motivation, $b = .21$, $SE = .09$, $t = 2.37$, $p = .02$, and salience condition, $b = .69$, $SE = .22$, $t = 3.11$, $p = .002$. Neither the main effect for implicit gratitude, $b = -.01$, $SE = .16$, $t = -.06$, $p = .95$, nor the implicit gratitude x salience condition interaction reached significance, $b = .11$, $SE = .21$, $t = .53$, $p = .596$. As with self-rated gratitude, the indirect effect of gratitude motivation was also significant for the good event, $b = .07$, $SE = .04$, 95%CI [.002, .140], $p = .044$, but not for the typical event, $b = .05$, $SE = .03$, 95%CI [-.015, .106], $p = .138$. Although the magnitude of the indirect effect was larger in the good (vs. typical) condition, the confidence interval for the moderated-mediation index still included zero, indicating that it was not significant, $index = .02$, $SE = .04$, 95%CI [-.036, .154].

Discussion

Study 4 findings replicated the associations between implicit gratitude beliefs and gratitude levels that were found in the first 3 studies, that is, gratitude was strongly positively associated with an incremental belief while negatively associated with an entity belief. The findings also followed the same pattern of experimental results that emerged in Study 3; incrementals experienced more gratitude when the event was salient (i.e., positive vs. typical), whereas gratitude for those with an entity perspective remained unchanged across salience conditions. Taken together, these finding suggest that incrementals (vs. entity) may be more attentive to salient gratitude events. Moreover, gratitude motivation mediated the relationship between implicit gratitude beliefs and

gratitude. Incremental (vs. entity) individuals expressed greater motivations to cultivate a general sense of gratitude, which in turn predicted higher self- and coder-rated gratitude in the good event (but not typical) condition.

STUDY 5

Overview

Studies 3 and 4 offer consistent evidence that incremental individuals (vs. entity) are more attentive to salient gratitude events, and as a result, they exhibit higher levels of gratitude. The goal of Study 5 is to conceptually replicate this effect using a different manipulation for gratitude salience in which participants wrote about a positive event that resulted from their own (i.e., own-focus) or others' (i.e., other-focused) labors. As summarized in the introduction, I reasoned that focusing on other's contributions (i.e., other-focus) compared to focusing on one's own contributions (i.e., own-focus) should highlight the gratitude-worthiness of an event in that the event should be more salient in the other- versus own-focus condition (e.g., Mathews & Green, 2010; Valdesolo, 2018). As in the previous studies, I expect that when a gratitude event is more salient (i.e., other-focus), incrementals will experience more gratefulness than those with an entity perspective; when the event is less salient (i.e., own-focus), I expect minimal differences to emerge between incremental and entity theorists.

Method

Participants

Participants were 175[18] M-Turk workers who completed the study for monetary compensation (M_{age} =36.57, SD = 10.19). The gender composition of the sample was 88 women and 85 men (1 individual identified as agender, and 1 individual identified as non-binary). The ethnic composition of the sample was 82.90% White/Caucasian, 8.57%

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[18]The following were excluded for the analyses: 14 individuals with duplicate M-Turk worker IDs, 48 who failed to follow instructions, and 12 who identified as Asian.

Black/African American, 6.29% Hispanic/Latino, 1.71% Native American/Alaskan, 1 person preferred not to respond.

Procedure

Participants were randomly assigned to a high or low gratitude-salient condition. In the high salient condition, participants were instructed to think about a positive event that was primarily the result of *other's* efforts: *Imagine a situation where you are working with other people on a project which results in something good happening to you. But, even though you helped on this project, this positive benefit to you would not have happened without these other people's contribution and sacrifice*. In the low salient condition, participants were also instructed to think about a recent positive event, but they were instructed to focus on how their *own* individual efforts were necessary for the positive outcome: *Imagine a situation where you are working with other people on a project which results in something good happening to you. But, even though these other people helped on this project, this positive benefit to you would not have happened without your own contribution and sacrifice*. Participants in both conditions received the following instruction: "In 1 or 2 sentences, briefly describe the event you are thinking about".

Following Studies 3 and 4, participants were instructed to write an essay describing how they could be grateful for the described event. After finishing the essay, participants also rated the degree to which they felt *grateful*, *appreciative*, and *thankful* on a 1 (*not at all*) to 11 (*very much*) scale ($\alpha = .93$); this measure of state gratitude serves as a key dependent variable. As in the previous studies, the grateful essays were independently coded for gratefulness (ICC = .62) by two research assistants using a scale

anchored at 1 (*none/very little*) to 11 (*very much*). For a manipulation check, coders also rated the positivity of the event (high vs. low salience) (ICC = .20); they also rated the gratitude essay for attentiveness (ICC = .65). The length of each essay (i.e., word count) and the time writing were also recorded.

Participants completed filler items (e.g., Big Five), included among them were the same individual differences measures as in the previous studies: implicit gratitude (α = .89), implicit intelligence (α = .95), trait gratitude (α = .83), and the gratitude motivation measure (α = .71). After completing demographic information, participants were thanked and fully debriefed.

<div align="center">

Results

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Manipulation Check

Once again, there was a significant effect of salience condition, such that the essay was more positively rated in the high salience condition (i.e., other-focus) (*M* = 6.03, *SD* = .57) compared to the low salience condition (i.e., own-focus) (*M* = 5.84, *SD* = .79), *t* (247) = -1.83, *p* = .069. There was also a significant effect of participants' implicit gratitude beliefs (incremental vs. entity) on the positivity of the event, β = .19, 95%CI [.04, .34], *SE* = .07, *t* = 2.53, *p* = .013, such that incremental (vs. entity) essays were relatively more positive.

Primary Analyses

Gratitude. As in the prior studies, an incremental gratitude perspective was strongly positively correlated with trait gratitude, *r*(173) = .56, *p* < .001, whereas an entity perspective was strongly negatively correlated with trait gratitude, *r*(173) = -.58, *p* < .001. The implicit gratitude measure (combined) was also significantly correlated with

trait gratitude, $r(173) = .63$, $p < .001$. Moreover, an incremental perspective was strongly positively correlated with coder- and self-rated state gratitude, $r_{self\text{-}rated}(172) = .38$, $p < .001$, $r_{coder\text{-}rated}(173) = .34$, $p < .001$; whereas having an entity perspective was strongly negatively correlated with both coder- and self-rated state gratitude, $r_{self\text{-}rated}(172) = -.27$, $p < .001$, $r_{coder\text{-}rated}(173) = -.34$, $p < .001$. Implicit gratitude (combined) was also significantly correlated with self-rated gratitude, $r(172) = .35$, $p < .001$, and coder-rated gratitude, $r(173) = .37$, $p < .001$. Coder- and self-rated gratitude were significantly correlated, $r(172) = .45$, $p < .001$, and both were significantly correlated with trait gratitude, $r_{self\text{-}rated}(172) = .38$, $p < .001$; $r_{coder\text{-}rated}(173) = .28$, $p < .001$. Additional correlations and descriptive statistics are presented in Table 5.

As with Study 3 and 4, I regressed participants' gratitude onto salience condition, implicit gratitude, and their interaction[19] (see Figure 6a). The analysis revealed a significant main effect for implicit gratitude, $\beta = .32$, 95%CI [.18, .47], $SE = .07$, $t = 4.52$, $p < .001$; as incremental levels increased, gratitude increased. A significant main effect for salience condition also emerged, $\beta = .30$, 95%CI [.02, .58], $SE = .14$, $t = 2.11$, $p = .036$; participants expressed more gratitude in the high salience condition (i.e., other focus) ($M = 9.61$, $SD = 1.66$) compared to the low salience condition (i.e., own-focus) ($M = 8.85$, $SD = 2.12$). The salience condition x implicit gratitude interaction did not reach significance, $\beta = .13$, 95%CI [-.16, .42], $SE = .15$, $t = .865$, $p = .388$, however, as in the previous studies, the *a priori* simple slopes were significant. Like Studies 3 and 4, the analyses indicated that incrementals (+1 *SD*) exhibited significantly more gratitude in the

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[19]Once again, regression analyses with implicit intelligence as a covariate did not significantly change the results for self- or coder-rated gratitude, and implicit intelligence perspectives did not significantly predict self- or coder-rated gratitude, respectively, $\beta = .02$, 95%CI [-.07, .10], $SE = .04$, $t = 0.35$, $p = .729$; $\beta = .04$, 95%CI [-.05, .12], $SE = .04$, $t = 0.83$, $p = .408$.

high salience condition (i.e., other focus) compared to the low salience condition (i.e., own-focus), $b = .82$, $SE = .39$, $t = 2.10$, $p = .037$, whereas state gratitude for those with an entity perspective (-1 SD) did not significantly differ by the salience conditions, $b = .33$, $SE = .40$, $t = .83$, $p = .409$.

Consistent with the results from Study 3 and 4, a relatively similar pattern emerged with coder-rated gratitude as the outcome variable (see Figure 6b). The findings revealed a significant main effect for salience condition; participants expressed more gratitude in the high salience condition (i.e., other focus) ($M = 7.99$, $SD = 1.84$) compared to the low salience condition (i.e., own-focus) ($M = 7.01$, $SD = 2.22$), $\beta = .38$, 95%CI [.10, .65], $SE = .14$, $t = 2.70$, $p = .008$. The main effect for implicit gratitude was also significant, $\beta = .34$, 95%CI [.21, .49], $SE = .07$, $t = 4.98$, $p < .001$. Again, the implicit gratitude x salience interaction did not reach significance, $\beta = .02$, 95%CI [-.26, .30], $SE = .14$, $t = .15$, $p = .883$, however, the *a priori* simple slopes were significant in the expected direction. Specifically, incrementals ($+1$ SD) exhibited significantly more gratitude in the high salience condition compared to the low salience condition, $b = .83$, $SE = .43$, $t = 2.01$, $p = .046$. The difference in gratitude for entity theorists (-1 SD) was only marginally significant, $b = .74$, $SE = .42$, $t = 1.75$, $p = .081$.

Attentiveness and gratitude motivation. Consistent with expectations, the correlation between implicit gratitude (i.e., incremental and entity combined) and attentiveness was significantly positively correlated, $r(173) = .38$, $p < .001$. Moreover, the incremental subscale was also significantly positively correlated with attentiveness, $r(173) = .29$, $p < .001$, whereas the entity subscale was significantly negatively correlated, $r(173) = -.39$, $p < .001$.

As in Study 3, I used Hayes' PROCESS macro (2012) to conduct a moderated-mediation model predicting self-rated gratitude, with implicit gratitude (mean-centered) as the predictor variable, coder-rated attentiveness as the mediator, and salience condition (good vs. typical event) as the moderator.

The main effect for both implicit gratitude, $b = .37$, $SE = .14$, $t = .85$, $p = .011$, and salience condition, $b = .057$, $SE = .28$, $t = 2.05$, $p = .042$, were significant. Neither the main effects for attentiveness, $b = .05$, $SE = .14$, $t = .85$, $p = .399$, nor the implicit gratitude x salience condition interaction reached significance, $b = .19$, $SE = .22$, $t = .85$, $p = .397$. The indirect effects of attentiveness were not significant for either the own-focus, $b = .03$, $SE = .04$, 95%CI [-.046, .115], $p = .402$, or the other-focus condition, $b = .04$, $SE = .05$, 95%CI [-.051, .127], $p = .405$. The index of moderated-mediation was also not significant, $index = .004$, $SE = .02$, 95%CI [-.027, .074].

I also ran the same analyses with coder-rated gratitude as the outcome variable. The main effects of attentiveness, $b = .52$, $SE = .05$, $t = 10.93$, $p < .001$, and salience condition, $b = .73$, $SE = .22$, $t = 3.25$, $p = .001$, were both significant. There was no main effect for implicit gratitude, $b = .18$, $SE = .12$, $t = 1.56$, $p = .120$; and the implicit gratitude x salience condition interaction was also not significant, $b = -.01$, $SE = .18$, $t = -.07$, $p = .947$. However, the indirect effect of attentiveness was significant in both the other-focus $b = .41$, $SE = .12$, 95%CI [.176, .641], $p = .001$ and the own-focus conditions, $b = .36$, SE .10, 95%CI [.169, .556], $p < .001$. Although the indirect effect is descriptively larger in the other-focus (vs. own-focus) condition, the confidence interval for the index of moderated-mediation still included zero, indicating that it was not significant, $index = .05$, $SE = .15$, 95%CI [-.259, .347].

As in Study 3 and 4, I conducted a similar analysis with gratitude motivation as the mediating variable. In a first model with self-rated gratitude as the outcome variable, there was a significant main effect of gratitude motivation, $b = .35$, $SE = .11$, $t = 3.28$, $p = .001$, and a marginal effect of salience condition, $b = .51$, $SE = .30$, $t = 1.89$, $p = .061$. Neither the main effects for implicit gratitude, $b = .18$, $SE = .16$, $t = 1.17$, $p = .245$, nor the implicit gratitude x salience condition interaction reached significance, $b = .18$, $SE = .21$, $t = .83$, $p = .406$. The indirect effect of gratitude motivation was significant for both the own-focus, $b = .23$, $SE = .07$, 95%CI [.080, .381], $p = .003$, and the other-focus conditions, $b = .24$, $SE = .08$, 95%CI [.079, .406], $p = .004$. However, the confidence interval for the index of moderated-mediation still included zero, indicating that the magnitude of the indirect effects were significantly different across condition, $index = .01$, $SE = .06$, 95%CI [-.107, .145].

A similar pattern of effects emerged with coder-rated gratitude as the outcome variable. The analysis revealed a main effect for both implicit gratitude, $b = .40$, $SE = .16$, $t = 2.43$, $p = .016$, and salience condition, $b = .75$, $SE = .29$, $t = 2.56$, $p = .011$. There was also a significant main effect for gratitude motivation, $b = .22$, $SE = .12$, $t = 1.93$, $p = .056$, although the implicit gratitude x salience condition interaction was not significant, $b = .02$, $SE = .23$, $t = .11$, $p = .915$. The indirect effect for gratitude motivation was marginal in both the own-focus, $b = .15$, $SE = .08$, 95%CI [-.006, .300], $p = .060$, and other-focus conditions, $b = .16$, $SE = .08$, 95%CI [-.008, .321], $p = .063$ however, the confidence interval for the index of moderated-mediation included zero, indicating that it failed to reach significance, $index = .01$, $SE = .04$, 95%CI [-.055, .120].

Discussion

The results across the first five studies offer convincing evidence that repeatedly shows that gratitude was strongly positively associated with an incremental belief, whereas gratitude was negatively associated with an entity belief. Moreover, consistent with studies 3 and 4, results from Study 5 again showed that those with an incremental belief (vs. entity) were more attentive to the gratitude-worthy event when it was more salient. That is, incrementals (vs. entity) exhibited more gratitude when the gratitude event was framed in other-focus terms compared to own-focused terms. Replicating Studies 3 and 4, gratitude motivation mediated the relationship between implicit gratitude for both self- and coder-rated gratitude. Those with an incremental (vs. entity) perspective expressed greater motivations to cultivate a sense of gratitude, in turn predicting higher feelings of gratitude across both the other-focus (i.e., more salient) and own-focus (i.e., less salient) conditions.

STUDY 6

Overview

The findings from Studies 3-5 provide consistent evidence that incrementals (vs. entity) capitalize on salient gratitude opportunities, presumably because they are either more attentive of such events, and/or they are more motivated to foster an overall sense of gratitude. With Study 6, I examine attentiveness to gratitude experiences by manipulating their cognitive resources via a cognitive load manipulation. I reasoned that if incrementals (vs. entities) are more grateful for salient gratitude events because they are being attentive to the event, then incrementals' (vs. entities) gratitude should be hindered when their cognitive resources are otherwise occupied (i.e., high-cognitive load). In other words, I expect incrementals (vs. entities) to experience more gratitude when cognitive resources are available (i.e., low-cognitive load, minimal salience interference); in contrast, I expect both incremental and entity individuals to experience less gratitude when cognitive resources are occupied (i.e., high-cognitive load, maximal salience interference). Simply put, when the salience of a gratitude event is interfered with (i.e., high-cognitive load), it should negatively impact incrementals' capacity to attend to the event, and should lead to less gratitude.

Method

Participants

Participants were 215[20] undergraduate students who completed the study for partial course credit ($M_{age} = 19.01$, $SD = 1.11$). The gender composition of the sample

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[20]Participants ($n = 98$; 31.3%) who identified with an Asian background were excluded from the analyses.

was 126 women, 65 men, and 1 student who identified as non-binary. The ethnic composition of the sample was 82.80% White/Caucasian, 5.73% Black/African American, 4.69% Hispanic/Latino, 2.08% Middle Eastern, and 4.68% who identified with a different ethnic category.

Procedure

Upon filling out informed consent, participants were told that the study focused on how people remember different types of everyday events. Participants learned that they would read and recall details about a short vignette (i.e., getting to move up a spot in line; see Appendix E). To manipulate salience interference, participants were randomly assigned to a cognitive load condition (adapted from Gilbert & Hixon, 1991; Sherman, Lee, Bessenoff, & Frost, 1998). Specifically, participants were given a set of numbers to keep in memory while they read the vignette: in a high-load condition they were given an 8-digit number; in a moderate-load condition they were given a 5-digit number; and in a no-load condition they were not given any number set.

After reading the vignette, participants were instructed to imagine themselves in the vignette and to: respond to the following question in as much detail as possible: *How grateful do you feel for this event*? In the same manner as Studies 3-5, the grateful essays were independently coded by two research assistants for gratefulness (ICC = .77) and for attentiveness (ICC = .87). Participants also rated the degree to which they felt *grateful*, *thankful*, and *appreciative* on a 1 (*not at all*) to 11 (*very much so*) scale (α = .91). The length of each essay (i.e., word count) and the time writing were also recorded.

Once participants completed the gratitude measures, those in the high- and moderate-load conditions were asked to recall the 8- or 5- digit number. Recall accuracy

served as check for the cognitive load manipulation. As an additional manipulation

check, participants were also asked three comprehension questions regarding the vignette

(see Appendix E), after which they completed the same individual differences measures

as in the prior studies, again embedded among filler items (i.e., Big Five): implicit

gratitude ($\alpha = .91$), implicit intelligence ($\alpha = .95$), trait gratitude ($\alpha = .84$), and the

gratitude motivation measure ($\alpha = .63$). After completing demographic information,

participants were thanked and fully debriefed.

Results

Preliminary Analyses

Although an initial examination revealed that self-rated gratitude did not

significantly differ across the moderate ($M = 8.4$, $SD = 1.84$) and high cognitive load

conditions ($M = 8.34$, $SD = 1.66$), $t(166) = -.22$, $p = .826$, there was a significant

difference in coder-rated gratitude ($M_{moderate} = 7.65$, $SD = 1.68$; $M_{high} = 7.08$, $SD = 1.89$),

$t(143) = -1.94$, $p = .055$. For ease of analysis and interpretation, I collapsed across the

moderate and high load conditions for all subsequent analyses, heretofore referred to as

the high load condition.

Manipulation Checks

Nearly all of the participants (89.04%) in the high cognitive load condition (i.e.,

collapsed) correctly remembered the assigned number set. Recall accuracy did not affect

any of the analyses (all ps > .345) and will not be discussed further. Likewise, most all

participants (89.3%) correctly answered the three reading comprehension questions.

However, when entered into a multiple regression with the salience interference condition

and implicit gratitude as predictors, comprehension accuracy did significantly predict

self-reported gratitude, β = -.409, 95%CI [-.79, -.11], SE = .18, t = -2.76 p = .006, such

that students who failed to correctly answer the comprehension questions reported less

gratitude (no other significant effects emerged, all ps > .35). Those participants who did

not fully comprehend the essence of the vignette (i.e., incorrectly answered at least 1

comprehension question; n = 23) were excluded from further analyses.

Primary Analyses

      Gratitude. As in the prior studies, the correlation between implicit gratitude

(combined) and trait gratitude was significant, $r(190)$ = .20, p = .007. Likewise, an

incremental gratitude perspective was significantly positively correlated with trait

gratitude, $r(190)$ = .25, p < .001, whereas the effect for entity was marginally significant,

but in the expected direction, $r(190)$ = -.11, p = .120. Moreover, neither incremental,

$r(190)$ = .06, p = .384, entity, $r(190)$ = .01, p = .877, or implicit gratitude (combined),

$r(190)$ = .03, p = .686 were significantly correlated with self-rated gratitude. However,

the incremental subscale was significantly correlated with coder-rated gratitude, $r(190)$ =

.16, p = .030, whereas the correlation for the entity subscale did not reach significance,

$r(190)$ = -.08, p = .272. The correlation between implicit gratitude (combined) and

coder-rated gratitude was marginally significant, $r(190)$ = .13, p = .077. Coder- and self-

rated gratitude were significantly correlated, $r(190)$ = .28, p < .001, and both were

significantly correlated with trait gratitude, $r_{\text{self-rated}}$ (190) = .40, p < .001; $r_{\text{coder-rated}}$ (190)

= .14, p = .061. Additional correlations and descriptive statistics are presented in Table 6.

      As with Studies 3-5, I regressed participants' gratitude onto the salience

interference condition, implicit gratitude, and their interaction[21] (see Figure 7a). Both the

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[21]As with the prior study results, regression analyses with implicit intelligence as a covariate did not
significantly change the results for self- or coder-rated gratitude, however, implicit intelligence did

main effects for implicit gratitude, $\beta = .03$, 95%CI [-.10, .16], $SE = .07$, $t = .468$, $p = .641$, and salience interference were not significant, $\beta = .09$, 95%CI [-.21, .39], $SE = .15$, $t = .617$, $p = .538$. The salience interference condition x implicit gratitude interaction also did not reach significance, $\beta = .15$, 95%CI [-.16, .45], $SE = .15$, $t = .96$, $p = .336$; in this case, the *a priori* simple slopes, although not significant, were in the expected direction, consistent with Studies 3-5. Specifically, results showed that incrementals' gratitude was negatively affected by the cognitive load manipulation, $b = - .44$, $SE = .39$, $t = 1.13$, $p = .261$, such that incrementals experienced descriptively less gratitude in the high (vs. low) load condition. By comparison, the slope for those with an entity perspective was closer to zero (–1 *SD*), $b = .08$, SE $= .36$, $t = -.21$, $p = .831$.

A similar pattern of effects emerged for coder-rated gratitude as the outcome variable (see Figure 7b). The analysis indicated a marginal main effect of implicit gratitude, $\beta = .12$, 95%CI [-.02, .27], $SE = .07$, $t = 1.69$, $p = .094$, but no main effect of salience interference, $\beta = -.11$, 95%CI [-.41, .19], $SE = .15$, $t = -.75$, $p = .456$. Although the implicit gratitude x salience interference interaction did not reach significance, $\beta = -.11$, 95%CI [-.41, .19], $SE = .15$, $t = -.72$, $p = .476$, the *a priori* simple slopes again fell in the expected direction. Specifically, as in the previous studies, the effect was stronger in the incremental condition (+1 SD), $b = -.43$, $SE = .41$, $t = -1.03$, $p = .304$, compared to the entity condition (–1 *SD*), $b = -.02$, $SE = .39$, $t = -.05$, $p = .958$.

Attentiveness and gratitude motivation. As expected, the correlation between implicit gratitude (i.e., incremental and entity combined) and attentiveness was significantly positively correlated, $r(190) = .14$, $p = .053$. As in the earlier studies, the

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significantly predict self- and marginally predict coder-rated gratitude, respectively, $\beta = .12$, 95%CI [.01, .23], $SE = .06$, $t = 2.11$, $p = .036$; $\beta = -.10$, 95%CI [-.21, .01], $SE = .06$, $t = -1.78$, $p = .074$.

incremental subscale was also significantly correlated with attentiveness, $r(190) = .17$, p = .02, whereas the entity subscale, although in the expected direction, did not reach significance, $r(190) = -.09$, $p = .203$.

As before, I used Hayes' PROCESS macro (2012) to conduct a moderated-mediation model predicting self-rated gratitude, with implicit gratitude (mean-centered) as the predictor variable, coder-rated attentiveness as the mediator, and salience interference (high vs. low cognitive load) as the moderator. The first analysis showed that implicit gratitude, $b = .21$, $SE = .20$, $t = 1.05$, $p = .294$, salience interference, $b = -.18$, SE = .27, $t = -.68$, $p = .498$, and attentiveness, $b = -.002$, $SE = .06$, $t = -.04$, $p = .970$, did not significantly influence gratitude. The salience interference x implicit gratitude interaction also failed to reach significance, $b = -.23$, $SE = .24$, $t = -.96$, $p = .338$. The indirect effect of attentional effort was also not significant for both the no-load, $b = -.0005$, $SE = .01$, 95%CI [-.025, .024], $p = .970$, and the high-load conditions, $b = -.0007$, $SE = .02$, 95%CI [-.037, .035], $p = .970$, and the confidence interval for the index of moderated mediation also included zero, indicating that it was not significant, $index = -.0002$, $SE = .02$, 95%CI[-.055, .040].

I also conducted the same analyses with coder-rated gratitude as the outcome variable. In this case, there was a significant effect of attentiveness on gratitude, $b = .42$, $SE = .06$, $t = 6.72$, $p < .001$, although the main effects for implicit gratitude, .003, SE = .19, $t = .02$, $p = .986$, and salience interference were both non-significant, $b = .30$, $SE =$ .26, $t = 1.14$, $p = .257$. The salience interference x implicit gratitude interaction was also not significant, $b = .15$, $SE = .23$, $t = .63$, $p = .532$. Although the indirect effect for attentional effort was not significant in the no load condition, $b = .08$, $SE = .09$, 95%CI

[-.099, .262], *p* = .376, there was a marginal effect in the high-load condition, *b* = .12, *SE* = .07, 95%CI [-.013, .254], *p* = .078. However, the confidence interval for the index of moderated mediation was not significant, as indicated by a confidence interval that included zero, *index* = -.04, *SE* = .13, 95%CI [-.221, .292].

As in Study 3, 4, and 5, I conducted the same analysis with gratitude motivation as the mediating variable. There was a significant effect of gratitude motivation on self-rated gratitude, *b* = .33, *SE* = .21, *t* = 3.16, *p* = .002, but the main effects for implicit gratitude, *b* = .06, *SE* = .20, *t* = .32, *p* = .749, and salience interference were both non-significant, *b* = -.19, *SE* = .26, *t* = -.72, *p* = .470. The salience interference x implicit gratitude interaction was also not significant, *b* = -.11, *SE* = .24, *t* = -.47, *p* = .636. However, the indirect effect of gratitude motivation was significant in the no-load condition, *b* = .14, *SE* = .06, 95%CI [.021, .265], *p* = .022, but not in the high-load conditions, *b* = .02, *SE* = .03, 95%CI [-.039, .087], *p* = .456. The confidence interval for the index of moderated mediation also did not include zero, , *index* = -.12, *SE* = .08, 95%CI[-.332, -.003], indicating that it was significant; that is, the magnitude of indirect effect of gratitude motivation was significantly larger in the no-load (vs. high-load) condition

The results for coder-rated gratitude mirrored those for self-report; there was a significant effect for gratitude motivation, *b* = .26, *SE* = .11, *t* = 2.25, *p* = .026, but again the main effects for implicit gratitude, *b* = -.03, *SE* = .21, *t* = -.12, *p* = .903, and salience interference were not significant, *b* = .22, *SE* = .28, *t* = .78, *p* = .435. The salience interference x implicit gratitude interaction was also not significant, *b* = .28, *SE* = .26, *t* = 1.07, *p* = .286. The indirect effect of gratitude motivation was marginal in the no-load

condition, $b = .11$, $SE = .06$, 95%CI [-.005, .227], $p = .061$, but again, was not significant

in the high-load condition, $b = .02$, $SE = .03$, 95%CI [-.032, .069], $p = .467$. The

confidence interval for the index of moderated mediation again did not include zero,

indicating that it was significant, $index = -.09$, $SE = .06$, 95%CI[-.280, -.003].

Discussion

Replicating results from the previous studies, Study 6 findings showed again that

implicit gratitude beliefs were significantly associated with trait gratitude; holding an

incremental perspective was significantly positively correlated with trait gratitude,

whereas holding an entity perspective was negatively associated. The combined effect of

implicit gratitude beliefs and salience interference on gratitude, although not significant,

fell in the expected direction. Specifically, incrementals' gratitude was descriptively far

less in the high-load (i.e., greater salience interference) compared to the no load-

condition (i.e., minimal salience interference), this pattern emerged for both self- and

coder-rated gratitude. By comparison, entities' gratitude did not appreciably differ across

the cognitive load conditions. The results suggest that when incrementals' attentiveness

to a salient gratitude-event is interfered with (high vs. low cognitive load), they

experience correspondingly less gratitude. By comparison, interfering with (high vs. low

cognitive load) entities' attentiveness to a salient gratitude-event produced no differential

impact on their gratitude levels, presumably because entities at the outset were using less

cognitive resources to attend to the event.

Absent cognitive load, gratitude motivation mediated the relationship between

implicit gratitude and self-rated gratitude, which is consistent with the results from

Studies 3, 4, and 5. Holding an incremental (vs. entity) perspective was positively related

to increased gratitude motivation, and when incrementals had sufficient resources to attend to the gratitude event (i.e., no cognitive load), their higher levels of gratitude motivation, in turn predicted higher self- and coder- rated gratitude. By comparison, when incrementals' attentiveness was interfered with (i.e., high cognitive load), gratitude motivation was unrelated to their gratefulness, presumably because incrementals were not able to sufficiently attend to the event, and did not experience increased gratitude as a result. However, consistent with prior studies, coder-rated attentiveness did not significantly mediate the relationship between implicit gratitude beliefs and self-rated gratitude across the salience interference condition (i.e., no-load vs. high-cognitive load).

GENERAL DISCUSSION

Abundant evidence links gratitude, characterized as a general orientation to notice and appreciate the positive aspects in one's life, to a host of benefits associated with psychological well-being (for reviews see Nelson & Lyubomirsky, 2016; Wood et al., 2010). Yet, despite the evident benefits of gratitude, theorists posit that experiencing and expressing gratitude is not always particularly easy. The social context in which a gratitude event unfolds likely involves other interpersonal elements that compete for people's attentional resources and, as such, an event worthy of gratefulness may not always be clearly salient, and may at times escape notice, failing to draw people's attention. Simply put, to experience and/or express gratitude, people may at times need to actively regulate their cognitive and attentional resources to notice, appreciate, and subsequently respond to a gratitude-worthy event (e.g. Emmons & Mishra, 2011; Tudge et al., 2015).

Drawing from Dweck et al.'s (1995) implicit theories framework, I examined whether people's implicit beliefs (i.e., incremental vs. entity) concerning the development of various personal characteristics or skills differentially influences the magnitude and frequency of their feelings of gratitude. I reasoned that because people with an incremental perspective of gratitude believe that they can actively regulate and produce feelings of gratitude, they should be correspondingly more attentive and take increased note of salient gratitude-worthy events, capitalizing on opportunities to practice cultivating a grateful perspective. As a result, incrementals should exhibit more frequent and intense state feelings of gratitude, leading to the overall cultivation of higher levels of trait gratitude. By comparison, because people with an entity perspective believe, in part,

that their feelings of gratitude are somewhat uncontrollable and essentially beyond their regulatory control, they should be less cognizant of opportunities to experience and cultivate a grateful perspective. As a result, they should expend less cognitive and attentional resources to notice and attend to gratitude-worthy events, and should generally experience gratitude less frequently, leading to both lower state and trait gratitude levels. With the current set of studies I used correlational, longitudinal, and experimental methods to examine both the fundamental association between implicit gratitude beliefs and gratitude, and whether the effect of implicit gratitude beliefs (i.e., incremental vs. entity) on feelings of gratitude differ as a function of gratitude event salience.

Across the current six studies, the correlational results were reliably consistent with the hypotheses in that implicit gratitude beliefs were strongly correlated with trait gratitude. Specifically, gratitude was strongly positively associated with an incremental perspective, whereas gratitude was strongly negatively associated with an entity perspective. Again, this effect was consistently replicated across all studies; those with an incremental belief systematically exhibited higher gratitude levels compared to those with an entity belief. In addition, I found that across all studies, the association between implicit gratitude beliefs and both trait and state gratitude remained significant after controlling for implicit beliefs about other domains (i.e., intelligence); these results support the position that implicit beliefs about gratitude are independent from individuals' implicit beliefs about other domains, and are uniquely predictive of gratefulness.

In Study 1, I also initially explored whether regulating attentiveness to gratitude events mediated the relationship between implicit gratitude beliefs and trait gratitude

levels. The analyses revealed that an incremental (vs. entity) perspective was significantly associated with a reported motivation to attentive to gratitude events, in general, which in turn predicted higher levels of dispositional gratitude. The results from Study 2's longitudinal analyses not only replicated the correlational findings from Study 1 for trait gratitude, but the results also showed that, on average, holding an incremental (vs. entity) perspective was associated with greater state gratitude across the weekly exercises. There was also suggestive evidence that incrementals (vs. entities) exhibited more consistent attentional effort across the eight weeks. More specifically, across each week incrementals were consistently attentive to the gratitude-exercise, whereas entities' attentiveness gradually decreased from week 1 to week 8. However, in this case attentiveness nonetheless failed to mediate the relationship between implicit gratitude beliefs and state gratitude.

Recall that adopting a grateful perspective is not always easy and people may need to attentively take notice that a gratitude-worthy event has actually occurred and to assess the particular event as one worthy of grateful feelings. I reasoned that because incremental (vs. entity) theorists are confident that they can actively regulate their behavior to experience a desired emotion, they should believe that they can regulate their feelings of gratitude and should be more likely to expend cognitive resources to attend to a gratitude event, and to cultivate an overall sense of daily gratitude. On the other hand, because entity theorists typically believe that they cannot cognitively regulate a desired emotion, they should likewise believe that their gratitude cannot be successfully regulated; hence, they should expend less cognitive resources attending to a gratitude event. Compared to entity theorists, incremental theorists should be more sensitive and

attentive to a salient (vs. less salient) gratitude event, and as a result, incrementals (vs. entities) should experience more state feelings of gratefulness, which overall should lead to greater dispositional gratitude. In Studies 3-5, I examined this issue using experimental methods to manipulate the general salience of a gratitude event. The results across all 3 studies provided consistent evidence in support of the key hypothesis. When the gratitude event was more salient, those with an incremental perspective were attentive to the opportunity, and their level of gratitude was consistently higher than those with an entity perspective. In contrast, when the gratitude event was less salient, both entity and incremental theorists exhibited similarly less gratitude; gratitude for those with an entity perspective remained essentially unchanged across salience conditions (i.e., positive vs. typical; self vs. other).

The results across Studies 3, 4, and 5 also revealed that incrementals' motivation to cultivate gratitude mediated the relationship between implicit gratitude beliefs and self-rated gratitude. The analyses from Studies 4 and 5 also indicated a significant indirect effect for gratitude motivation on coder-rated gratitude; this indirect effect did not reach significance in Study 3, however. These findings are generally consistent with those from Study 1: incrementals exhibited greater motivations to deliberately cultivate an overall sense of gratitude, which in turn predicted higher levels of state gratitude. Although the omnibus indices of moderated mediation failed to reach significance, the indirect effects that emerged across the 3 studies provided a consistent pattern of results; both gratitude motivation and attentiveness were descriptively much larger in the more salient compared to the less salient condition. This effect pattern suggests that, on average, those with an incremental (vs. entity) perspective are more motivated to

cultivate gratitude and to attend to gratitude events, in general, which in turn predicts incrementals' tendency to experience increased gratitude when a gratitude event is relatively salient. Simply put, across the salience conditions the difference in gratitude between those with an incremental and entity perspective can be partially accounted for by gratitude motivation and increased attentiveness to gratitude events.

Recall that with Study 6, I reasoned that if incrementals (vs. entities) are more grateful for salient gratitude events because they are more attentive to the event, then incrementals' (vs. entity) gratitude should be hindered when their cognitive resources are otherwise occupied (i.e., high-cognitive load). That is, when the salience of a gratitude event is interfered with (i.e., high-cognitive load), it should negatively impact both incremental and entity theorists' capacity to attend to the event, and should lead to less gratitude. However, when cognitive resources are available (i.e., low-cognitive load), incrementals were expected to exhibit more gratitude compared to those with an entity belief. The results from Study 6, although not significant, were descriptively consistent with the hypotheses suggesting that when incrementals' capacity to attend to a salient gratitude-event is interfered with (i.e., high cognitive load), they experience correspondingly less gratitude compared to when there is minimal interference (i.e., low cognitive load). By comparison, interfering with (i.e., high cognitive load) entities' attentiveness to a salient gratitude-event produced no appreciable difference in their gratitude levels across the interference conditions (i.e., high and low cognitive load). Moreover, the results from mediation analyses were consistent with Studies 3, 4, and 5; specifically, when incrementals (vs. entities) had sufficient attentional resources available (i.e., no cognitive load), their overall higher level of gratitude motivation lead them to

exhibit increased levels of self-rated gratitude. When incrementals lacked sufficient resources (i.e., high cognitive load), their gratitude motivation emerged as unrelated to their gratefulness, presumably because they were unable to sufficiently attend to the event, and as a result did not experience increased gratitude.

As noted above, although the descriptive interaction effect pattern in Study 6 was consistent with hypotheses, the key *a priori* slope for incremental theorists failed to reach significance. Recall that in Studies 3 and 4, incrementals exhibited significantly less gratitude for the *typical gratitude* event compared to the *good gratitude* event. I speculate that the gratitude event (i.e., moving up a spot in line) in Study 6 may have unintentionally focused participants' thoughts on such a typical gratitude event, and as such, they may not have considered *moving ahead in line* as an event that was particularly/especially worthy of much gratitude. That is, the gratitude event may have more closely resembled a typical (vs. good) event, resulting in lower gratitude levels for incrementals, which did not significantly differ from the gratitude level for entity theorists. I aim to conduct future work to explore this possibility.

Why might an incremental rather than an entity perspective be so consistently and robustly related to feelings of gratitude? Across the current set of studies, the evidence suggests that those with a more incremental gratitude perspective are more deliberately attentive to opportunities that prompt a sense of gratitude. When a gratitude-worthy event is salient, incrementals recognize the event as such, and in doing so, they are afforded the opportunity to consistently and repeatedly practice experiencing and exhibiting gratefulness, ultimately developing a more a grateful disposition/demeanor. As noted in the introduction, because incrementals believe that maintaining regulatory effort and

practice leads to improved outcomes in general, they most likely also believe that they can successfully cultivate feelings of gratefulness, and as such, are motivated to be attentive to any particular occasion in which they can engage in practice. This rationale finds support from work showing that when individuals repeatedly experience more frequent and intense momentary states of gratitude, it typically translates over time into higher levels of dispositional gratitude (McCullough et al., 2002; Wood et al., 2008).

To date, most theorists and researchers typically characterize gratitude as an emotional response that is elicited in conjunction with a positive event. However, evidence also suggests that the mere existence of a positive event may not be sufficient to prompt increased feelings of gratitude, and that experiencing and expressing gratitude can at times be quite difficult; even relatively clear gratitude events can remain unnoticed (e.g., Algoe et al., 2010; Sommers & Kosmitzki, 1988). The current work provides converging evidence that people, at times, may need to deliberately attend to salient gratitude events; indeed, to the extent that people are motivated to regulate their attention to take note of gratitude worthy events, they are more successfully able to cultivate a general sense of gratitude. Framing gratitude as a behavior that can be regulated and practiced with attentional effort may have significant implications for pragmatic intervention-based efforts that are aimed at increasing people's feelings of gratitude, which we know from prior work, results in increased psychological well-being. For instance, to foster the development of a more consistently grateful perspective, gratitude interventions that encourage people to adopt a more incremental mindset could be paired with repeated gratitude-building exercises to be maximally effective.

Although the present work offers compelling findings, there are nonetheless limitations that warrant discussion. First, the result patterns for coder- and self-rated measures were quite consistent, and coder reliability (i.e., gratitude, attentiveness) was generally good (ICCs > .70[22]); however, *coder-rated* effects (vs. self-rated) were typically weaker across the studies, and at times failed to reach traditional significance. Notwithstanding this pattern, coder-rated gratitude was consistently highly correlated with self-gratitude ratings. Moreover, the overall effect pattern for coder-rated outcomes generally mirrored the pattern for self-rated gratitude. Although generally less robust, coder-rated gratitude provides consistent evidence that converges with self-reported gratitude to show that incrementals' and entities' gratitude differs as a function of gratitude event salience. Second, with the current project I focused on implicit gratitude beliefs as an individual difference variable; future work would fruitfully profit from examining whether and by what means an incremental (vs. entity) gratitude perspective can be experimentally induced or manipulated.

The present findings provide compelling evidence that people hold different implicit gratitude beliefs (incremental vs. entity), which subsequently leads them to experience more or less feelings of overall gratitude. Moreover, when a gratitude event was more salient, incremental theorists were more attentive, and their gratitude level was consistently higher than entity theorists. However, when the gratitude event was less salient, both entity and incremental theorists exhibited similarly less gratitude. In addition, across the salience conditions the difference between incrementals and entities

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[22]Coding for event positivity in Studies 4 and 5 were not reliable (ICCs of .35 and .20), suggesting that event positivity may have been particularly difficult to assess.

gratitude levels can be partially explained by gratitude motivation and increased attentiveness to the gratitude event. To conclude, the proposition underlying the current work is consistent with the broader theoretical notion that people can learn to increase their feelings of gratefulness with focused instruction and consistent practice over time. Specifically, if people can successfully learn how to adopt an incremental (vs. entity) perspective of gratitude, their feelings of gratefulness should correspondingly increase, and as prior evidence shows, such an increase should also lead to boosting people's subjective well-being.

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APPENDIX A

Table 1

Study 1: Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6
1. Inc-Gratitude	—					
2. Ent-Gratitude	-.64**	—				
3. Implicit Gratitude (Combined)	.89**	-.92**	—			
4. Inc-Intelligence	.41**	-.20**	.33**	—		
5. Ent-Intelligence	-.36**	.52**	-.49**	-.77**	—	
6. Implicit Intelligence (Combined)	.41**	-.39**	.44**	.93**	-.95**	—
7. Attentiveness	.38**	-.18*	.30**	.21**	-.12	.17*
M	5.15	2.97	5.09	4.5	3.64	4.43
SD	1.28	1.46	1.24	1.53	1.68	1.51

Note. M and *SD* represent mean and standard deviation. Incr-Gratitude = incremental gratitude beliefs; Ent-Gratitude = entity gratitude beliefs; Implicit Gratitude = combined scale; Incr-Intelligence = incremental intelligence beliefs; Ent-Intelligence = entity intelligence beliefs; Implicit Intelligence = combined scale.

*p < .05. **p < .01.

Table 2

Study 2: Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6
1. Inc-Gratitude	—					
2. Ent-Gratitude	-.73**	—				
3. Implicit Gratitude (Combined)	.93**	-.93**	—			
4. Trait Gratitude	.39**	-.25*	.35**	—		
5. Coder Attentiveness (averaged across weeks)	.04	.01	.02	.26*	—	
6. Coder Gratitude (averaged across weeks)	.11	-.15	.14	.34**	.79**	—
7. Self-reported Gratitude (averaged across weeks)	.23	-.13	.19	.58**	.16	.36**
M	5.59	2.22	5.69	5.95	4.99	5.16
SD	1.19	1.21	1.12	0.87	0.75	0.74

Note. M and *SD* represent mean and standard deviation. Incr-Gratitude = incremental gratitude beliefs; Ent-Gratitude = entity gratitude beliefs; Implicit Gratitude = combined scale.

*p < .05. **p < .01.

Table 3

Study 3: Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7
1. Inc-Gratitude	—						
2. Ent-Gratitude	-.70**	—					
3. Implicit Gratitude (Combined)	.92**	-.92**	—				
4. Trait Gratitude	.35**	-.24**	.32**	—			
5. Gratitude Motivation	.34**	-.31**	.35**	.53**	—		
6. Self-Gratitude	.13†	.00	.07	.29**	.25**	—	
7. Coder Gratitude	.01	-.01	.01	.18*	.04	.64**	—
8. Coder Attentiveness	.04	-.07	.06	.01	-.08	.12†	.51**
M	5.41	2.21	5.6	6.07	6.52	8.99	4.8
SD	1.09	1.07	0.99	0.91	1.33	2.18	1.97

Note. M and *SD* represent mean and standard deviation. Incr-Gratitude = incremental gratitude beliefs; Ent-Gratitude = entity gratitude beliefs; Implicit Gratitude = combined scale.

$\dagger p < .10$. $*p < .05$. $**p < .01$.

Table 4

Study 4: Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7
1. Inc-Gratitude	—						
2. Ent-Gratitude	-.76**	—					
3. Implicit Gratitude (Combined)	.94**	-.93**	—				
4. Trait Gratitude	.22**	-.21**	.23**	—			
5. Gratitude Motivation	.25**	-.22**	.25**	.51**	—		
6. Self-Gratitude	.17**	-.10	.15*	.39**	.41**	—	
7. Coder Gratitude	.06	-.09	.08	.21**	.17**	.53**	—
8. Coder Attentiveness	.09	-.13*	.12†	.08	.05	.15*	.53**
M	5.48	2.21	5.63	6.13	6.56	86.08	8.00
SD	1.17	1.06	1.05	0.77	1.26	17.42	1.71

Note. M and *SD* represent mean and standard deviation. Incr-Gratitude = incremental gratitude beliefs; Ent-Gratitude = entity gratitude beliefs; Implicit Gratitude = combined scale.

$\dagger p < .10$. $*p < .05$. $**p < .01$.

Table 5

Study 5: Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7
1. Inc-Gratitude	—						
2. Ent-Gratitude	-.66**	—					
3. Implicit Gratitude (Combined)	.88**	-.93**	—				
4. Trait Gratitude	.56**	-.58**	.63**	—			
5. Gratitude Motivation	.49**	-.56**	.58**	.68**	—		
6. Self-Gratitude	.38**	-.27**	.35**	.38**	.39**	—	
7. Coder Gratitude	.34**	-.34**	.37**	.28**	.34**	.45**	—
8. Coder Attentiveness	.29**	-.39**	.38**	.36**	.34**	.19*	.69**
M	5.52	2.8	5.36	5.49	6.43	9.24	7.51
SD	1.23	1.6	1.29	1.25	1.53	1.93	2.09

Note. M and *SD* represent mean and standard deviation. Incr-Gratitude = incremental gratitude beliefs; Ent-Gratitude = entity gratitude beliefs; Implicit Gratitude = combined scale.

*p < .05. **p < .01.

Table 6

Study 6: Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6	7
1. Inc-Gratitude	—						
2. Ent-Gratitude	-.76**	—					
3. Implicit Gratitude (Combined)	.94**	-.93**	—				
4. Trait Gratitude	.25**	-.11	.20**	—			
5. Gratitude Motivation	.23**	-.11	.18*	.44**	—		
6. Self-Gratitude	.06	.01	.03	.40**	.23**	—	
7. Coder Gratitude	.16*	-.08	.13	.14	.17*	.28**	—
8. Coder Attentiveness	.17*	-.09	.14	.04	.08	.00	.45**
M	5.45	2.21	5.62	6.11	6.3	8.27	7.31
SD	1.24	1.14	1.11	0.85	1.22	1.74	1.88

Note. M and *SD* represent mean and standard deviation. Incr-Gratitude = incremental gratitude beliefs; Ent-Gratitude = entity gratitude beliefs; Implicit Gratitude = combined scale.

p < .05. **p* < .01.

APPENDIX B
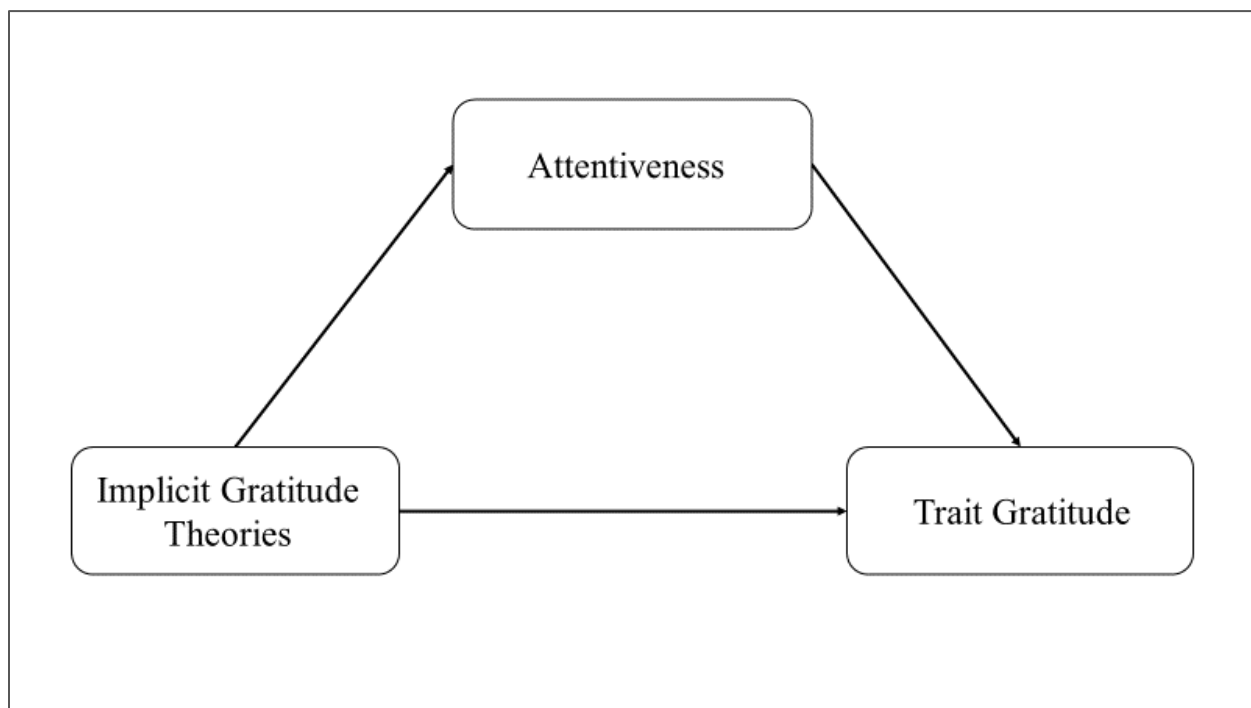
Figure 1. Descriptive mediation model; Studies 1 and 2.
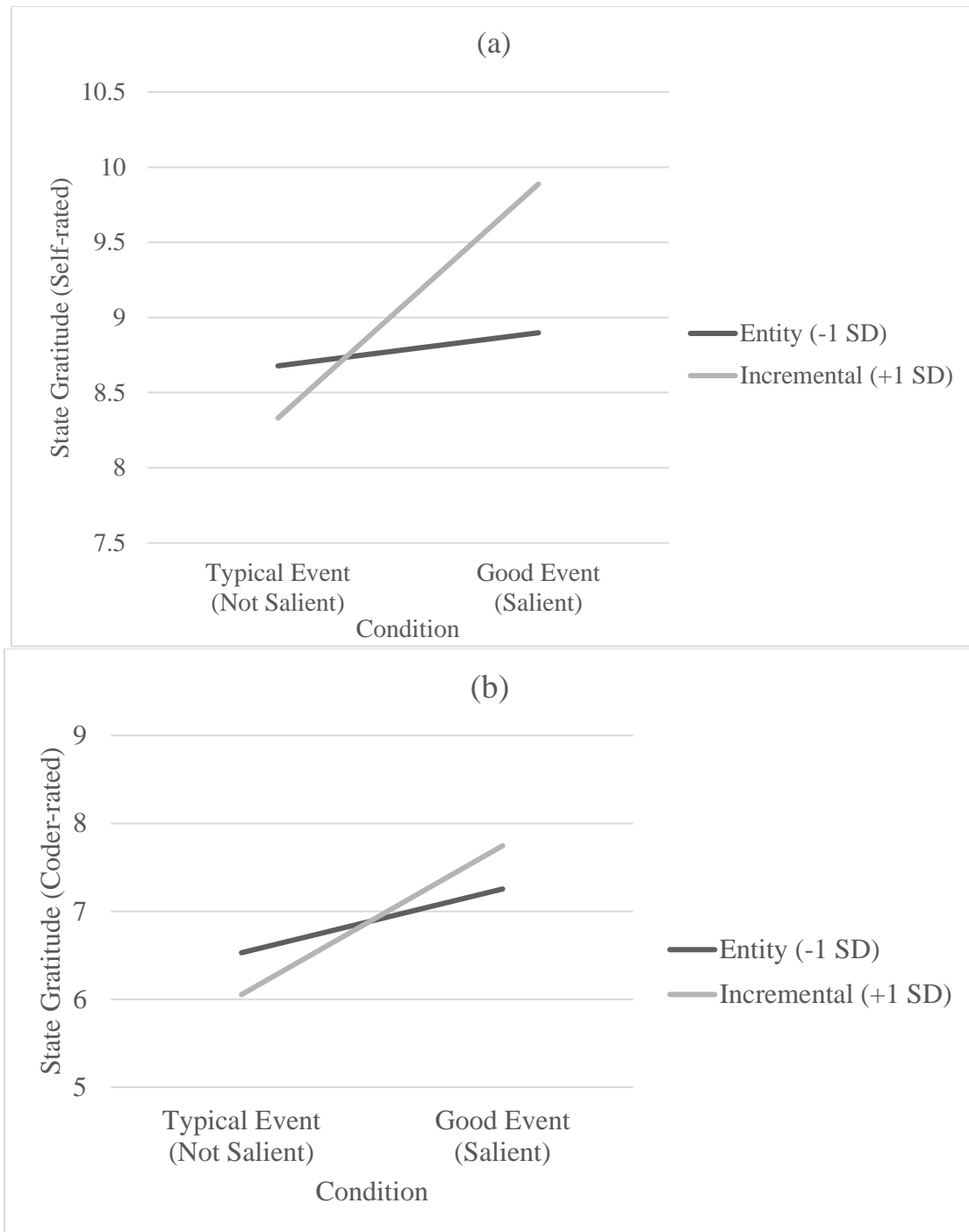
Figure 2. Study 3: Effect of implicit gratitude beliefs on self- (a) and coder-rated (b) state gratitude as a function of gratitude salience. Implicit gratitude is plotted at 1 standard deviation above (more incremental beliefs) and 1 standard deviation below the mean (more entity beliefs).
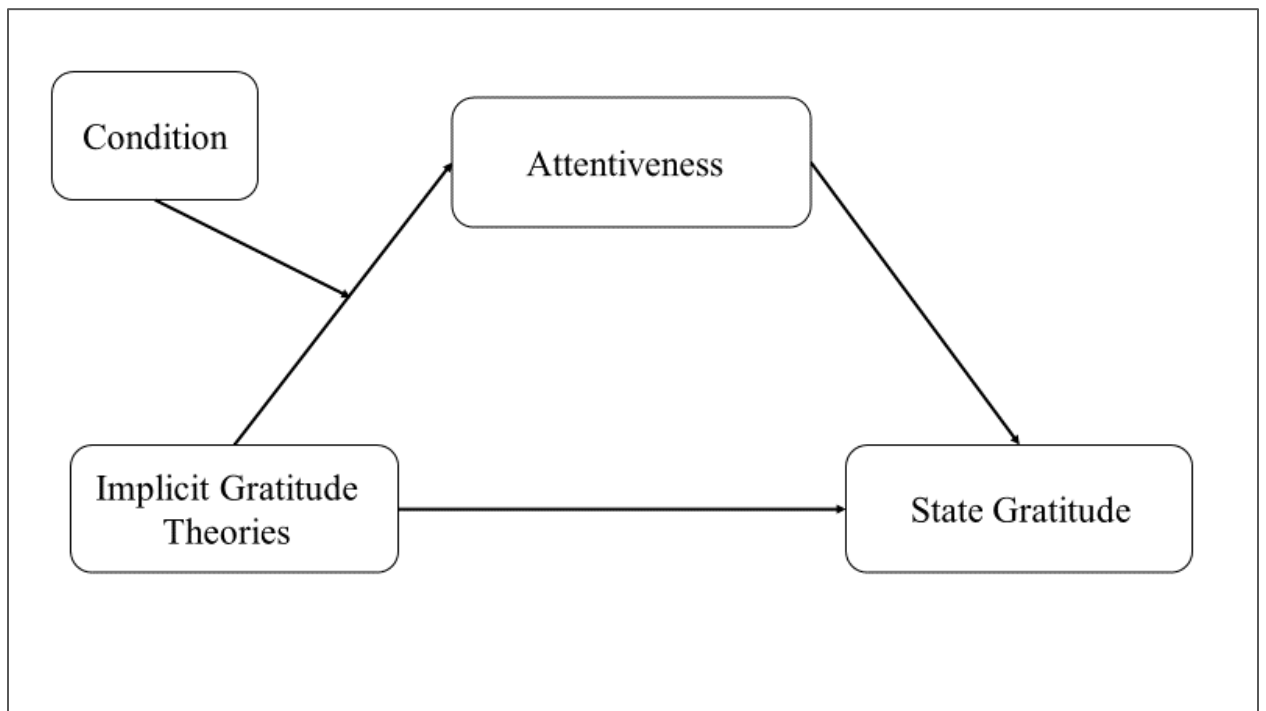
Figure 3. Descriptive moderated-mediation model where attentiveness (coder-rated) is a

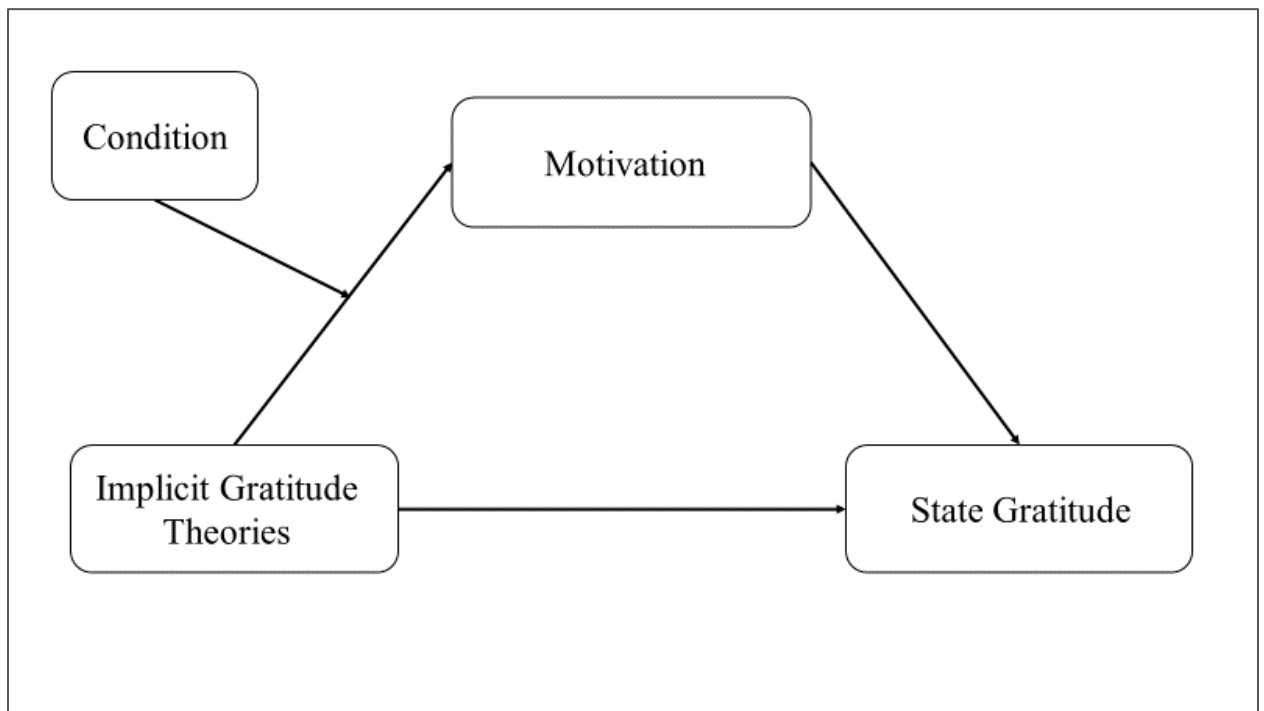mediator and condition (salient vs. not salient conditions) is a moderator; Studies 3-6.

Figure 4. Descriptive moderated-mediation model where gratitude motivation is a

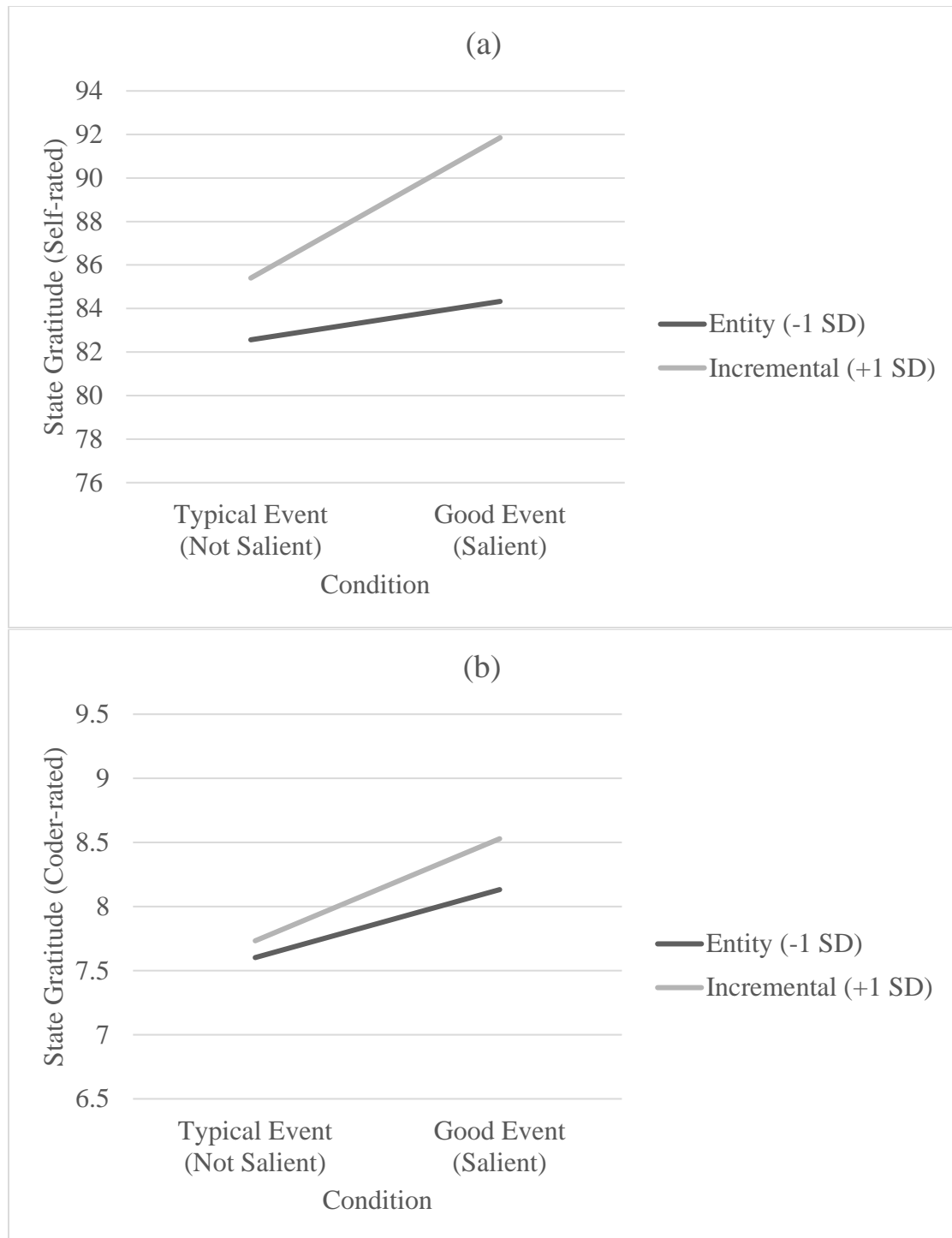mediator and condition (salient vs. not salient conditions) is a moderator; Studies 3-6.

Figure 5. Study 4: Effect of implicit gratitude beliefs on self- (a) and coder-rated (b) state

gratitude as a function of gratitude salience. Implicit gratitude is plotted at 1 standard deviation

above (more incremental beliefs) and 1 standard deviation below the mean (more entity beliefs).
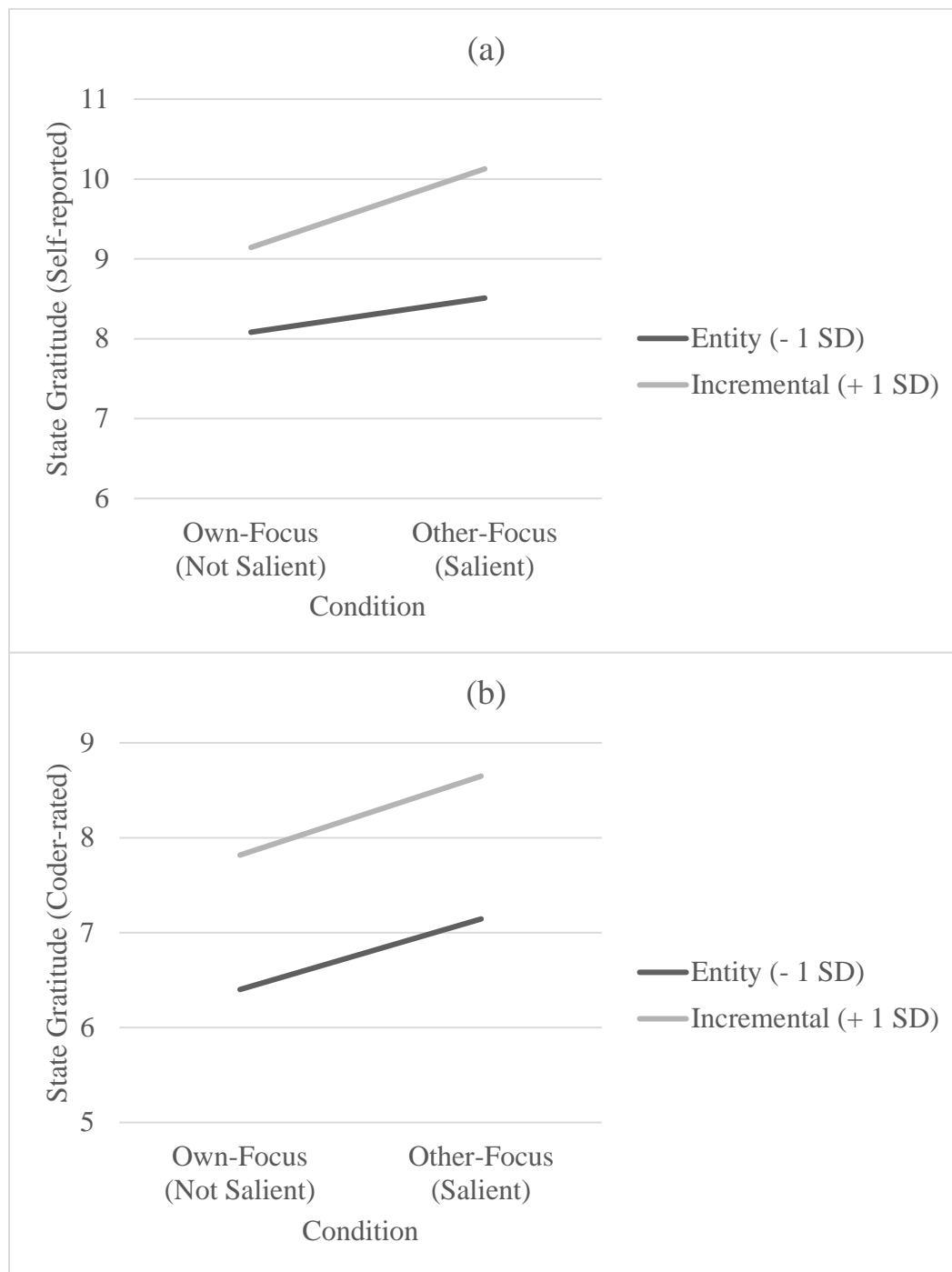
Figure 6. Study 5: Effect of implicit gratitude beliefs on self- (a) and coder-rated (b) state

gratitude as a function of gratitude salience. Implicit gratitude is plotted at 1 standard

deviation above (more incremental beliefs) and 1 standard deviation below the mean
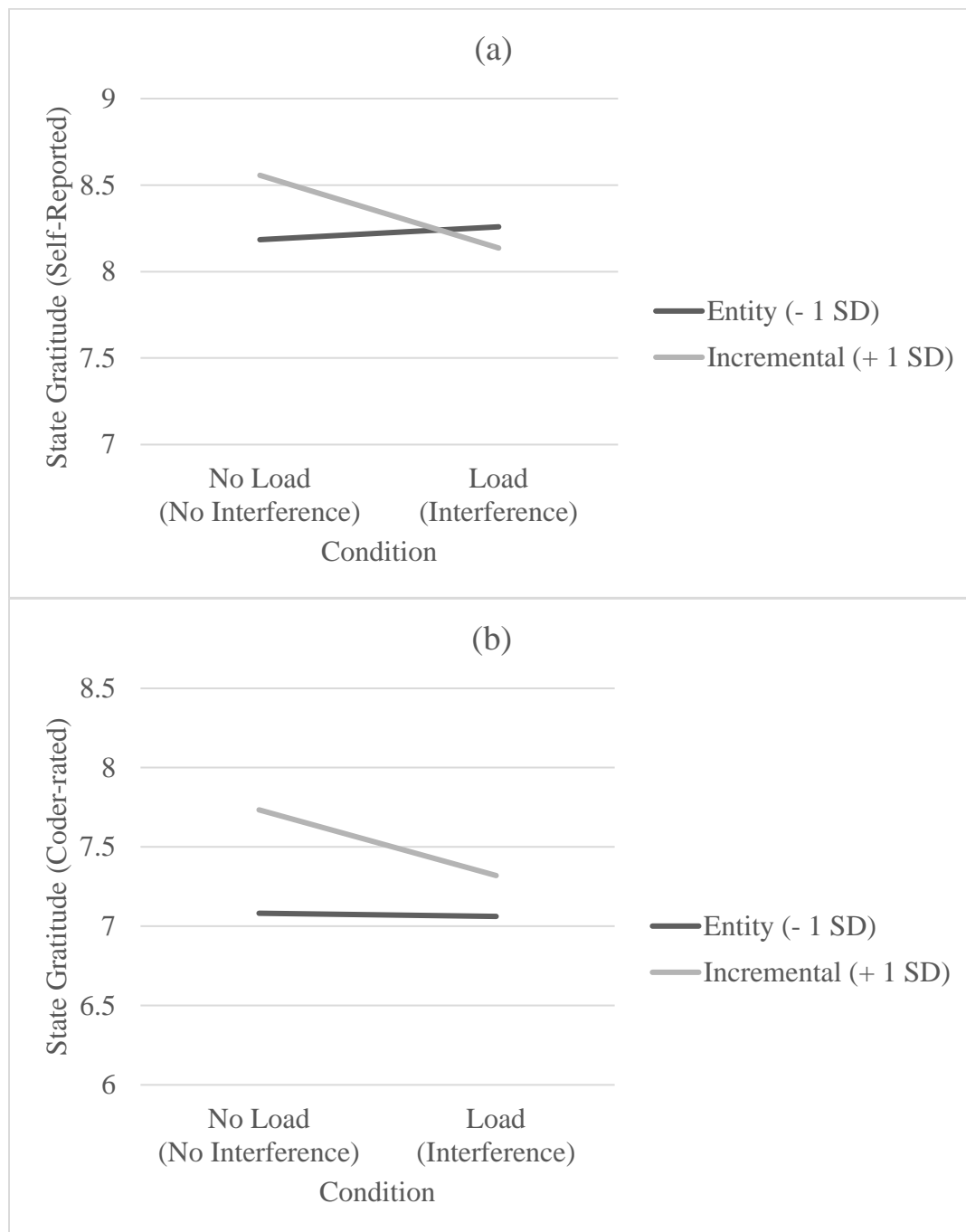
(more entity beliefs).

Figure 7. Study 6: Effect of implicit gratitude beliefs on self- (a) and coder-rated (b) state gratitude as a function of gratitude salience. Implicit gratitude is plotted at 1 standard deviation above (more incremental beliefs) and 1 standard deviation below the mean (more entity beliefs).

APPENDIX C

Results across studies consistently showed that Asian participants' gratitude was significantly different from those who identified with a different ethnic background. In regression analyses with trait gratitude as the outcome variable and ethnicity (Asian vs. Non-Asian) entered as a categorical predictor, Asian participants reported significantly less gratitude on average across studies, $\beta_{study\ 2} = -.37$, $SE = .20$, $t = 1.84$, $p = .070$; $\beta_{study\ 3} = -.60$, $SE = .15$, $t = 4.03$, $p < .001$; $\beta_{study\ 4} = -.82$, $SE = .13$, $t = 6.28$, $p < .001$; $\beta_{study\ 6} = -.77$, $SE = .13$, $t = 6.10$, $p < .001$. Although the effect of ethnicity in Study 5 did not reach significance, $\beta = -.56$, $SE = .37$, $t = 1.48$, $p = .142$, the effect size was comparable to other studies and in the expected direction; moreover, because Study 5 constituted an M-Turk sample (vs. Purdue Introductory Psychology students), the percentage of individuals who identified with an Asian background was relatively small (6%), and thus power to detect ethnic differences is expected to be correspondingly diminished.

Additional analyses showed that ethnic background moderated the key salience condition x implicit gratitude beliefs interaction in 3 out of the 4 experimental studies that manipulated salience, as indicated by a significant or marginally significant 3-way interaction between salience condition, implicit theories, and ethnic category (Asian vs. Non-Asian): $\beta_{Study\ 3} = 1.39$, $SE = .74$, $t = 1.87$, $p = .063$; $\beta_{Study\ 4} = .17$, $SE = .30$, $t = .56$, $p = .578$; $\beta_{Study\ 5} = .91$, $SE = .55$, $t = 1.66$, $p = .099$; $\beta_{Study\ 6} = .68$, $SE = .34$, $t = 2.01$, $p = .05$. These results indicate that not only was gratitude appreciably lower among those with Asian (vs. not) background, but also that those who identified with an Asian ethnicity also responded differently to the salience manipulation across the studies. Given the relatively consistent effect of ethnic category on the key variables, for ease of

interpretation I removed participants who identified with an Asian background from all study analyses. However, in future work I aim to further examine this potentially interesting cultural difference to explore the possible mechanisms that might explain the effect.

APPENDIX D

Study Measures

Implicit Gratitude Theories Scale

Incremental Items:
1. No matter who you are, you can significantly change your level of gratitude.
2. You can always substantially change how grateful you are.
3. No matter how much gratefulness you have, you can always change it quite a bit.
4. You can change your basic level of gratitude considerably.

Entity Items:
1. You are born with a certain level of gratitude, and there's not really much you can do to change it.
2. Your level of gratefulness is something about you that you can't change very much.
3. To be honest, you can't really change how grateful you are.
4. You can learn new things, but you can't really change your basic level of gratitude.

Implicit Intelligence Theories Scale

Incremental Items:
1. No matter who you are, you can significantly change your intelligence level.
2. You can always substantially change how intelligent you are.
3. No matter how much intelligence you have, you can always change it quite a bit.
4. You can change even your basic intelligence level considerably.

Entity Items:
1. You have a certain amount of intelligence, and you can't really do much to change it.
2. Your intelligence is something about you that you can't change very much.
3. To be honest, you can't really change how intelligent you are.
4. You can learn new things, but you can't really change your basic intelligence.

Gratitude Internal/External Motivation Scale

Internal Motivation Items:
1. I am personally motivated to be a genuinely grateful person.
2. Being grateful is important to my self-concept.
3. It is personally important to me to be genuinely grateful in almost every circumstance.

External Motivation Items (reverse-coded):

1. I try to hide any ungrateful thoughts in order to avoid negative reactions from others.
2. I attempt to appear like a grateful person in order to avoid disapproval from others.
3. I try to act like a grateful person because of pressure from others.

APPENDIX E

Study 6 Vignette and Comprehension Questions

Vignette:

You are waiting in line at a new grocery store on campus. The store opened recently, and it is your first time going there. You stopped in because it is late in the afternoon and you wanted to pick up a snack. You have arranged to meet with someone in a few minutes and are running late. Because you have never been to this grocery store before, you are not quite sure how long it will take to get from here to your meeting. Noticing that you appear to be in a hurry, the person in front of you lets you go first. You accept the person's offer and leave the store faster than you would have otherwise. As you walk to your meeting, you think about your upcoming class assignments for the rest of the week.

Comprehension Questions:

1. Where were you waiting in line?
   a. A grocery store
   b. An amusement park
   c. A traffic light

2. This was a place you had visited many times before.
   a. True
   b. False

3. After leaving you:
   a. Went to meet someone on campus
   b. Drove back to your apartment
   c. Went to a concert