



The influence of goal orientation on gratitude at work considering prosocial motivation

Janice Sanchez¹ · Chia-Jung Tsay² · Belén López-Pérez³

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Abstract

Although research has shown that gratitude has mostly beneficial consequences, less is known about its motivational antecedents. As goal orientations influence goals and behaviors, we considered how they also impact emotions. To that aim, we investigated the relation between work domain goal orientation and the experience of gratitude. Study 1 ($N=102$) demonstrated that a learning goal orientation was positively correlated with gratitude but a performance goal orientation was not. Study 2 ($N=87$) experimentally demonstrated that participants experienced more gratitude when learning goals rather than performance goals were valued at work. In Study 3 ($N=157$), work prosocial motivation cross-sectionally mediated the impact of a learning goal orientation on gratitude. Preregistered Study 4 ($N=257$) replicated Study 2 and 3's findings through an experiment and categorical mediation. Our results suggest that goal orientation influences gratitude, and that prosocial motivation can serve an explanatory function for its relationship with gratitude at work.

Keywords Gratitude · Goal orientation · Learning · Performance · Prosocial motivation

It is well known in positive psychology research that the experience of gratitude can help people cope with problems and experience less stress in their lives (e.g., Lin, 2016), but are some individuals able to access gratitude more easily? As motivational goal orientations influence individuals' goals and behaviors, we considered how they also impact the experience of emotions since goals regulate thoughts and behaviors that also shape emotions (Lazarus, 1991). Previous research on goal orientation mainly distinguishes between learning (or mastery) goals and performance goals (Dweck, 1986). Learning goals involve an orientation towards mastering new skills or concepts. In contrast, people with performance goals are more focused on seeking favorable judgments (Dweck, 1986; VandeWalle, 1997). Here, we propose that learning goal orientation should

promote gratitude as it engenders thoughts of gaining mastery in something (learning something) and, therefore, being grateful to the source of that learning when considering attribution. We first explore the link between goal orientation and gratitude and test the idea that learning goal orientation might be associated with gratitude via a prosocial mechanism, the desire to help others. This is because goal orientation shapes people's views of others, namely, learning orientation is associated with cooperation (i.e., Poortvliet & Giebels (2012) and helping behavior (i.e., Poortvliet & Darnon, 2014).

Gratitude and precursors

Gratitude is broadly defined as a state in which a positive outcome has been attained from an external source (Emmons & McCullough, 2003). Feelings of gratitude generally have several beneficial relational and well-being effects both at the individual and organizational levels. Gratitude strengthens relationships (Algoe et al., 2008; Lyubomirsky et al., 2005), engenders cooperation (DeSteno et al., 2010), promotes prosocial behavior (Grant & Gino, 2010; McCullough et al., 2001), and decreases cheating and promotes better economic decisions (DeSteno et al., 2014; DeSteno et al., 2019).

✉ Janice Sanchez
janice.sanchez@ucl.ac.uk

¹ UCL School of Management, University College of London, London, UK

² Department of Management and Human Resources, University of Wisconsin-Madison, Madison, WI, USA

³ School of Health Sciences, University of Manchester, Manchester, UK

Beyond correlations between gratitude and life satisfaction (Emmons & McCullough, 2003) and prosociality (Ma et al., 2017), gratitude has an established causal effect on well-being (Kaplan et al., 2014; Lambert et al., 2012). Some research has investigated the potential downsides of gratitude, such as dependency when reciprocity is unbalanced and fears of social sanctions or disapproval (Komter, 2004). Another line of work considered the constant use of positive reframing in which continually reframing negative emotions into positive ones can be unhelpful, as well as being indiscriminate, that is, not knowing when it is appropriate to be grateful, which can lead to being exploited or manipulated (Morgan et al., 2015). However, most research finds that experiencing gratitude brings about a wide range of personal and social benefits.

Although the beneficial consequences of gratitude have been studied, much less attention has been given to its precursors beyond correlations with personality traits (Wood et al., 2008). Thus far, only Kruse et al. (2014) found that humility predicted the amount of gratitude felt after a gratitude induction. Recent proposals regarding the antecedents of gratitude at work have suggested that gratitude initiatives, such as appreciation programs, contact with beneficiaries, and developmental feedback, may increase episodic gratitude (Fehr et al., 2017). These initiatives can be relatively simple to implement; for instance, allowing customers to see the staff who help them increased customers' gratitude towards them, which in turn, increased perceived value of the service (Buell et al., 2017). In their review, Armenta et al. (2017) propose that gratitude promotes self-improvement but recognize some limitations calling for research to identify ideal situations in which to experience gratitude and variations due to culture.

This work answers the call to identify circumstances and environmental factors facilitating the experience of gratitude. There are some goal orientation and motivational theories that provide more understanding about how goals influence emotions, particularly with regards to gratitude. Motivational goal orientations can help us better understand gratitude as goal orientations place value on different beliefs and goals which affect motivation and behavior. Situations that engender emotional experiences may also be perceived differently through this mental framework (VandeWalle, 2019). Regulatory focus (promotion vs. prevention focus) has been found to affect gratitude, with promotion focus leading to more gratitude (Mathews & Shook 2013) "both product of an expanded social world and often involve exploratory or approach behavior" (p. 191). Mafael (2019) also found that consumers were influenced by both regulatory orientation and valence which led to product reviews and gratitude. These findings highlight how regulatory focus may shift emotional responses.

Beyond these streams of research, learning and performance goal orientations can also shed light on individual

differences in terms of achievement motivation. Individuals' goal orientation has been found to impact academic achievement and wellbeing, and also performance outcomes at work. For example, salespeople with learning goals outperform those with performance goals (VandeWalle et al., 1999). Further, goal orientation influences self-efficacy and performance as goal orientation can affect the type of feedback people seek (e.g., self-improvement vs. self-validation; Janssen & Prins, 2007). Individual differences are interesting to consider as thought must be given to personal meaning generation in order to understand people's emotions (Lazarus, 1991). For instance, in the same situation, two individuals can have different experiences, depending on how the situation is interpreted (e.g., gratitude vs. resentment). Following this, we argue that people's motivational goal orientations, specifically learning and performance orientation, can help us better understand differences in gratitude experienced, since they are conceptualized as a mental framework through which people interpret and respond to their environment (Dweck & Leggett, 1988). Although learning goals and performance goals are both important to achievement (and individuals can value both), being oriented toward one or the other can affect one's motivation and persistence toward a goal. While people may have an internal, trait-like motivational orientation (Dweck & Leggett, 1988; Payne et al., 2007), goal orientation may also be state-like, influenced by a variety of circumstances which could include organizational work culture and tasks (Murphy & Dweck, 2010). We are also interested in the state-like quality as this may be more modifiable.¹

We thus aimed to test how goal orientation can impact people's feelings of gratitude. We considered gratitude as trait gratitude and the experience of gratitude (state), and as such, our designs fall under the category of the most typical experimental research on gratitude (receiving something). Particularly, we focused on participants feeling grateful to another person.

Present studies

Given that goal orientations influence the personal meaning of different situations triggering potentially different emotional experiences, we expected a relationship between gratitude and goal orientation. We hypothesized that learning

¹ It is important to note that goal orientations differ from mindsets, as mindsets make up individuals' belief systems that shape their views of situations (Erdley et al., 1997; Yeager & Dweck, 2012) and, thus, impact their goals and behaviors. Furthermore, mindsets can operate at the organizational level; for instance, whether organizations valued fixed or malleable theories of intelligence (implicit beliefs of intelligence) impacted how people presented themselves, which affected their behaviors (Murphy & Dweck, 2010).

goal orientation will be positively associated with gratitude. This is due to the idea that when individuals consider their experiences (whether positive or not) through a learning goal orientation, it should promote an experience of appreciation to an external source, even if any experienced benefits were not directly relevant to it. For instance, a spillover appreciation effect from thinking about what can be learned from a situation regardless of whether or not it turned out well, at least something was gained that was not intrinsic. Similarly, gratitude is generally considered an *externally* focused emotion, that is, the attribution of something positive to an external source (McCullough et al., 2001). Considering attribution theory (Weiner, 1986, 1995), people may attribute such learning to themselves (internal) and also attribute their success to others, for example, the help from a teacher. And as such, see themselves as beneficiaries of others (gratitude to an external source). Furthermore, those with learning goals focus less on task failure (Elliott & Dweck, 1988) and are more likely to experience positive emotions (Tyson et al., 2009). Thus, attribution theory and the valuing of distinct goals, which leads to different psychological outcomes (Grant & Dweck, 2003; Tamir, 2016), can account for the relationship of learning goals with gratitude.

We also hypothesized that performance goal orientations will be negatively correlated with gratitude. Focusing mainly on performance or rewards, which at times are not achieved, can leave individuals feeling unhappy or unfulfilled. Research has shown and discussed performance goal orientation's maladaptive emotional associations (anxiety, sadness; Dweck & Leggett, 1988; Tyson et al., 2009) which can be juxtaposed with the experience of gratitude. Additionally, performance goal orientation is also linked to entity theory in which one's abilities are fixed and due to one's own shortcomings (VandeWalle et al., 2001). This inward focus may inhibit considering assistance from others and appreciation for outcomes from external sources. Further, focusing on one's own performance can lead to less feelings of reciprocity which could inhibit gratitude as this requires reflection and appreciation over time (Davis et al., 2016; O'Connell et al., 2017).

Learning orientation and prosocial motivation

While there may be different explanations for why learning goal orientation would be related to gratitude, one of the possible mediating paths is through prosocial motivation. Prosocial motivation is conceptualized as the desire to benefit other people (Batson, 1987; Grant, 2008) and is considered a form of other-orientation (Grant & Wrzesniewski, 2010). We expected learning goal orientation to be

positively related to prosociality specifically, and that prosociality will mediate its effect on gratitude as experiencing gratitude requires consideration of others' assistance.

Learning goal orientation should be positively related to prosociality for various reasons including its association with help-giving, cooperation, reciprocity, and knowledge-sharing with others. Poortvliet and Darnon (2014) found a direct connection between goal orientation and helping others, with learning goals accounting for more help-giving. Beyond this work, interpersonal behaviors like cooperation and competition have been explored with regards to goal orientation (VandeWalle et al., 2019); the argument being the referent for personal assessment, either the self (learning goals) or others (performance goals). Those with learning goals had a personal growth focus, and as such, cooperation was perceived as mutually beneficial. Following this, Poortvliet and colleagues (2007) found that mastery/learning goals lead to a reciprocity orientation and, therefore, more cooperative, as opposed to exploitation. Poortvliet and Giebels (2012) also found more concern for others and greater cooperation in the mastery-approach condition. Lastly, Matzler and Mueller (2011) demonstrated that learning goal orientation was related to knowledge sharing with coworkers. These studies collectively demonstrate that goal orientation, specifically learning orientation, shapes people's views of others and their helping behavior towards them.

Prosocial motivation and gratitude

Prosocial motivation can explain the link between learning goal orientation and gratitude as both are related to the consideration of others. Previous research has highlighted that learning goal orientation is positively associated with communal motives, specifically, other-orientation and connecting with others (e.g., Chiaburu et al., 2007). In fact, affiliation and communal motives lie at the core of learning goal orientation (Chiaburu et al., 2007). Similarly, gratitude is associated with a connection to others (Emmons & McCullough, 2003) and has been linked to prosociality (Froh et al., 2008, 2009; Naito et al., 2005; Tsang, 2006). Gratitude increases prosocial behavior (e.g., Froh et al., 2008; Tsang, 2006), prosocial behavior is linked to anticipated gratitude (Grant & Wrzesniewski, 2010), and the link between gratitude and prosocial behavior has been explained to be due to a communal perspective- social worth, that is feeling valued by others (Grant & Gino, 2010). While some research has shown how gratitude can predict prosocial behavior through reciprocity mechanisms (e.g., Ma et al., 2017), we argue that the opposite link is also possible with prosocial behavior leading to more positive emotional experiences such as gratitude (Emmons & McCullough, 2004). In fact, research

has already documented reciprocal links between the two (Bartlett & DeSteno, 2006).

In the following studies, we sought to discern the relation of different types of goal orientations (learning vs. performance) with gratitude. We considered gratitude both as a trait (Study 1 and 3) and state (Study 2 and 4) attribute. Study 3 tested prosociality as a possible mediator between learning goals orientation and gratitude to explain the relation between the two. Finally, Study 4 was conducted to replicate Study 2's findings experimentally, considering prosociality and adding a control condition for better interpretation of the results. We report all manipulations, measures collected, and exclusions in our studies.

Study 1

In Study 1, we investigated the association between goal orientation and trait gratitude. We hypothesized that learning goal orientation would be positively correlated with gratitude, while performance goal orientation would be negatively correlated.

Method

We obtained ethical approval from the University College London Research Ethics Committee (#7105/001).² A G*Power (Faul et al., 2009) analysis (bivariate correlation, normal model, a priori, one-tailed) to reach a power of 0.80, with a medium effect size of 0.30 and an α of 0.05 required 67 participants. We recruited 102 U.S. participants³ through Amazon Mechanical Turk (MTurk) (67 males, 35 females; $M_{\text{age}} = 35.85$, $SD = 12.54$; 76.5% Caucasian, 11.8% African-American, 7.8% Asian, 2.9%

² For all studies.

³ In this study, as well as in studies 2 and 3, recruitment aimed at sample sizes beyond the minimum recommended per condition given anticipated attrition from participants who do not fully complete studies.

Table 1 Means and (Standard Deviations) for Measures in Studies 1 and 2

<i>Study 1</i>		
Learning goal orientation	Performance goal orientation	Trait gratitude
5.41 (1.11)	4.95 (1.26)	5.23 (1.22)
<i>Study 2</i>		
	Learning Goal Orientation	Performance Goal Orientation
Positive Affect	31.90 (10.19)	29.86 (9.06)
Negative Affect	16.85 (10.21)	17.80 (9.41)
Gratitude Score (State)	9.88 (1.70)	9.00 (2.13)

Hispanic, and 1.0% Other)⁴⁵ who provided informed consent⁶, and asked them to complete learning (Cronbach's $\alpha = 0.85$) and performance *prove* goal orientation (Cronbach's $\alpha = 0.81$) scales that assess goal orientation in work settings (Vandewalle, 1997) on a scale from 1 (Strongly Disagree) to 7 (Strongly Agree). The five-item learning goal orientation scale includes items such as, "I often look for opportunities to develop new skills and knowledge" and the four-item performance (prove) goal orientation scale includes items such as, "I'm concerned with showing that I can perform better than my coworkers." We opted for the prove dimension versus the avoid dimension as we were only interested in task approach rather than avoiding tasks as in Chen & Mathieu (2008). Prove performance goal orientation will thus be referred to as performance goal orientation throughout this paper, as approach goals are more developed in the literature. We then presented participants with the Gratitude Questionnaire-Six-Item Form (GQ-6; McCullough et al., 2002), which assesses individual differences in the likelihood of experiencing gratitude in daily life (Cronbach's $\alpha = 0.83$). The scale includes six items on a scale from 1 (Strongly Disagree) to 7 (Strongly Agree) with items such as, "I have so much in life to be thankful for" and "When I look at the world, I don't see much to be grateful for" (reverse-coded). This scale was followed by the Ten-Item Personality Inventory (TIPI; Gosling et al., 2003).⁷ Participants were compensated \$0.40 for participating.

Results and discussion

The data of this study and the following studies are on OSF (OSF <https://osf.io/h495v/>). Descriptive statistics for Study 1 can be found in Table 1.

Our results demonstrated that learning and performance goals were positively correlated ($r(100) = 0.54$, $p < .001$). Interestingly, learning goal orientation was positively associated with gratitude ($r(100) = 0.34$, $p < .001$), while performance goal orientation had no significant association with gratitude ($r(100) = -0.004$, $p = .97$). When entering both learning and performance orientation as predictors of gratitude, results showed that learning orientation was a significant positive predictor of gratitude ($\beta = 0.49$, $t = 4.49$, $p < .001$), whereas performance orientation was a negative predictor ($\beta = -0.27$, $t = 2.48$, $p = .02$; $R^2 = 0.17$).⁸ Overall,

⁴ One participant's age was not correctly provided.

⁵ Education demographics were collected for all studies and are available in the data on Open Science Framework (OSF).

⁶ Informed consent was also gathered from participants for studies 2, 3, and 4.

⁷ The relationship between gratitude and personality are not relevant to the current study but were included for exploratory purposes.

⁸ A Pearson's correlation coefficient with 102 participants would be sensitive to effects of $r = .24$ with 80% power ($\alpha = 0.05$, one-tailed).

these results highlighted that at a trait level, learning and performance orientations are linked differently to gratitude. This extends prior research showing that learning and performance orientations may be related to other individual differences and solely belief driven (Payne et al., 2007; Zweig & Webster, 2004). However, as this study was correlational, it cannot tell us whether those with different goal orientations experience more gratitude or if trait gratitude and goal orientation are simply associated. A stricter test of the hypotheses involves examining different orientations separately for effects on gratitude through an experiment.

Method

A G*Power (Faul et al., 2009) t-test (between two groups; a priori) for an effect size d of 0.75 with α of 0.05 and 80% power, required 46 participants. We randomly assigned 87 U.S. participants on MTurk (42 males, 45 females; $M_{\text{age}} = 34.37$, $SD = 11.59$; 74.7% Caucasian, 6.9% African-American, 5.7% Asian, 8.0% Hispanic, and 4.6% Other)⁹ to either a learning goals valued condition or a performance goals valued condition. Participants first completed a reading comprehension task and were asked to write a summary to check their comprehension of the main point. They had to spend 60 s on the page before being allowed to move forward in the study. We adapted the reading task from Vandewalle's (1997) work goal-orientation items with the intention of priming a value for learning or performance goal orientation (See Supplementary Materials).

Afterwards, participants completed the 20-item Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) to evaluate participants' levels of positive affect (e.g., excited, interested; Cronbach's $\alpha = 0.92$) and negative affect (e.g., upset, nervous; Cronbach's $\alpha = 0.97$) each 10-items. The administered format was "at the present moment." They then wrote about an event in which they felt grateful toward someone and rated their feelings of gratitude, "How grateful do you currently feel about the event?" on a scale from 1 (Grateful) to 11 (Extremely Grateful) (as in MacKenzie et al., 2014). Participants were compensated \$0.40 for participating.

Results and discussion

Descriptive statistics can be found in Table 1. The manipulation did not alter participants' positive ($t(85) = -0.96$, $p = .34$, $d = -0.21$) or negative affect ($t(85) = 0.44$, $p = .66$, $d = 0.10$), confirming that differences by condition were not due to affect. Our results showed that participants in the

⁹ We removed 17 participants who did not follow either the summary or gratefulness writing instructions.

learning goals valued condition were significantly more grateful ($M = 9.88$, $SD = 1.70$) than those in the performance goals valued condition ($M = 9.00$, $SD = 2.13$), $t(85) = 2.15$, $p = .034$, Cohen's $d = 0.47$, 95% CI for the mean difference [0.07, 1.70].¹⁰ While we did not include a "no goal" control condition, an additional study could help determine whether performance goals also boost gratitude. Thus, the results of Study 2 are in line with Study 1's correlational findings in which learning goals were positively related to gratitude, showing evidence for causality. Having established that goal orientation impacts experiences of gratitude, we conducted a third study to test a possible mechanism behind this relation.

Study 3

In the previous studies, we demonstrated that learning goal orientation and gratitude were associated, and that a learning goal orientation helps people experience more gratitude. However, mechanisms involved in this relation have not been investigated. We argued that a potential mechanism could be prosocial motivation.

Method

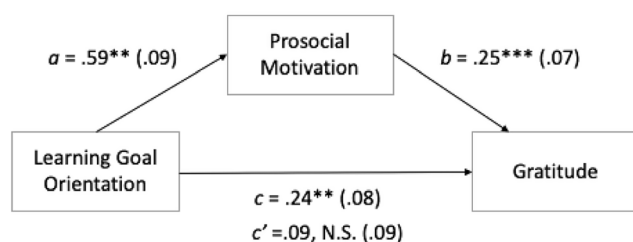
Sample size was determined using the requirements for Study 1 and the most frequently used sample size for mediational testing (sample size: 101–150) in Table 2 from Fritz and MacKinnon (2007). A G*Power (Faul et al., 2009) analysis (bivariate correlation normal model, a priori, one-tailed) to reach a power of 0.80, with a medium effect size of 0.34 and an α of 0.05 required 52 participants. We conducted this study on 157 U.S. MTurk participants (91 males, 66 females; $M_{\text{age}} = 36.45$, $SD = 11.11$; 73.9% Caucasian, 15.3% African-American, 3.2% Asian, 7.0% Hispanic, and 0.6% Other)¹¹ who completed learning and performance goal orientation (Cronbach's $\alpha = 0.85$ and 0.80) and trait gratitude (Cronbach's $\alpha = 0.83$) scales. These scales were followed by the four-item prosocial motivation (Grant, 2008; Grant & Wrzesniewski, 2010) measuring other-orientation, wanting to benefit others (Cronbach's $\alpha = 0.92$). Participants are asked, "Why are you motivated to do your work?" and items include, "Because I want to help others through my work" and "Because I care about benefitting others through

¹⁰ An independent samples t-test with 87 participants would be sensitive to effects of Cohen's $d = 0.55$ with 80% power ($\alpha = 0.05$, one-tailed). Despite evidence for a significant effect, the observed effect size was below 0.55. It may be the case that the large effect size that is typically reported in the learning/performance goal literature is tempered when considering a gratitude measure.

¹¹ 12 participants were excluded for failing the attention check question.

Table 2 Means and (Standard Deviations) for Measures in Studies 3 and 4

<i>Study 3</i>			
Learning goal orientation	Performance goal orientation	Trait gratitude	Prosocial motivation
5.07 (1.13)	4.55 (1.27)	5.20 (1.21)	4.85 (1.48)
<i>Study 4</i>			
	Learning goal orientation	Performance goal orientation	Control condition
Positive Affect	25.19 (8.54)	23.78 (7.05)	23.25 (7.81)
Negative Affect	14.41 (5.16)	14.51 (5.84)	13.71 (5.65)
Gratitude Score (State)	9.88 (1.53)	9.03 (2.06)	9.40 (2.04)
Prosocial Motivation	5.38 (1.42)	4.92 (1.36)	4.94 (1.47)

**Fig. 1** The Mediating Effect of Prosocial Motivation on in the Relation between Learning Goal Orientation and Gratitude

my work” measured on a 1 (Disagree Strongly) to 7 (Agree Strongly) scale.¹² Participants were compensated \$1.00 for participating.

Results and discussion

Participants scores in the variables in the study were medium-high (See Table 2). Learning goal orientation was significantly correlated with performance goal orientation ($r(157)=0.41, p<.001$), prosocial motivation ($r(157)=0.45, p<.001$), and gratitude ($r(157)=0.23, p<.004$). Performance goal orientation was only significantly correlated with prosocial motivation ($r(157)=0.24, p=.003$) but not with gratitude ($r(157)=-0.09, p=.28$). Finally, prosocial motivation was positively correlated with gratitude ($r(157)=0.35, p<.001$).¹³

We used PROCESS (Hayes, 2013) Model 4 to test our hypotheses (See Fig. 1). We tested for indirect and direct effects using 95% bias-corrected bootstrap confidence intervals (5,000 bootstrap samples). Our results demonstrated that there was a significant effect of learning goal orientation on gratitude without the mediator ($b=0.24, SE=0.08, p=.004$) and a significant effect of learning goal orientation

on prosocial motivation ($b=0.59, SE=0.09, p<.01$). There was also an effect of prosocial motivation on gratitude, controlling for learning orientation ($b=0.25, SE=0.07, p<.001$). Controlling for prosocial orientation, learning orientation was not a significant predictor of gratitude ($b=0.09, SE=0.09, p=.296$). Finally, there was a significant indirect effect of prosocial motivation, $b=0.15, SE=0.05, 95\% CI [0.054, 0.266]$. Thus, prosocial motivation mediated the relation between learning orientation and gratitude. It did not mediate the effect between performance orientation and gratitude (Supplementary Materials). Hence, these results suggest that prosocial motivation can explain the link between learning orientation and gratitude.¹⁴

Study 4

Study 4 was a preregistered study (https://aspredicted.org/8XS_JG7) conducted to consider prosociality in an experimental design and to add a control condition. We used statistics from Study 2 for this study’s power analysis. A G*Power (Faul et al., 2009) test for an effect size f of 0.235 with α of 0.05 and 80% power, required 180 participants.¹⁵ Again, we oversampled given likely attrition, recruiting 271 participants.

Method

We conducted this study on 257 U.S. Prolific participants (24% males, 76% females; $M_{age} = 33.35, SD = 13.23$; 66% Caucasian, 10% African-American, 10% Asian, 10% Hispanic, and 4% Other)¹⁶ who were randomly assigned to a learning goal orientation condition, a performance goal orientation condition, or a control condition. The learning goal orientation and performance goal orientation conditions were the same as in Study 2. The control condition asked that they read an essay of similar length but was not meant to prime any type of orientation (see Supplementary Materials). The participants then completed the PANAS and

¹⁴ However, cross-sectional mediation is limited and may not be able to determine the direction of effects.

¹⁵ To ensure the sample size was appropriate for mediation analyses, we used statistics from Study 3. The independent variable-mediator alpha path was 0.59, equal to Fritz and MacKinnon’s (2007, p. 236) large effect size (0.59). The mediator-dependent variable beta path was 0.25, close to Fritz and MacKinnon’s (2007, p. 236) medium effect size (0.26). According to Fritz and MacKinnon’s (2007) Table 3 (column “LM,” row “Bias-corrected boot-strap”), to detect a large size for the alpha path and a medium effect size for the beta path, we had to recruit 54 participants to have 80% power.

¹⁶ Three participants were excluded due to not following the summary or gratefulness writing instructions. Eleven participants were removed for answering “Yes” to “Have you participated in a study that asked these same questions before?”

¹² Four additional items of the scale measure intrinsic motivation but these were not of interest for the present study.

¹³ A Pearson’s correlation coefficient with 157 participants would be sensitive to effects of $r=.20$ with 80% power ($\alpha=0.05$, one-tailed).

gratitude measure as in Study 2. This was followed by the prosocial motivation measure (Grant, 2008; Grant & Wrzesniewski, 2010) as in Study 3. Finally, participants were asked a suspicion check question. Participants were compensated \$0.70 for participating.

Results and discussion

Descriptive statistics for Study 4 can be found in Table 2. The results demonstrated a difference in gratitude between the learning goal orientation condition and the performance goal orientation condition replicating the findings of Study 2, ($F(2, 256)=4.19, p=.016, \eta^2_p=0.03$).¹⁷ Specifically, participants in the learning goal orientation reported higher levels of gratitude than those in the performance goal orientation ($d=0.83, SE=0.29, p=.01$). The control condition was not significantly different from the learning ($d=-0.53, SE=0.29, p=.21$) or the performance orientation ($d=0.30, SE=0.29, p=.89$) conditions. Conditions did not differ in affect, PA, ($F(2, 256)=1.40, p=.25, \eta^2=0.01$); NA, ($F(2, 256)=0.53, p=.59, \eta^2=0.004$) or prosocial motivation ($F(2, 256)=2.82, p=.06, \eta^2=0.02$). The PROCESS categorical mediation analysis (Model 4) demonstrated a significant effect of prosocial motivation as partial mediator. Again, we used 95% bias-corrected bootstrap confidence intervals (5,000 bootstrap samples). Given that the condition was categorical with three levels, we looked at learning versus performance and learning versus control conditions. When considering the effect of condition on gratitude, we found a significant difference between learning and performance, $b=-0.85, t(254) = -2.93, p < .01, 95\% \text{ CI } [-1.42, -0.28]$ but no difference between learning and control, $b=-0.48, t(254) = -2.01, p=.10, 95\% \text{ CI } [-1.05, 0.09]$. There was a significant difference in prosociality for learning and performance ($b=-0.45, t(254) = -2.10, p=.04, 95\% \text{ CI } [-0.88, -0.03]$) and a significant difference in prosociality for learning and control ($b=-0.44, t(254) = -2.01, p=.05, 95\% \text{ CI } [-0.86, -0.01]$). There was a significant effect of prosociality on gratitude, $b=0.25, t(253)=3.03, p=.003, 95\% \text{ CI } [0.09, 0.41]$. Finally, there was a significant difference in prosociality for learning and performance, $b=-0.73, t(253) = -2.56, p=.01, 95\% \text{ CI } [-1.30, -0.17]$ but no difference in prosociality for learning and control $b=-0.37, t(253) = -1.29, p=.95, 95\% \text{ CI } [-0.94, 0.19]$. The indirect effect was significant for learning and performance, indirect = $-0.11, SE=0.07, 95\% \text{ CI } [-0.29, -0.01]$ but not learning versus control, $-0.11, SE=0.07, 95\% \text{ CI } [-0.27, 0.003]$. Thus, mediation occurred only for the learning versus performance comparison. This

increases our confidence in studies 2 and 3. No participants guessed the purpose of the study. Additionally, we conducted categorical mediation, and, therefore, future research can measure learning and performance orientation on a continuum as in Study 3.

Discussion

Overall, our results demonstrate that goal orientation indeed affects the experience of gratitude. Specifically, learning goals elicit more gratitude than performance goals, and prosocial motivation mediated the link between learning goals and gratitude. Study 1 confirmed the hypothesis that learning goals were positively correlated with the trait of gratitude, whereas performance goals negatively predicted gratitude. Study 2 experimentally demonstrated that when learning goals were socially valued compared to performance goals, people experienced more gratitude. Study 3 found that prosocial motivation cross-sectionally mediated the relation between learning goal orientation and gratitude, extending work on gratitude and prosocial motivation (Grant & Gino, 2010; Grant & Wrzesniewski, 2010) to goal orientation. Finally, Study 4 confirmed the findings of Study 2 and 3 in a preregistered study. The studies together contribute to the existing work on gratitude by extending its study to individual difference precursors beyond personality and contextual factors (Armenta et al., 2017; Wood et al., 2008) as well as other motivational theories (Mafael, 2019; Mathews & Shook 2013). The findings support our hypothesis that when people consider their experiences (whether positive or not) through a learning goal orientation, it can promote a greater experience of gratitude, possibly from thinking about appreciation of something learned from a situation regardless of whether or not it turned out well (McCullough et al., 2001).

We hypothesized that prosociality could explain the link between learning goal orientation and gratitude, since learning goal orientation has been linked to higher collaboration and other-orientated behaviors (Matzler & Mueller, 2011; Poortvliet & Darnon, 2014; Poortvliet et al., 2007; Poortvliet & Giebels, 2012). This was confirmed in Study 3 in a correlational design and Study 4 through an experiment and categorical mediation. Further, as prosocial motivation could explain the relation between learning orientation and gratitude, it may be the case that encouraging people with learning orientations to consider the needs of others can also impact experienced gratitude. With this in mind, it would be interesting to test altruism as another possible mediator given that altruistic motivation has been considered to promote selfless prosocial behavior (Batson, 2011).

Promoting gratitude in organizations is known to be beneficial. Some reasons include desirable outcomes such as

¹⁷ A one-way between-subjects ANOVA with 257 participants across 3 groups would be sensitive to effects of $f=0.19$ with 80% power ($\alpha=0.05$). For our results, converting $\eta^2_p=0.03$ to an f value would be $f=0.64$, therefore exceeding the minimum threshold.

organizational resilience, corporate social responsibility, well-being, communal exchange, and organisational citizenship behavior (Fehr et al., 2017; Spence et al., 2014). Our findings suggest that gratitude can be influenced through other means beyond gratitude interventions (Kaplan et al., 2014; Wood et al., 2010). Managers can promote a learning goal orientation by emphasizing the importance of developing competence in tasks, providing a psychologically safe environment for challenging work, and focusing on improving skills and gaining knowledge. Organizations that foster primarily performance goal orientation at the cost of learning goal orientation may be at a disadvantage, particularly when doing so decreases experiencing gratitude that may have longer-term benefits.

These studies have some limitations, and we present the findings as a starting proof of concept on which to build further investigations. Future studies can incorporate a wider range of methods, such as an ecological momentary assessment (EMA) of gratitude in order to assess boundaries of the effect in day-to-day situations. It would be interesting to investigate if learning goal orientation and gratitude predict one another (i.e., cross-lagged effects) and are reinforcing in the longer term. Another question may examine the circumstances under which a learning orientation no longer provides benefits in gratitude, or instances when a performance orientation may also prompt some benefit. Researchers can investigate effects for highly motivated individuals (high on both goal orientations) or low goal-oriented individuals (low on both), or different combinations of the two. Additionally, beyond personal experiences of gratefulness, it may also be important to consider varied work and academic environments. For example, work climate can moderate effects; for instance, learning goals were positively related to self-efficacy about learning in an *updating organizational climate* which is one that features innovation and up-to-date skill-sets (Potosky & Ramakrishna, 2002). It may be the case that if there is not a good fit of one's goal orientation with their work climate, the same links would not be found. While we did not specifically consider only work-related gratitude, this could be another avenue for future research, in addition to work on other positive emotions such as happiness, fulfilment, and pride. We expect that learning goals in other contexts, such as in academic endeavors, would similarly yield effects on experienced gratitude. Future work can also extend this study to real workplace settings, thus bringing a more applied angle to the work. Lastly, while people typically benefit from experiencing gratitude, there could be negative consequences to gratitude expression in certain workplace contexts, such as during negotiations (Yip et al., 2018). Thus, future research can investigate private versus public experiences and expressions of gratitude.

Overall, our findings suggest that promoting a learning goal orientation is beneficial compared to performance goal orientations with regards to gratitude levels. This is something that should be considered alongside gratitude interventions and individuals' well-being, and their downstream consequences in different settings.

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Declarations

Ethics approval The studies were approved by the appropriate institutional ethics committee (UCL Research Ethics Committee) and we certify that the studies were performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Competing interests The authors have no relevant financial or non-financial interests to disclose.

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