

# Reminders Undermine Impressions of Genuine Gratitude

Jiabi Wang, Shereen J. Chaudhry, and Alex Koch  
The University of Chicago Booth School of Business

While reminders can help by encouraging prosocial behaviors, we propose that they can also hurt. Across 10 studies, most of which focus on reminders to express gratitude, we find that reminders interfere with impressions of genuine prosociality. Whether people are reminded subtly (Studies 1a and 6–8) or blatantly (Studies 2–5) to express gratitude, the reminder is perceived to put social pressure on the potential thanker, making reminded thankers seem less genuine and less likable than spontaneous thankers. This is true from the perspective of both a third-party observer (Studies 1a and 2–7) and the receiver of thanks (Study 4), regardless of whether the judgments are about hypothetical (Studies 1a, 2–3, and 6–7) or real behavior (Studies 4–5). We find that this phenomenon can have material consequences: Receivers of gratitude expressions allocated a larger proportion of bonus money to a spontaneous thanker compared to a reminded thanker (Study 5). We also find that to overcome the decrement in their perceived genuineness, reminded thankers must engage in costly signaling by thanking more elaborately (Study 7), and reminded thankers spontaneously do this (Study 8). Overall, while reminding people to engage in prosocial actions may encourage laudable behavior (Study 6), our findings suggest that doing so may also undermine the actor's perceived genuineness, leading to material consequences and raising the bar for what is required to signal sincerity.

**Keywords:** communication, prosocial behavior, social norms, gratitude, genuineness

**Supplemental materials:** <https://doi.org/10.1037/pspi0000442.supp>

Imagine that, at your workplace, you volunteer many hours of unpaid work to make recommendations to management for how to improve company culture. You let your colleagues know the recommendations you have made to management. After an hour, your colleague Florence replies—all to the group email writing, “Thank you so much for your work on this!” A few minutes after Florence’s email, Soren writes to the group “Thanks a lot for your work on this!” Which of those people is more genuinely grateful for your work? While Florence’s expression seems spontaneous, it is unclear whether Soren felt genuinely grateful or thanked because he felt pressured to conform to a new norm on the email thread set by Florence. And her clearer genuineness likely conveys greater

warmth: You might be more likely to approach her than Soren at the next company gathering.


Florence’s email serves as a *reminder* for others to engage in the prosocial act of thanking, in the same way that social media reminds us to tell our friends happy birthday and parents remind their children to apologize. However, the kind note on your birthday does not feel as genuine as it would on a regular day, and the prompted apology does not reassure you the child will change his/her behavior as much as a spontaneous apology might. The present research establishes that while these types of reminders are ubiquitous and can sometimes be helpful to enhance norm compliance, they have a dark side. Reminders pressure people, making their true motives ambiguous. Thus, reminders undermine impressions of a target’s genuineness, and, as we find, this can have downstream effects on the target’s likability as well as behavior toward the target. Furthermore, reminders create a burden for genuine actors, who then need to exert more effort to convey genuineness.

## Reminders to Do Good Increase the Perceived Social Pressure to Do Good

People know that complying with social norms is not only an important way to project agreeableness and trustworthiness but is also critical for being included in desired social networks as well as for rising in the ranks of institutions and organizations (Blanton & Christie, 2003; Cialdini & Goldstein, 2004; Ellemers, 2018; Shaw & Olson, 2013). The fact that reputational and material rewards are often contingent on compliance with social norms means that norms represent a pervasive source of social pressure to behave in a particular way.

But how do people become aware of social norms? A review of existing evidence finds that people learn about norms through inputs from the environment (Tankard & Paluck, 2016)—what we call

Jiabi Wang  <https://orcid.org/0000-0003-4503-5023>

Shereen J. Chaudhry  <https://orcid.org/0000-0002-2248-8524>

Alex Koch  <https://orcid.org/0000-0002-6267-8066>

The authors thank members of the Roman Family Center for Decision Research for feedback throughout the development of this project. This work is supported by the Neubauer Family Fellowship Fund at the University of Chicago Booth School of Business awarded to Shereen J. Chaudhry and by the Asness Junior Faculty Fellowship at the University of Chicago Booth School of Business awarded to Alex Koch.

Jiabi Wang played a lead role in formal analysis and writing—original draft, and an equal role in conceptualization, methodology and writing—review and editing. Shereen J. Chaudhry played a supporting role in formal analysis and an equal role in conceptualization, methodology and writing—review and editing. Alex Koch played a supporting role in formal analysis and an equal role in conceptualization, methodology and writing—review and editing.

Correspondence concerning this article should be addressed to Jiabi Wang, The University of Chicago Booth School of Business, 5807 South Woodlawn Avenue, Chicago, IL 60637, United States. Email: [jiabi.wang@chicagobooth.edu](mailto:jiabi.wang@chicagobooth.edu)

“reminders.” Reminders come in many different forms. Some can be blatant and direct: Parents use reminder phrases like “Say thank you” to teach their children the norm of expressing gratitude. Reminders can also be more subtle or indirect: Observing a neighbor clean up after their dog teaches the norm to not leave a dog’s mess on the ground (Hareli et al., 2013; Reno et al., 1993). Reminders also literally remind people about norms that are easy to forget. Libraries post signs with commands like “Quiet please” so that patrons remember that this is a place they should keep silent or speak in a whisper. And indeed, for people to behave consistent with a given norm, they not only need to know the norm but also need to pay attention to it (Cialdini et al., 1990; Jonas et al., 2008; Reno et al., 1993). For example, reminding people of their religious values—and thus bringing virtuous norms to front of mind—reduces their hostility toward nonbelievers (Schumann et al., 2014).

In some cases, even if people are aware of a norm, they may disagree with it (Bicchieri, 1990) or prioritize another norm (Steinfeldt et al., 2011). We reason that reminders may also increase compliance in these cases through increasing the cost of not complying with the norm. For example, jaywalking gets noticed more by observers in the presence of a flashing “Don’t walk” sign. Moreover, public reminders create common knowledge about what the norm is, ensuring that everyone knows the norm (De Freitas et al., 2019), and this makes unawareness and misperception unacceptable excuses for violating the norm. Violating the norm despite a public reminder signals disagreement with the norm or deprioritization—that is, an intentional violation. People’s punishment for intentional norm violations is harsher and may include both legal and social sanctions such as unfavorable social perceptions (Wanders et al., 2021), gossip (Beersma & van Kleef, 2012), and ostracism (Ouwerkerk et al., 2005). Thus, the threat of (harsher) punishment—another form of social pressure—is an additional reason for increased norm compliance following a reminder.

In sum, reminders to do good teach people about the operant social norms and also make salient that norm compliance reaps social rewards and/or avoids social punishment. As a result, reminders put social pressure on an actor, and observers are aware of this. While the social pressure created by a reminder may increase norm compliance, it can also have a negative downstream impact on the perception of the norm-compliant behavior, as discussed next.

### Reminders to Do Good Undermine Impressions of Genuine Prosociality

Prosocial behavior such as recycling or offering condolences can be driven by genuinely prosocial motives such as altruism and sympathy (Eisenberg et al., 1989). People also behave in prosocial ways due to selfish motives, including building relationships and affiliations with others (Paulus, 2014; Visserman et al., 2018; Warneken, 2015), obtaining reputational and material rewards from others (Berman & Silver, 2022; Goette & Stutzer, 2020; Griskevicius et al., 2010; Hardy & Van Vugt, 2006; Kafashan et al., 2014; Luchtenberg et al., 2015), and avoiding punishment by others. The presence of selfish motivations for prosocial behavior creates ambiguity about the genuineness of the actor’s prosociality, and observers may tend to resolve this ambiguity by assuming selfishness (Van Lange et al., 2002). Indeed, if a good deed leads to a material reward for the actor, observers lower their evaluation of the actor’s moral character (Berman & Silver, 2022; Lin-Healy & Small, 2013).

There are at least two reasons observers tend to resolve motive ambiguity by assuming that actors have selfishly succumbed to social pressure. First, negativity is more diverse than positivity (Alves et al., 2017; Koch et al., 2016; Unkelbach & Speckmann, 2021). Here, this means that there are more selfish explanations (i.e., earning different rewards and averting different punishments) than prosocial ones such that observers are more likely to bring selfish explanations to mind. Given a choice set with more selfish than prosocial candidate explanations, concluding selfishness by deliberate thought or random guessing becomes more likely. The second possibility is that “bad is stronger than good” (Baumeister et al., 2001), that is, negativity (vs. positivity) has a stronger affective-motivational impact. Thus, even in a choice set that includes an equal number of selfish and prosocial explanations, people should process selfish explanations more deeply and weigh them more strongly when forming a conclusion. These explanations are substantiated by the empirical observation that people generally tend to assume the worst motives in others (Van Lange et al., 2002; Walmsley & O’Madagain, 2020).

We propose that reminders to do good mark a behavior as normative, and thereby make salient a selfish explanation for the behavior—that is, yielding to social pressure to behave according to norms. This creates ambiguity about the genuineness of the actor’s normative prosocial behavior, which is resolved by discounting the actor’s genuineness. Indeed, a person’s prosocial behavior is seen as less genuine when that behavior conforms to a norm, compared to when it cannot be construed as norm-compliant (Kraft-Todd & Rand, 2019; Silver et al., 2021). Thus, we propose a mediation model: Reminders to do good (our independent variable) lower the perceived genuineness of an actor’s prosocial behavior (our dependent variable) as a function of increasing the perceived social pressure under which the actor is operating (our mediator).

### When Perceived Genuineness Matters

For some prosocial behaviors, reminder-increased motive ambiguity is not a concern because norm compliance is all that matters, not a person’s motives. When a sign reminds residents to “Please sort your garbage,” coresidents care that residents sort their garbage. They presumably care less about the residents genuinely wanting to reduce waste and protect the environment. Similarly, when a university sends alumni emails reminding them about donation opportunities, it arguably cares more about receiving donations than about the alumni genuinely wanting to further the school’s mission.

In contrast, detecting genuineness behind a prosocial act is important when the goal is not compliance but rather assessing intentions and building relationships, such as is the case with expressing gratitude, apology, condolences, or congratulations. In these cases, behavior functions to signal something about the person’s underlying feelings, character, or intentions, and the success of such impression-oriented behaviors depends centrally on a perception of sincerity (Berman et al., 2015; Leong et al., 2020; Ohtsubo & Watanabe, 2009; Sezer et al., 2018) or, in some cases, whether the behavior was focused on the self or others (Visserman et al., 2018). When people are successful at signaling genuine prosociality, it increases others’ trust toward them (Barclay, 2004), empathy for them (Zheng et al., 2016), gratitude toward them (Visserman et al., 2018), and cooperation with them (Koch et al., 2020; Sylwester & Roberts, 2010). Accordingly, genuineness has been shown to be critical to building social relationships, including teacher–student, nurse–

patient, and firm–community relations (Kent & Taylor, 2002; McCabe, 2004; Sheridan & Young, 2017). For these reasons, we anticipate that perceiving a person to be genuinely prosocial also enhances global evaluations like likability.

Thus, when a behavior aims to manage a social impression or build a relationship, reminder-increased motive ambiguity should pose a challenge. For example, maybe you feel less certain about forgiving your friend if their apology comes on the tails of their spouse reminding them, “You need to apologize for that,” than if it comes about spontaneously. And in the example from the introduction, you might be more interested in working with Florence, the first thank-er, on a future work project than others whose gratitude, and thus likability, seem more in question. The presence of reminders in these situations obscures the actor’s genuineness, making it difficult to assess intentions and make relationship-relevant decisions. Furthermore, if the ambiguity is resolved by attributing selfish motives, reminders may reduce perceived genuineness as well as global evaluations (likability) of the actor.

Despite the possibility that reminders interfere with social impressions and relationships, people remind their romantic partners about an approaching anniversary to elicit a kind note and maybe a gift. For Mother’s Day, banners in stores remind people to express gratitude to their mothers. Given the abundance of reminders in important contexts where people manage social impressions or relationships, it is worthwhile to paint a balanced and complete picture of the consequences of reminders. Though reminders can have benefits by promoting norm compliance, they also interfere with impressions of genuine prosociality. This poses a challenge to making positive social impressions and building relationships.

### The Present Research: Gratitude Expression as a Case Study

According to the mediation model that we propose in this article, reminders of a norm should increase the perceived social pressure to comply with the norm and thereby interfere with impressions of genuineness and likability, regardless of the type of prosociality that the norm promotes. For brevity and simplicity, the present research briefly explores different types of prosociality but focuses on gratitude expression as promoted by the norm to thank others for their favors. Thanking is a prosocial behavior that has desirable consequences, including increasing positive emotions, boosting the subjective well-being of both the thank-er and thank-ee (Sheldon & Yu, 2022; Singh, 2017), and enhancing relationships (Algoe & Zhaoyang, 2016; Algoe et al., 2020; Lambert & Fincham, 2011). Because the purpose of thanking is conveying genuine gratitude, which is central to positive relationship consequences, we expect that reminders to thank may interfere with these desirable consequences of thanking.

Study 1a shows that reminders to thank increase the perceived social pressure that is acting on the thank-er, causing their gratitude expression to seem less genuine and the thank-er less likable. Studies 1b–1d generalize this pattern of results to compliments, expressions of condolence, and apologies, respectively. Study 2 and beyond refocus on thanking. Study 2 generalizes the pattern to a different reminder manipulation and to a between-subjects manipulation that minimizes demand characteristics. Study 3 generalizes the pattern to a case when the reminder comes in the form of an inanimate sign (rather than another person’s utterance). Study 4 demonstrates the effect in real behavior with an incentivized interaction and also

shows that the pattern is present for both third-party observers judging thank-ers as well as the favor-doers judging the people who thank them. Study 5 provides evidence of consequences to the pattern: Reminder-based hits to the perceived genuineness of gratitude expressions can trickle down to behavioral discrimination of reminded thank-ers (i.e., splitting a bonus). Study 6 paints a broader and more balanced picture of the social-evaluative consequences of reminders by showing that observers like reminded thank-ers better than people who fail to express gratitude, when doing so is normative. Study 7 proposes a solution to mitigate the impact of reminders: Increasing the elaborateness of a gratitude expression largely compensates for a reminder-based hit to perceived genuineness. Study 8 shows that reminded thank-ers spontaneously use this strategy by increasing the length, and thereby elaborateness, of their thank-you note. All studies were institutional review board-approved and preregistered at AsPredicted.org. We report all conditions and measures. No study collected more data after analyzing it. All materials, data, code, and results are available online at ([https://osf.io/jrg9k/?view\\_only=0690ac67e68d4850b314d5f9c78763d0](https://osf.io/jrg9k/?view_only=0690ac67e68d4850b314d5f9c78763d0)).

Through simulations (Green & MacLeod, 2016), in each study, we computed the size of the effect of being reminded on leaving a genuine impression that we could detect with a chance of at least  $1 - \beta = .80$ , given how many people participated in the study and setting  $\alpha = .05$ . According to this effect-size sensitivity analysis (Giner-Sorolla et al., 2023), we have a sample size large enough to detect a smaller effect than we detected in all of the 11 studies. Thus, our statistical power to detect the effect of our main interest was likely sufficiently high. The online supplement reports details of the effect-size sensitivity analyses separately for each study, and it also provides a table that succinctly summarizes the analyses for each study.

We sampled U.S. residents from the crowdsourcing platform Prolific Academic whose participation in at least 100 previous studies had been approved at a rate of at least 99%. Prolific workers’ representativeness of the U.S. population is decent (Douglas et al., 2023; Peer et al., 2017; U.S. Census Bureau, n.d.).

### Study 1a: Thanking After Someone Else Did

We tested whether a salient reminder to express gratitude can undermine the perceived genuineness of subsequent expressions of gratitude, and whether impressions of social pressure mediate the impact of the reminder on perceived genuineness. The design and hypotheses were preregistered at [https://aspredicted.org/blind.php?x=83M\\_YQL](https://aspredicted.org/blind.php?x=83M_YQL).

### Method

#### Participants

We collected data from 319 participants through Prolific. As preregistered, we excluded 16 participants who did not pass an attention check, two participants who did not pass a comprehension check, and two participants who recommended dropping their data at the end of the survey, leaving 299 participants ( $M_{\text{age}} = 37.29$ ,  $SD = 13.95$ ; 50% men).

#### Procedure

We examined a context in which multiple people thank the same person publicly and sequentially. In such a series of gratitude

expressions, the first expression acts as a reminder to others that they should follow suit, increasing the social pressure to do so. This introduces ambiguity as to whether later thankers genuinely felt gratitude or were responding to social pressure. Participants read a scenario in which people on a team at work exchanged group emails. Specifically, participants read that “Alex, Robin, Taylor, and Dylan work at the same company. Alex volunteered to complete a report, which took him five hours, and thus saved his colleagues five hours of work.” Participants then read a time-stamped group email conversation between Alex and his colleagues. The first message was from Alex: “Hi all, Completed the report today and sent it to the board of directors just now.—Alex Miller.” The three other team members then responded publicly by thanking in sequence. After 3 hr, Robin replied-all: “Thank you so much, Alex. I really appreciate your work.” Four minutes later, Taylor replied-all: “Thanks a lot, Alex! Couldn’t have done it without you.” Four more minutes later, Dylan replied-all: “Is there a better colleague out there? I think not. Thank you, Alex!” Alex’s gender was counterbalanced between subjects. Who replied first, second, and third, and which of the three messages they replied with, was randomly determined as well.

After reading the scenario, participants provided ratings of genuineness, social pressure, and likability. Participants rated the thankers in the order in which they had thanked, to reduce confusion about who had thanked when. All questions were responded to using 7-point scales with radio buttons from  $-3 = \textit{definitely disagree}$  to  $3 = \textit{definitely agree}$ . Participants rated each thanker’s genuineness by responding to three items: “This person’s expression of gratitude was genuine,” “This person’s expression of gratitude was sincere,” and “This person meant it when he/she expressed his/her gratitude” ( $\alpha = .97$ ). Participants rated the perceived social pressure on each thanker by responding to the following three items: “This person felt social pressure to thank Alex,” “This person felt obligated to thank Alex,” and “This person felt he/she had to thank Alex” ( $\alpha = .90$ ). Participants rated each thanker’s likability with the following three items: “This person is a likable person,” “This person is a good person,” and “This person is a positive person” ( $\alpha = .91$ ).

## Results

As preregistered, we created composite scores for each of our measures by taking the average of the three corresponding items. For our main analysis, we fit a linear mixed model to predict participants’ impressions of the thankers’ genuineness from the order in which they had expressed their gratitude (Table 1, Model 1a.1). Order was coded as a continuous variable, and we included random intercepts for participants to account for multiple ratings per participant. As predicted, there was a negative relationship between order and genuineness, meaning that participants perceived later thankers as less genuine. In a second linear mixed model, the dependent variable was participants’ impressions of the social pressure to thank. As predicted, participants perceived later thankers as being under greater social pressure to thank (Table 1, Model 1a.2).

Next, we tested whether impressions of social pressure mediated the effect of expression order on impressions of genuineness. We used the approach by Yzerbyt and colleagues (Yzerbyt et al., 2018), which includes two steps and is superior to single-index mediation testing because it better controls the risk of false-positive inferences. We averaged impressions of the second and third thankers’ genuineness, and we averaged impressions of the social pressure on

**Table 1**

*Study 1a: Effect of Expression Order (i.e., Being Reminded) on Perceived Genuineness, Social Pressure, and Likability*

Model	IV	DV	$\beta$	SE	<i>t</i>	<i>p</i>
Confirmatory analysis results						
1a.1	Order	Genuineness	−0.13	0.04	−5.21	<.001
1a.2	Order	Social Pressure	0.25	0.04	13.18	<.001
Exploratory analysis results						
1a.3	Order	Likability	−0.10	0.03	−4.46	<.001

*Note.* IV and DV = independent and dependent variable;  $\beta$  = estimate (standardized); SE = standard error.

them to thank. We took these averages because the software that Yzerbyt and colleagues provided does not yet allow for specifying more than two levels for each variable in the mediation model. Confirming our previous analysis, order of gratitude expression was positively related to perceived social pressure to thank (significant a path). As expected, perceived social pressure was negatively related to genuineness (significant b path). Monte Carlo resampling (5,000 iterations) estimated the 95% confidence interval (CI) of the indirect effect, which was negative and did not include zero, 95% CI [−0.39, −0.19]. This pattern of results is consistent with the hypothesis that impressions of higher social pressure to thank partly explain why participants perceived later thankers as less genuine. The online supplement reports all mediation results, including point estimates for all pathways.

As an exploratory analysis, we fit a linear mixed model (similar to those above) to predict participants’ impressions of the thankers’ likability from the order in which they had thanked (Table 1, Model 1a.3). Order was negatively related to likability, demonstrating that participants perceived later thankers as less likable. We tested an indirect effect from expression order to perceived social pressure (greater) to perceived genuineness (lower) to perceived likability (lower). Fitting a serial mediation model (Hayes, 2018, Model 6) with bootstrapped estimates using 10,000 resamples confirmed this negative indirect effect, 95% CI [−0.10, −0.04]. The online supplement reports all serial mediation results, including point estimates for all pathways.

## Discussion

Study 1a confirms that one type of reminder to express gratitude—an early public thank you in a series of public gratitude expressions—lowers the perceived genuineness of subsequent expressions of gratitude. We also find evidence that this is at least partly because people believe reminded thankers face more social pressure to express gratitude. In addition, participants saw the reminded thankers as less likable.

### Studies 1b–1d: Complimenting, Giving Condolences, and Apologizing After Someone Else Did

Our theory is not limited to impressions of people who express gratitude. If someone publicly expresses a compliment, condolence, or an apology, the expression reminds, and thereby pressures, other people to follow suit. Thus, if they do, their subsequent expression of the compliment, condolence, or apology should come across as less

genuine, and they should seem less likable, respectively. Studies 1b–1d leveraged Study 1a’s paradigm (a sequence of group emails) to generalize the detrimental effect of reminders from subsequent expressions of gratitude (Study 1a) to subsequent expressions of compliments (Study 1b), condolences (Study 1c), and apologies (Study 1d). We report Studies 1b–1d together for brevity and conciseness. The designs and hypotheses were preregistered at [https://aspredicted.org/blind.php?x=HXW\\_3JD](https://aspredicted.org/blind.php?x=HXW_3JD) (Study 1b), [https://aspredicted.org/blind.php?x=VW6\\_WRZ](https://aspredicted.org/blind.php?x=VW6_WRZ) (Study 1c), and [https://aspredicted.org/blind.php?x=VCJ\\_ZFF](https://aspredicted.org/blind.php?x=VCJ_ZFF) (Study 1d).

## Method

### Participants

In Studies 1b, 1c, and 1d, we collected data from 407, 413, and 410 participants through Prolific, respectively. As preregistered, we excluded seven, 15, and 10 participants, who did not pass an attention check, 29, two, and five participants, who did not pass a comprehension check, and zero, one, and five participants, who recommended dropping their data at the end of the survey, leaving 371 participants ( $M_{\text{age}} = 41.49$ ,  $SD = 13.10$ ; 53% men), 395 participants ( $M_{\text{age}} = 40.68$ ,  $SD = 13.52$ ; 51% men), and 390 participants ( $M_{\text{age}} = 39.71$ ,  $SD = 13.47$ ; 49% men) in Studies 1b, 1c, and 1d, respectively.

### Procedure

The studies proceeded in the same way as Study 1a with two exceptions. First, there were only three characters in the scenario—one target and two expressers (instead of three expressers). Second, the expressions were not gratitude; they were compliments in Study 1b, condolences in Study 1c, and apologies in Study 1d. Participants read a scenario in which work colleagues Alex, Robin, and Taylor exchanged group emails.

In Study 1b, the first message by Alex was, “Hi all, As requested, I’m sending you copies of the slides from my presentation today.” After 3 hr, Robin replied: “Impressive work, Alex! Your dedication

to this project really showed through your enthusiastic presentation.” Four minutes later, Taylor replied: “You did a great job, Alex! Your presentation was so engaging. Everyone got a sense of how much the project means to you.” In Study 1c, the first message by Alex was,

Hi all, Sadly, the promotion that I was up for was given to someone else. Therefore, I wanted to let you know that I will be continuing in my current role. It’s a disappointment, but I’m keeping my head up.

After 3 hr, Robin replied: “I’m sorry to hear that, Alex. I want to say how proud we all are of you for being considered nominated in the first place.” Four minutes later, Taylor replied: “I am sad to hear this news. We all think that being considered for the promotion was already a great achievement.” In Study 1d, the first message by Alex was, “Hi all, Completed the report yesterday and sent it to the board of directors just now.” After 3 hr, Robin replied: “Sorry, Alex. I could not help with the report because of another pressing task yesterday.” Four minutes later, Taylor replied: “Apologies. Yesterday, I was unable to assist with the report due to a more urgent deadline.” Alex’s gender, who replied first, and which of the two messages they replied with were randomly determined in all three studies. After reading the scenario, participants provided ratings of statement genuineness ( $\alpha = .97, .98$ , and  $.98$ ), social pressure acting on the expresser ( $\alpha = .96, .93$ , and  $.86$ ), and expresser likability ( $\alpha = .91, .93$ , and  $.92$ ) in the order in which Robin and Taylor had expressed their compliments, condolences, and apologies in Studies 1b, 1c, and 1d, respectively.

## Results

As preregistered, we fit linear mixed models predicting with random intercepts for participants. For all three studies, we predicted perceived genuineness and perceived social pressure from the order in which Robin and Taylor made their prosocial expression ( $-0.5 =$  first mover,  $0.5 =$  second mover). We did this separately for compliments (Table 2, Models 1b.1 and 1b.2), condolences (Table 2, Models 1c.1 and 1c.2), and apologies (Table 2, Models 1d.1 and 1d.2). As predicted, for all three types of expressions, participants perceived

**Table 2**  
*Studies 1b–d: Effect of Expression Order (i.e., Being Reminded) on Perceived Genuineness, Social Pressure, and Likability*

Model	IV	DV	$\beta$	$SE$	$t$	$p$
Confirmatory analysis results (compliments)						
1b.1	Order (Second)	Genuineness	−0.24	0.04	−6.47	<.001
1b.2	Order (Second)	Social Pressure	0.40	0.06	11.17	<.001
Exploratory analysis results (compliments)						
1b.3	Order (Second)	Likability	−0.17	0.03	−6.05	<.001
Confirmatory analysis results (condolences)						
1c.1	Order (Second)	Genuineness	−0.15	0.04	−3.89	<.001
1c.2	Order (Second)	Social Pressure	0.24	0.06	7.16	<.001
Exploratory analysis results (condolences)						
1c.3	Order (Second)	Likability	−0.14	0.04	−3.90	<.001
Confirmatory analysis results (apologies)						
1d.1	Order (Second)	Genuineness	−0.15	0.06	−4.51	<.001
1d.2	Order (Second)	Social Pressure	0.29	0.05	7.66	<.001
Exploratory analysis results (apologies)						
1d.3	Order (Second)	Likability	−0.11	0.04	−3.29	=.001

*Note.* IV and DV = independent and dependent variable;  $\beta$  = estimate (standardized);  $SE$  = standard error.

the later (i.e., second) expression as less genuine, and they perceived the person who expressed later as being under greater social pressure to do so.

Next, we tested indirect effects from expression order to (lower) genuineness through (greater) social pressure. In Study 1b, being reminded to compliment increased perceived social pressure to do so (significant a path), and perceived social pressure to compliment decreased impressions of genuine gratitude (significant b path). Monte Carlo resampling (5,000 iterations) estimated that the 95% CI of this negative indirect effect excluded zero, 95% CI [-0.32, -0.21]. We confirmed analogous negative indirect effects in Study 1c, 95% CI [-0.27, -0.15], and Study 1d, 95% CI [-0.20, -0.09]. The online supplement reports all mediation results, including point estimates of all pathways.

Exploratory analyses found that in all three studies, participants perceived the person who group-emailed later as less likable (Models 1b.3, 1c.3, and 1d.3). Finally, we tested indirect effects from expression order to perceived social pressure (greater) to perceived genuineness (lower) to perceived likability (lower). Fitting serial mediation models (Hayes, 2018, Model 6) with bootstrapped estimates using 10,000 resamples confirmed this negative indirect effect in Study 1b (95% CI [-0.15, -0.07]), Study 1c (95% CI [-0.10, -0.03]), and Study 1d (95% CI [-0.06, -0.01]). The online supplement reports all serial mediation results.

## Discussion

Studies 1a–1d confirmed that one type of reminder—an early public prosocial expression—reduced the perceived genuineness of later instances of the same behavior across several prosocial expressions: thanks, compliments, condolences, and apologies. The negative effect of the reminder on perceived genuineness was at least partly due to the reminder increasing the social pressure to act. We also found that reminded prosocial expressers came across as less likable.

One alternative explanation is that later expressers were perceived as less genuine, simply as a function of the time that passed since the target's message and not because earlier expressers had subtly reminded them to follow suit. We conducted Study S1 (in the online supplement) to address this issue by controlling for the amount of time that has passed, and we replicated the indirect effect from being reminded to lower perceived genuineness through higher perceived social pressure.

The within-subject nature of the design in this study may have created a demand effect by encouraging a direct comparison among expressers. Study 2 addresses this issue by using a between-subjects design as well as a different paradigm.

### Study 2: Being Reminded by the Favor Doer, Between Subjects

Study 2 aimed to conceptually replicate the results of Study 1 using a different manipulation of being reminded to thank as well as doing so in a between-subjects design that concealed our aim to compare impressions of spontaneous and reminded gratitude. The design and hypotheses were preregistered at [https://aspredicted.org/blind.php?x=JP5\\_BWZ](https://aspredicted.org/blind.php?x=JP5_BWZ).

## Method

### Participants

We collected data from 790 participants through Prolific. We excluded and replaced 400 of these participants because their survey erroneously asked them to rate a target person who did not express gratitude in the scenario (“Robin” instead of “Taylor,” or vice versa). This error in our survey was not confounded with its experimental conditions. As preregistered, we excluded three participants who did not pass an attention check, 18 participants who did not pass a comprehension check, and one participant who recommended dropping their data at the end of the survey, leaving 768 participants ( $M_{\text{age}} = 40.50$ ,  $SD = 24.26$ ; 55% men).

### Procedure

Participants read that Alex volunteered to complete a report and sent a group email telling Robin and Taylor. In the reminded condition, participants read: “On Tuesday morning, Taylor walked through the hallway. On the way, he bumped into Alex. When Alex saw Taylor, he said, ‘I wasn’t able to work on anything but the report yesterday. You owe me.’ Taylor then responded: ‘Thank you so much for spending extra time to complete the report! I really appreciate your hard work.’” In the spontaneous condition, participants read: “On Tuesday morning, Taylor walked through the hallway. At Alex’s office, Taylor knocked on Alex’s door. When Alex opened the door, Taylor said to Alex, ‘Thank you so much for spending extra time to complete the report! I really appreciate your hard work.’”

After reading one of these two scenarios (i.e., in a between-subjects design), participants rated the genuineness, social pressure, and likability ( $\alpha_s = .98$ ,  $.89$ , and  $.94$ , respectively) for Taylor in the same way as in Study 1a.

## Results

We fit a linear mixed model to predict participants’ impressions of the thanker’s genuineness from the conditions ( $-0.5 = \text{spontaneous}$ ,  $0.5 = \text{reminded}$ ; Table 3, Model 2.1). As predicted, there was a negative main effect such that participants perceived the thanker as less genuine in the reminded (vs. spontaneous) condition. In a second linear mixed model, we found that participants perceived the reminded (vs. spontaneous) thanker as being under greater social pressure to thank (Table 3, Model 2.2).

Mediation analysis (see the online supplement for all results) revealed that being reminded to thank increased perceived social

**Table 3**  
*Study 2: Effect of Being Reminded on Perceived Genuineness, Social Pressure, and Likability*

Model	IV	DV	$\beta$	$SE$	$t$	$p$
Confirmatory analysis results						
2.1	Reminder	Genuineness	-0.37	0.07	-10.85	<.001
2.2	Reminder	Social Pressure	0.31	0.10	9.10	<.001
Exploratory analysis results						
2.3	Reminder	Likability	-0.28	0.07	-7.98	<.001

*Note.* IV and DV = independent and dependent variable;  $\beta$  = estimate (standardized);  $SE$  = standard error.

pressure to do so (significant *a* path) and perceived social pressure to thank decreased impressions of genuine gratitude (significant *b* path). Monte Carlo resampling (5,000 iterations) estimated that the 95% CI of this negative indirect effect excluded zero, 95% CI [-0.15, -0.05]. This pattern of results was consistent with the mediation hypothesis that participants rated the thanker as less genuine in the reminded (vs. spontaneous) condition because the social pressure on them was larger.

An exploratory analysis showed that participants rated the reminded (vs. spontaneous) thanker not only as less genuine but also as less likable (Table 3, Model 2.3). Finally, we tested an indirect effect from being reminded to perceived social pressure (greater) to perceived genuineness (lower) to perceived likability (lower). Fitting a serial mediation model (Hayes, 2018, Model 6) with bootstrapped estimates using 10,000 resamples confirmed this negative indirect effect, 95% CI [-0.09, -0.02]. The online supplement reports all serial mediation results.

## Discussion

Study 2 corroborated the robustness of the detrimental effect of reminders on impressions of genuineness and likability in a between-subjects design that concealed our aim to compare spontaneous to reminded gratitude. Furthermore, this study confirmed that the effect also occurs with a different operationalization of being reminded to thank: Being prompted by the favor doer.

### Study 3: Being Reminded by a Sign

In this study, we aimed to generalize the source of reminders from another person to a reminder sign. We created a scenario in which a person sends a thank-you message to their mother on Mother's Day. We manipulate whether or not the thanker saw a reminder sign before doing that. We predicted that the thanker's gratitude expression would be perceived as less genuine in the reminded (vs. spontaneous) condition. As in Studies 1a–2, we predicted that perceived social pressure would mediate this effect. The design and hypotheses were preregistered at [https://aspredicted.org/blind.php?x=QDV\\_BQ8](https://aspredicted.org/blind.php?x=QDV_BQ8).

## Method

### Participants

We collected data from 500 participants through Prolific. As preregistered, we excluded seven participants who did not pass an attention check, leaving 493 participants ( $M_{\text{age}} = 42.69$ ,  $SD = 12.99$ ; 56% men).

### Procedure

Participants read two scenarios about a person expressing gratitude to their mother on Mother's Day. In the reminded condition, a person woke up on a Sunday in May. They were hungry and went to the grocery store. They saw a big sign reading, "It's Mother's Day. Make her feel special today." While waiting for their turn to pay at the cashier, they grabbed their phone and texted their mother a thank-you message (e.g., "Eternally grateful for having the best mom. Happy Mother's Day!"). In the spontaneous condition, a person went to the grocery store and texted their mother a similar message while waiting to pay at the

cashier (e.g., "Happy Mother's Day! I cannot thank you enough for being the best mom."). We did not mention a reminder sign in the spontaneous condition.

We randomized the order in which participants read about the spontaneous and reminded gratitude conditions, the first names of the persons in the two conditions (Robin and Taylor),<sup>1</sup> and the thank-you messages. After reading the scenarios, participants rated genuineness, social pressure, and likability ( $\alpha_s = .96$ ,  $.88$ ,  $.94$ , respectively) for each of the two persons who expressed gratitude in the same way as in Studies 1a and 2.

## Results

We fit a linear mixed model to predict participants' impressions of the expressers' genuineness from the condition ( $-0.5 = \text{spontaneous}$ ,  $0.5 = \text{reminded}$ ) in which they had expressed their gratitude (Table 4, Model 3.1). We included random intercepts for participants to account for multiple ratings per participant. As predicted, participants perceived the reminded expresser as less genuine than the spontaneous thanker. In a second linear mixed model, the dependent variable was participants' impressions of the social pressure to thank (Table 4, Model 3.2). As predicted, participants perceived the reminded expresser as being under greater social pressure to thank than the spontaneous expresser.

Next, we examined mediation (the online supplement reports all results). Being reminded to thank increased perceived social pressure to do so (significant *a* path), and perceived social pressure to thank decreased impressions of genuine gratitude (significant *b* path). Monte Carlo resampling (5,000 iterations) estimated that the 95% CI of this negative indirect effect excluded zero, 95% CI [-0.27, -0.09]. This pattern of results was consistent with the mediation hypothesis that participants' rated the spontaneous (vs. reminded) thanker as more genuine because the social pressure on them (vs. the reminded thanker) was smaller.

An exploratory analysis showed that participants rated the reminded (vs. spontaneous) thanker not only as less genuine but also as less likable (Table 4, Model 3.3). Finally, we tested an indirect effect from being reminded to perceived social pressure (greater) to perceived genuineness (lower) to perceived likability (lower). Fitting a serial mediation model (Hayes, 2018, Model 6) with bootstrapped estimates using 10,000 resamples confirmed this negative indirect effect, 95% CI [-0.10, -0.03]. The online supplement reports all serial mediation results.

## Discussion

Study 3 generalized the source of reminders from a person (who either performs the normative behavior or mentions a situation that calls for the behavior) to a public sign.

<sup>1</sup> In one of the two conditions, the scenario erroneously mentioned "Robin" once and "Taylor" once when it should have mentioned "Robin" or "Taylor" twice. We did not rerun the study because from comparisons between the two scenarios, and the dependent variables (e.g., "Robin [or Taylor] really meant it when they [...]") to the scenarios, it likely became clear to the participants that each scenario was about just one target person expressing gratitude.

**Table 4**

*Study 3: Effect of Being Reminded on Perceived Genuineness, Social Pressure, and Likability*

Model	IV	DV	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Confirmatory analysis results						
3.1	Reminder	Genuineness	-0.16	0.07	-6.20	<.001
3.2	Reminder	Social Pressure	0.31	0.08	13.96	<.001
Exploratory analysis results						
3.3	Reminder	Likability	-0.09	0.04	-4.72	<.001

*Note.* IV and DV = independent and dependent variable;  $\beta$  = estimate (standardized); *SE* = standard error.

#### Study 4: Reminders in a Real Behavioral Interaction

Study 4 had three aims. First, we aimed to replicate our main effect and mediation with a fourth operationalization of reminders: Directly telling someone that they owe thanks. Second, we extended our findings to real gratitude expressions between participants in an asynchronous interaction. Third, we generalized the main effect and mediation from observers of thanks (Studies 1a–3) to receivers of thanks. To that end, we randomly assigned participants to either the role of the favor doer (i.e., the receiver of thanks) or the role of a third party who observed the favor doer and the two thankers. The design and hypotheses were preregistered at [https://aspredicted.org/blind.php?x=HXY\\_J61](https://aspredicted.org/blind.php?x=HXY_J61).

#### Method

Study 4 involved teams of three participants: the favor doer (Red Teammate), one favor recipient whom we prompted to thank the favor doer, and one favor recipient whom we did not prompt to thank the favor doer. The latter two were the Blue and Yellow Teammates, or vice versa, and their sole purpose was to thank the Red Teammate. Because of this, we first surveyed the Blue and Yellow Teammates, which we report in the online supplement, and only then did we survey the Red Teammate (i.e., the receiver of thanks) and one observer per team, which we report below.

#### Participants

We collected data from 402 participants through Prolific. As preregistered, we excluded 82 participants who did not pass a comprehension check, three participants who recommended dropping their data at the end of the survey, and six participants who did not solve all the math problems, leaving 311 participants ( $M_{\text{age}} = 37.07$ ,  $SD = 12.94$ ; 44% men).

#### Procedure

We randomly assigned half of the participants to be the Red Teammate and tasked each Red Teammate to solve 10 easy but time-consuming and somewhat dull math problems. Each problem was to select two out of four numbers that added up to 10. Nearly all (97%) of the Red Teammates succeeded in solving all problems. Solving all problems earned everyone in the team a bonus of 50 cents. The Blue and Yellow Teammates' task was to watch a video showing cute animals. All teammates knew every other teammate's task. Only the Red Teammate's task earned money for everyone in the

team, and thus, the Blue and Yellow Teammates were in a position to thank the Red Teammate.

We informed each successful Red Teammate that the Blue and Yellow Teammates had written messages to them. The messages were "Thank you so much for solving the problems for us! I really appreciate your work" and "Thanks a lot for doing all that work for us! You are the best!" We randomized which teammate had written which message, and we randomized which teammate had received which instruction from us. We directly reminded one teammate to thank the Red Teammate, using the instructions "Here you have a chance to send the Red Teammate a message in the case that he/she solves all math problems correctly. We think you owe him/her a thank you note." Our instructions to the nonreminded teammate were "Here you have a chance to send the Red Teammate a message in the case that he/she solves all math problems correctly. There is no right or wrong choice." We showed the Red Teammate not only the messages from the Blue and Yellow Teammates but also the messaging instructions that we had given to the Blue and Yellow Teammates. As a result, the Red Teammate received similar gratitude expressions from the Blue and Yellow Teammates and learned that one thank-you was reminded, whereas the other thank-you was spontaneous.

We randomly assigned the other half of the participants to be the observer. Each observer learned about the interaction between the Red, Blue, and Yellow Teammates in a step-by-step fashion. At the end of the study, each Red Teammate and observer rated the Blue and Yellow Teammates using the same scales as in Studies 1–3 (genuineness, social pressure, and likability;  $\alpha_s = .98, .94, .93$ , respectively). The likability scale included the additional item "For each person below, would you choose to be on a team with them in the future?"

#### Results

In a linear mixed model, we predicted participants' impressions of the two thankers' genuineness as a function of their perspective (observer = -0.5, receiver = 0.5), the presence of a reminder to thank (spontaneous = -0.5, reminded = 0.5), and the interaction of those two variables (Table 5, Model 4.1). We included random intercepts for participants to account for the fact that each participant judged the message from both the reminded thanker and the spontaneous thanker. As predicted, we found a negative relationship between the reminded message and perceived genuineness, suggesting that participants saw the thanker whom we had reminded to thank as less genuine than the thanker who had expressed gratitude spontaneously. The interaction between the presence of a reminder and the participant's role was not significant. Thus, the effect of reminders on perceived genuineness was similar for participants directly receiving expressions of gratitude,  $\beta = -0.23$ ,  $SE = 0.08$ ,  $t = -6.67$ ,  $p < .001$ , compared to the participants who observed expressions of gratitude,  $\beta = -0.20$ ,  $SE = 0.09$ ,  $t = -5.05$ ,  $p < .001$ , see also Figure 1.

A second linear mixed model replaced the dependent variable with impressions of social pressure to thank (Table 5, Model 4.2). Consistent with our previous findings, we found a positive relationship between the reminded message and perceived social pressure to thank. Participants viewed the reminded thanker as under greater social pressure to thank than the spontaneous thanker. Again, there was no significant interaction between the presence of a reminder and the participant's role. Thus, the effect of reminders on



**Table 5***Study 4: Effect of Being Reminded on Perceived Genuineness, Social Pressure, and Likability*

Model	IV	DV	$\beta$	<i>SE</i>	<i>t</i>	<i>p</i>
Confirmatory analysis results						
4.1	Reminder	Genuineness	-0.22	0.06	-8.16	<.001
4.1	Role (Receiver)	Genuineness	-0.04	0.11	-0.90	.368
4.1	Reminder $\times$ Role	Genuineness	-0.02	0.12	-0.74	.458
4.2	Reminder	Social Pressure	0.60	0.09	21.62	<.001
4.2	Role (Receiver)	Social Pressure	-0.03	0.12	-0.74	.459
4.2	Reminder $\times$ Role	Social Pressure	-0.02	0.19	-0.74	.459
Exploratory analysis results						
4.3	Reminder	Likability	-0.11	0.04	-6.23	<.001
4.3	Role (Receiver)	Likability	-0.05	0.11	-0.89	.374
4.3	Reminder $\times$ Role	Likability	0.01	0.07	0.48	.634

*Note.* IV and DV = independent and dependent variable;  $\beta$  = estimate (standardized); *SE* = standard error.

perceived social pressure was similar for participants directly receiving expressions of gratitude,  $\beta = 0.58$ , *SE* = 0.13, *t* = 14.80, *p* < .001, and those simply observing expressions of gratitude,  $\beta = 0.62$ , *SE* = 0.13, *t* = 15.87, *p* < .001.

Next, we tested whether perceived social pressure mediated the effect of being reminded to thank on perceived genuineness. We did this separately for the receivers and observers, and the online supplement reports all mediation results. For both of these conditions, the paths from the reminded condition to perceived social pressure to thank (a) and from social pressure to perceived genuineness of thanks (b) were significant. The Monte Carlo resampling procedure (5,000 iterations) estimated negative indirect effects, the 95% CIs of which excluded zero, 95% CIs [-0.63, -0.22] and [-0.53, -0.05] for the receiver and observer roles, respectively. This is consistent with the hypothesis that reminders reduce perceived genuineness in the eyes of both receivers and observers because reminders lead to perceptions of increased social pressure.

In an exploratory analysis, we ran a linear mixed model that was the same as Model 4.1 except that we replaced the dependent

variable with likability (Table 5, Model 4.3). As in Studies 1a–3, participants viewed the reminded (vs. spontaneous) thanker as less likable. The interaction between the presence of a reminder and the participant's role was not significant. Thus, the effect of reminders on perceived likability was similar for participants directly receiving expressions of gratitude,  $\beta = -0.10$ , *SE* = 0.04, *t* = -5.26, *p* < .001, and those simply observing expressions of gratitude,  $\beta = -0.12$ , *SE* = 0.06, *t* = -4.14, *p* < .001.

Finally, we tested an indirect effect from being reminded to perceived social pressure (greater) to perceived genuineness (lower) to perceived likability (lower). We fitted two separate serial mediation models (Hayes, 2018, Model 6) with bootstrapped estimates using 10,000 resamples to test the indirect effect for the receiver and observer roles. The 95% CIs include zero, 95% CIs [-0.08, 0.23] and [-0.17, 0.05] for the receiver and observer roles, respectively, and thus Study 4 did not provide evidence for the above serial mediations.

## Discussion

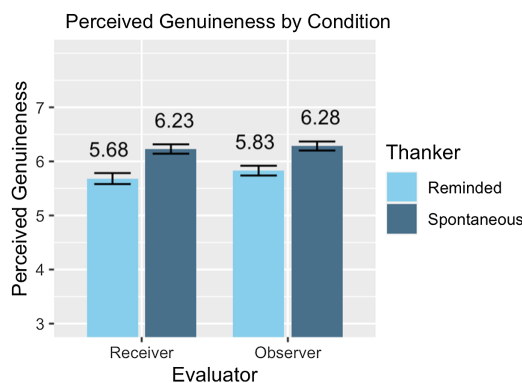
This study replicated the main results from Studies 1–3 but in the context of real thank-you messages from participants in an asynchronous interaction. Furthermore, the results demonstrated that the negative impact of reminders on perceived genuineness extends beyond uninvolved observers to the receivers of gratitude. We found no difference in the size of the effect between receivers and uninvolved observers.

## Study 5: Behavioral Consequences of Being Reminded

Study 5 tested whether observers' perceptions trickle down to differences in their behavior toward reminded versus spontaneous thankers. Previous work found that people perceived to be doing prosocial behaviors for strategic rather than genuine reasons were rewarded less than those perceived to be doing them genuinely (Eastman, 1994). We examined whether reminded thankers—because they are perceived as less genuine—are rewarded less than spontaneous thankers. The design and hypotheses were preregistered at [https://aspdicted.org/blind.php?x=DJJ\\_91X](https://aspdicted.org/blind.php?x=DJJ_91X).

**Figure 1**

*Study 4: Perceived Genuineness by Being Reminded and Evaluator Role*



*Note.* Error bars represent standard errors. See the online article for the color version of this figure.

## Method

### Participants

We collected data from 303 participants through Prolific. As preregistered, we excluded two participants who did not pass an attention check, and 78 participants who did not pass a comprehension check, and three participants who recommended dropping their data at the end of the survey, leaving 220 participants ( $M_{\text{age}} = 42.55$ ,  $SD = 13.64$ ; 46% men).

### Procedure

Study 5 proceeded in the same way as the observer condition in Study 4. Participants observed two people (Yellow and Blue Teammates) express their gratitude to a favor-doer (Red Teammate), one spontaneously and one after being reminded to do so. The thank-you messages were the same as in Study 4. Then participants rated both thankers' genuineness, the social pressure on them to thank, and their likability. Finally, participants were asked to divide 100 cents between the reminded and spontaneous thanker:

Now we are going to award the Yellow Teammate and Blue Teammate 100 cents combined. You will be the one to decide how that 100 cents are to be divided. We will randomly select one observer's division to be implemented in real life [i.e., paid out to all Yellow and Blue Teammates that we had recruited in the pilot study mentioned in Study 4].

## Results

Participants awarded less than half of the bonus to the reminded thanker,  $M = 48.17$  cents, 95% CI [47.14, 49.19],  $t(219) = -3.52$ ,  $p < .001$ ,  $d = 0.24$ , and thereby favored the spontaneous thanker. In an exploratory analysis, we tested an indirect effect from being reminded to perceived social pressure (greater) to perceived genuineness (lower) to assigned award (lower). Fitting a serial mediation model (Hayes, 2018, Model 6) with bootstrapped estimates using 10,000 resamples confirmed this negative indirect effect, 95% CI [-0.56, -0.12]. The online supplement reports all serial mediation results.

As in the previous studies, in linear mixed models with random intercepts that controlled for multiple responses per participant, we predicted genuineness, social pressure, and likability ( $\alpha_s = .98$ ,  $.93$ ,  $.90$ , respectively) from the presence of a reminder to thank (spontaneous = -0.5, reminded = 0.5). The results replicated the previous studies (Table 6, Models 5.1–5.3). We then fit a mediation model that tested whether social pressure may explain the negative effect of being reminded to thank (spontaneous = -0.5, reminded =

**Table 6**

*Study 5: Effect of Being Reminded on Perceived Genuineness, Social Pressure, and Likability*

Model	IV	DV	$\beta$	SE	$t$	$p$
Confirmatory analysis results						
5.1	Reminder	Genuineness	-0.27	0.08	-8.28	<.001
5.2	Reminder	Social Pressure	0.59	0.12	17.26	<.001
Exploratory analysis results						
5.3	Reminder	Likability	-0.16	0.05	-6.51	<.001

*Note.* IV and DV = independent and dependent variable;  $\beta$  = estimate (standardized); SE = standard error.

0.5) on coming across as genuine when thanking. The a and b paths in this model were significant, and Monte Carlo resampling (5,000 iterations) estimated that the 95% CI of this negative indirect effect excluded zero, 95% CI [-0.63, -0.27]. The online supplement reports all mediation results.

An exploratory analysis showed that participants rated the reminded (vs. spontaneous) thanker not only as less genuine but also as less likable (Table 6, Model 5.3). We tested an indirect effect from being reminded to perceived social pressure (greater) to perceived genuineness (lower) to likability (lower). Fitting a serial mediation model (Hayes, 2018, Model 6) with bootstrapped estimates using 10,000 resamples confirmed this negative indirect effect, 95% CI [-0.21, -0.06]. The online supplement reports all serial mediation results.

## Discussion

Study 5 showed that the decrement to reminded (vs. spontaneous) thankers' apparent genuineness trickled down to a disadvantage in resource allocation. The reminded thanker was awarded a smaller share of a bonus than the spontaneous thanker.

### Study 6: Reminded Thanks Versus No Thanks

So far, we have shown that prosocial behavior is seen as less genuine/likable if there was a reminder, compared to when the same behavior was shown spontaneously. Study 6 aimed to replicate this drawback of reminders while examining their social-evaluative consequences in a broader and more balanced way. Behaving normatively is seen as desirable, and thus, reminders should improve impressions of a person, if reminders convert a person's failure to behave normatively into normative behavior. To examine this, we included conditions in which people failed to thank. We tested whether a reminded thanker would be seen as more likable than a person who did not thank at all (even if the latter person was not reminded). Study 6 also tested whether another potential drawback of reminders is that it makes failing to engage in a normative behavior look worse—that is, a person who fails to behave normatively is less likable when their failure was (vs. was not) preceded by a reminder. The design and hypotheses were preregistered at [https://aspredicted.org/blind.php?x=GM8\\_M7W](https://aspredicted.org/blind.php?x=GM8_M7W).

## Method

### Participants

We collected data from 1,616 participants through Prolific. As preregistered, we excluded 10 participants who did not pass an attention check, 75 participants who did not pass a manipulation check, and four participants who recommended dropping their data at the end of the survey, leaving 1,527 participants ( $M_{\text{age}} = 42.48$ ,  $SD = 51.56$ ; 55% men).

### Procedure

Study 6 used a 2 (expression order: first mover vs. second mover)  $\times$  2 (email visibility: private vs. group)  $\times$  2 (second mover expressed gratitude: present vs. absent) mixed design. We manipulated expression order within subjects, whereas we manipulated both email visibility and second mover expressed gratitude between

subjects. Participants read the same scenario as in Study 1a, with three exceptions. First, just two instead of three people thanked Alex for completing the report that the team had been tasked with. Second, we manipulated whether the second thanker received a reminder between subjects: There was a group and a private email condition. In the group email condition, the second thanker read the first thanker's message to Alex. In the private email condition, the first thanker's message was private such that the second thanker sent their message to Alex without having learned that anyone had thanked Alex before them. Third, we manipulated whether the second thanker expressed gratitude or not. As in Study 1a, participants read that Alex volunteered to complete a report and saw the email exchange between Alex and their work colleagues, Robin and Taylor. In the group email condition, the second mover read the first mover's grateful and reminding message to Alex. In the private email condition, the second mover was not aware of the first-mover's grateful reply to Alex (i.e., there was no reminder). In the gratitude-present condition, the second mover sent a thank-you message like the first thanker, and in the no-gratitude condition, participants read that "A week has passed. Neither Alex nor Robin has heard back from Taylor." As before, we randomized Alex's gender, who replied first (Robin or Taylor), the two thank-you messages in the gratitude-present condition, and the single thank-you message in the no-gratitude condition.

After reading the scenario, participants in the gratitude-present condition provided ratings of genuineness, social pressure, and likability for the two thankers, and participants in the no-gratitude condition rated the likability of Robin and Taylor as in Study 1a ( $\alpha = .97, .87, .95$ , respectively).

**Results**

In the gratitude-present condition, we ran three linear mixed models that predicted perceived genuineness, social pressure, and likability from expression order ( $-0.5 =$  first mover,  $0.5 =$  second mover), email visibility ( $-0.5 =$  group,  $0.5 =$  private), their interaction, and

random intercepts for the participants (Table 7, Models 6.1–6.3). The model that predicted genuineness was confirmatory, whereas the other two models were exploratory. As predicted, the decrement in the second (vs. first) thanker's perceived genuineness and likability was larger in the group email condition (reminder),  $\beta_{\text{genuineness}} = -0.18$ ,  $SE = 0.08$ ,  $t = -4.82$ ,  $p < .001$ ,  $\beta_{\text{likability}} = -0.46$ ,  $SE = 0.06$ ,  $t = -20.54$ ,  $p < .001$ , compared to the private email condition (no reminder),  $\beta_{\text{genuineness}} = -0.07$ ,  $SE = 0.06$ ,  $t = -1.95$ ,  $p = .051$ ,  $\beta_{\text{likability}} = -0.41$ ,  $SE = 0.06$ ,  $t = -17.52$ ,  $p < .001$ . In addition, being the second (vs. first) thanker increased perceived social pressure in the group email condition (reminder),  $\beta = 0.21$ ,  $SE = 0.12$ ,  $t = 5.73$ ,  $p < .001$ , but in the private email condition (no reminder), there was no significant effect of being the second on perceived social pressure,  $\beta = 0.04$ ,  $SE = 0.12$ ,  $t = 1.22$ ,  $p = .223$ .

In an exploratory analysis, we tested whether the smaller effect of expression order on social pressure in the private (vs. public) email condition may explain why the decrement to the second thanker's genuineness was smaller in the private (vs. public) email condition. We used the approach by Yzerbyt and colleagues to test this moderated mediation. The online supplement reports all mediation results. The private (vs. public) email condition decreased the effect of expression order on perceived social pressure (significantly moderated a path). Perceived social pressure reduced perceived genuineness (significant b path). We complemented this joint-significance analysis with a computation of a moderated mediation index (5,000 Monte Carlo resampling iterations). Consistent with moderated mediation, the 95% confidence interval of the index excluded zero, 95% CI  $[-0.12, -0.03]$ .

In another exploratory analysis, we tested an indirect effect from being reminded to perceived social pressure (greater) to perceived genuineness (lower) to perceived likability (lower) across all conditions where second thanker expressed gratitude. Fitting a serial mediation model (Hayes, 2018, Model 6) with bootstrapped estimates using 10,000 resamples confirmed this negative indirect effect, 95% CI  $[-0.05, -0.02]$ . The online supplement reports all mediation results.

**Table 7**  
*Study 6: Effect of Expression Order (i.e., Being Reminded) on Perceived Genuineness, Social Pressure, and Likability*

Model	IV	DV	$\beta$	SE	t	p
Confirmatory analysis results						
6.1	Order (Second)	Genuineness	-0.12	0.02	-10.23	<.001
6.1	Email Visibility (Private)	Genuineness	0.12	0.07	3.60	<.001
6.1	Order $\times$ Email Visibility	Genuineness	0.07	0.05	5.28	<.001
6.2	Order (Second)	Social Pressure	0.12	0.04	11.08	<.001
6.2	Email Visibility (Private)	Social Pressure	-0.13	0.11	-3.82	<.001
6.2	Order $\times$ Email Visibility	Social Pressure	-0.08	0.07	-7.17	<.001
Exploratory analysis results						
6.3	Order (Second)	Likability	-0.44	0.04	-29.12	<.001
6.3	Email Visibility (Private)	Likability	0.06	0.05	3.25	.001
6.3	Order $\times$ Email Visibility	Likability	0.03	0.08	1.92	.055
6.4	Order (Second)	Likability	-0.44	0.03	-38.10	<.001
6.4	Email Visibility (Private)	Likability	0.04	0.04	2.72	.007
6.4	Second Behavior (Gratitude)	Likability	0.28	0.04	17.33	<.001
6.4	Order $\times$ Email Visibility	Likability	0.01	0.06	0.93	.350
6.4	Order $\times$ Second Behavior	Likability	0.38	0.06	32.89	<.001
6.4	Email $\times$ Second Behavior	Likability	0.01	0.09	0.88	.378
6.4	Order $\times$ EmailVis $\times$ SecondBeh	Likability	0.02	0.12	1.60	.109

Note. IV and DV = independent and dependent variable;  $\beta$  = estimate (standardized); SE = standard error.

Next, exploratory Model 6.4 predicted perceived likability from random intercepts for the participants and three factors, namely expression order and email visibility—coded as before—as well as the “second behavior,” or the second mover’s choice to express gratitude or not ( $-0.5 = \text{gratitude-absent}$ ,  $0.5 = \text{gratitude-present}$ ). The model included all two-way interactions and the three-way interaction. Table 7 shows the results. The positive main effect of the second mover’s behavior on likability indicates that, on average, the second mover was seen as more likable when they expressed gratitude, compared to when they failed to express gratitude. Next, we ran two follow-up analyses that were linear models predicting likability from comparisons between two out of the eight cells of the above three-factorial design. The first analysis found that expressing gratitude after being reminded (coded as  $-0.5$ ) was seen as more likable than failing to thank in the absence of a reminder (coded as  $0.5$ ),  $\beta = -1.13$ ,  $SE = 0.09$ ,  $t = -18.49$ ,  $p < .001$ . Thus, a second mover was more likable if they thanked, even if they were reminded, than if they did not thank at all. The second follow-up analysis found that the presence (coded as  $-0.5$ ) versus absence (coded as  $0.5$ ) of a reminder did not impact the likability of a second mover who failed to thank,  $\beta = -0.02$ ,  $SE = 0.09$ ,  $t = -0.69$ ,  $p = .492$ . Thus, failing to thank looked similarly unlikable whether it was preceded by a reminder to thank or not.

## Discussion

Study 6 painted a broader and more balanced picture of the social-evaluative consequences of reminders to do good. As in the previous studies, a reminder harmed the image of a person who behaved normatively—thanking was seen as more genuine and more likable in the absence (vs. presence) of a reminder. However, the reminder did not worsen the image of a person who did not behave normatively—failing to thank was equally unlikable in the presence and absence of a reminder. In addition and importantly, even a reminded thanker seemed more likable than someone who did not thank at all (whether they were reminded or not). Thus, reminders have a general positive impact on people’s image to the extent that they convert failure to behave normatively to normative behavior. However, whether reminders convert failure to success on average is an open empirical question: It is possible that reminders may decrease the likelihood of normative behavior if they inspire psychological reactance such that people refuse to behave normatively as an act of defiance in response to a reminder.

## Study 7: Elaboration as a Solution to the Downside of Reminders

Study 7 examined a potential solution to the negative effect of reminders on a thanker’s perceived genuineness. Costly signaling theory indicates that certain costly or wasteful behaviors can be relied upon as signals of honesty or genuineness (Spence, 1973; Zahavi, 1975). As a result, listeners may be particularly attuned to displays of cost from a speaker in determining the speaker’s genuineness (Chaudhry & Wald, 2022). Accordingly, we predicted that if a reminded thanker were to write a more elaborate message than a spontaneous thanker—thus, incurring an effort cost—the decrement in their perceived genuineness from being reminded would be reduced or eliminated. The design and hypotheses were preregistered at [https://aspredicted.org/blind.php?x=5JQ\\_HL1](https://aspredicted.org/blind.php?x=5JQ_HL1).

## Method

### Participants

We collected data from 807 participants through Prolific. As preregistered, we excluded five participants who did not pass an attention check, 166 participants who did not pass a manipulation check, and 13 participants who did not pass a comprehension check, and four participants who recommended dropping their data at the end of the survey, leaving 619 participants ( $M_{\text{age}} = 39.99$ ,  $SD = 13.86$ ; 44% men).

### Procedure

Study 7 proceeded in the same way as the group email paradigm in Study 1a, except that there was no third thanker and the second thanker expressed gratitude either briefly or elaborately depending upon the condition. The first thanker emailed the group with the note, “Thank you so much, Alex!” Following this, the second thanker sent a note. In the brief condition, that note was, “Thanks a lot, Alex!” In the elaborate condition that note was, “Thank you so much, Alex! I really appreciate your work. Couldn’t have done it without you. Is there a better colleague out there? I think not. Thank you!” After reading the scenario, participants rated genuineness, social pressure, and likability as in the previous studies. Following this, they rated the first and second thankers’ invested effort on a 7-point scale by indicating to what extent they *agree* or *disagree* with the statement “This person put in a lot of effort to express his/her gratitude.”

**Table 8**  
*Study 7: Effect of Expression Order (i.e., Being Reminded) and Elaboration on Perceived Genuineness and Likability*

Model	IV	DV	$\beta$	$SE$	$t$	$p$
Confirmatory analysis results						
7.1	Order (Second)	Genuineness	-0.17	0.05	-7.59	<.001
7.1	Message (Elaborate)	Genuineness	0.00	0.08	0.12	.904
7.1	Order $\times$ Message	Genuineness	0.07	0.11	3.32	<.001
Exploratory analysis results						
7.2	Order (Second)	Likability	-0.12	0.03	-3.30	.001
7.2	Message (Elaborate)	Likability	0.10	0.09	2.41	.016
7.2	Order $\times$ Elaboration	Likability	0.16	0.07	5.11	<.001

*Note.* IV and DV = independent and dependent variable;  $\beta$  = estimate (standardized);  $SE$  = standard error.

## Results

In linear mixed models with random intercepts for participants, we predicted genuineness and likability ( $\alpha_s = .98$  and  $.92$ , respectively) from expression order ( $-0.5 = \text{first/spontaneous}$ ,  $0.5 = \text{second/reminded}$ ), elaborateness in the second reply-all message ( $-0.5 = \text{brief}$ ,  $0.5 = \text{elaborate}$ ), and their interaction (Table 8, Models 7.1 and 7.2). The model that predicted genuineness was confirmatory, whereas the model that predicted likability was exploratory. As before, thanking second led to decrements in both perceived genuineness and likability. However, these decrements were smaller (or eliminated) when the second thank-you note was elaborate,  $\beta_{\text{genuineness}} = -0.09$ ,  $SE = 0.11$ ,  $t = -2.16$ ,  $p = .031$ ,  $\beta_{\text{likability}} = 0.03$ ,  $SE = 0.09$ ,  $t = 0.69$ ,  $p = .492$ , compared to brief,  $\beta_{\text{genuineness}} = -0.25$ ,  $SE = 0.09$ ,  $t = -6.60$ ,  $p < .001$ ,  $\beta_{\text{likability}} = -0.14$ ,  $SE = 0.08$ ,  $t = -3.58$ ,  $p < .001$ , as indicated by the significant interactions in Table 8 as well as Figure 2.

### Parallel Mediating Processes

There is not yet a software routine for testing parallel mediation using the superior two-step approach by Yzerbyt et al. (2018). Thus, we relied on single-index tests of parallel mediation (Hayes, 2013) in both the brief and elaborate thanks conditions. The independent and dependent variables were expression order and genuineness, respectively, while the two parallel, simultaneously, operating mediators were social pressure and elaborateness. Both mediations are depicted in Figure 3 and show that in both conditions, expression order was positively related to perceived social pressure, which was negatively related to perceived genuineness. At the same time, expression order was negatively related to effort in the brief thanks condition and positively related to effort in the elaborate thanks condition. Effort was positively related to perceived genuineness in both conditions. The online supplement reports all mediation results. The Monte Carlo resampling procedure (1,000 iterations) estimated two indirect effects, and their 95% CIs excluded zero, 95%  $CI_{\text{social pressure}} [-0.17, -0.08]$  and 95%  $CI_{\text{effort}} [-0.18, -0.04]$  in the brief thanks condition, and 95%  $CI_{\text{social pressure}} [-0.14, -0.03]$  and 95%  $CI_{\text{effort}} [0.51, 0.85]$  in the elaborate thanks condition (Figure 3). This pattern of results was consistent with the idea that

the effect of expression order on perceived genuineness was mediated by perceived social pressure as well as perceived effort in both conditions.

To further examine the role of effort as a mediator of the effect of expression order on perceived genuineness, we used the approach by Yzerbyt et al. (2018) to test a moderated mediation. The online supplement reports all mediation results. Thanking second (vs. first) in line decreased perceptions of effortful thanking when both gratitude expressions were brief. In contrast, thanking second (vs. first) in line increased perceptions of effortful thanking when the second gratitude expression was more elaborate (significantly moderated a path). Thanking perceived as effortful increased perceptions of genuine gratitude (significant b path). Based on 5,000 Monte Carlo resampling iterations and consistent with moderated mediation, the 95% confidence interval of a moderated mediation index excluded zero, 95% CI [0.62, 0.92]. Thus, in the brief condition, the reminded thanker was seen as exerting less effort than the spontaneous thanker, and this negatively impacted genuineness, whereas, in the elaborate condition, the reminded thanker was seen as exerting more effort than the spontaneous thanker, reducing the decrement to genuineness of being reminded.

## Discussion

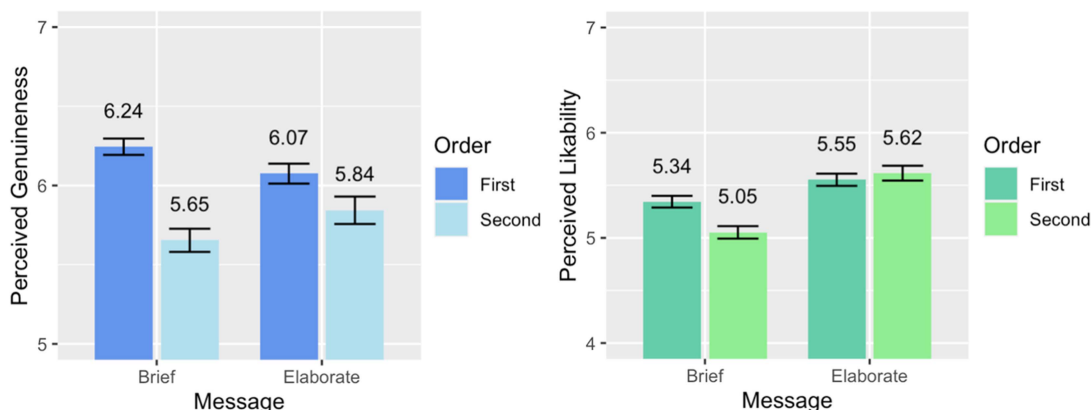
The results of Study 7 demonstrate that one way to overcome the negative effect of reminders on perceived genuineness is through effort exertion. By elaborating more when expressing their gratitude, reminded thankers compensated for the ambiguity about their prosocial or selfish motives in expressing gratitude, and thus, conveyed gratitude almost as genuinely as spontaneous thankers. Given the effectiveness of elaboration, Study 8 examined whether reminded thankers spontaneously use this solution when expressing their gratitude.

### Study 8: Do Reminded Thankers Spontaneously Elaborate?

Study 8 tested whether reminded thankers spontaneously thank more elaborately, thus enhancing their perceived genuineness. We measured elaborate thanking in terms of using more words and letters

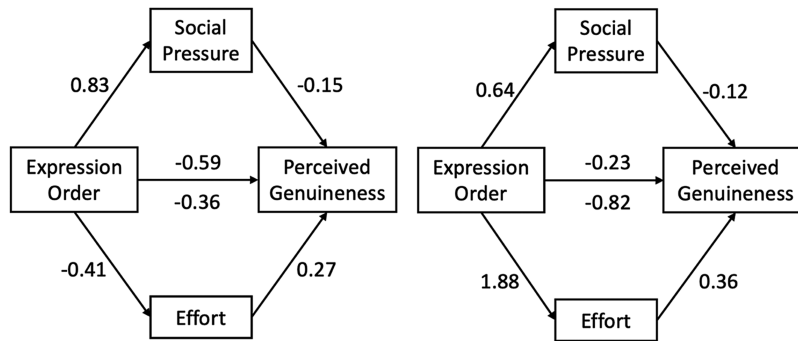
**Figure 2**

*Study 7: Perceived Genuineness and Likability by Expression Order and Elaboration*



Note. Error bars represent standard errors. See the online article for the color version of this figure.

**Figure 3**  
 Study 7: Parallel Mediation Models for the Brief (Left Side) and Elaborate (Right Side) Thanks Conditions



*Note.* The models show the indirect effects from expression order to perceived genuineness through perceived social pressure and perceived effort. The numerical values above the horizontal line from expression order to perceived genuineness represent the total effects and the values below that line represent the direct effects.

to express gratitude. The design and hypotheses were preregistered at [https://aspredicted.org/blind.php?x=LMP\\_P8P](https://aspredicted.org/blind.php?x=LMP_P8P).

## Method

### Participants

We collected data from 201 participants through Prolific. As preregistered, we excluded two participants who did not pass an attention check and 37 participants who did not pass a comprehension check, leaving 162 participants ( $M_{age} = 41.90$ ,  $SD = 13.22$ ; 54% men).

### Procedure

Study 8 used a similar paradigm as the group email paradigm in Study 1a. However, for stimulus sampling purposes, we manipulated the length of the first thanker's reply-all message: It was either a short or long thank-you message. Furthermore, in this study, participants acted as the second thanker. In the short reminder condition, the first thanker (Robin) replied-all with either "Thank you so much, Alex!" or "Thanks a lot, Alex!" (randomly selected). In the long reminder condition, the first thanker replied-all with either "Thank you so much, Alex! I really appreciate your work" or "Thanks a lot, Alex! Couldn't have done it without you" (randomly selected). Participants were then instructed to reply-all and to try to appear as grateful as the first thanker: "You want Alex to see you as just as grateful to him/her as Robin." After writing their message, participants rated the elaborateness of both the first thanker's message and their own message by indicating the extent to which they disagreed or agreed with the following two statements: "My/Robin's expression of gratitude was elaborate" and "My/Robin's expression of gratitude was effortful" on 7-point scales with radio buttons from  $-3 = \textit{definitely disagree}$  to  $3 = \textit{definitely agree}$ .

## Results

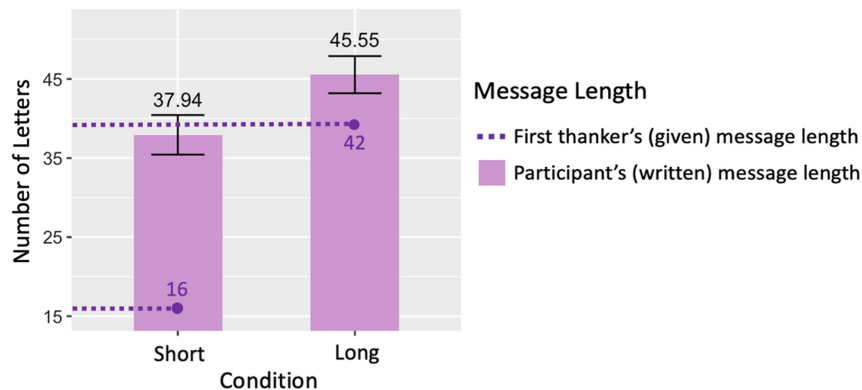
We preregistered that we would look at the difference in number of letters used as our primary measure of elaborateness. We calculated

the difference between the number of letters in participants' messages and the number of letters in the specific reference messages participants read (i.e., the first thanker's message), collapsing across the short- and long-reminder conditions (as preregistered). We ran a one-sample  $t$ -test to compare the difference with zero and found that the difference was significantly larger than zero,  $M = 10.93$ , 95% CIs [7.28, 14.58],  $t(161) = 5.92$ ,  $p < .001$ ,  $d = 0.46$ , meaning that there were significantly more letters used in the participants' messages than in the reference messages. We ran the same analysis on the number of words—what we preregistered as a secondary measure of elaborateness—and found that the difference was again significantly larger than zero,  $M = 2.37$ , 95% CIs [1.52, 3.22],  $t(161) = 5.48$ ,  $p < .001$ ,  $d = 0.43$ , meaning there were significantly more words used in participants' messages than in the reference messages.

Independent-sample  $t$ -tests indicated that participants' increment in letters typed and words typed was greater when they expressed gratitude after a first mover who wrote a short (vs. long) thank you message,  $t(150) = -5.25$ ,  $p < .001$ ,  $t(155) = -3.72$ ,  $p < .001$ , so besides the main analysis we pre-registered, we also ran the analysis on each condition separately. In the short reminder condition, participants typed more letters than the specific reference messages,  $M = 21.66$ , 95% CIs [16.71, 26.62],  $t(64) = 8.73$ ,  $p < .001$ ,  $d = 1.08$ , and more words than the specific reference messages,  $M = 4.18$ , 95% CIs [3.05, 5.32],  $t(64) = 7.36$ ,  $p < .001$ ,  $d = 0.91$  (Figure 4). In the long reminder condition, participants typed directionally more letters than the specific reference messages,  $M = 3.74$ , 95% CIs [-0.90, 8.39],  $t(96) = 1.60$ ,  $p = .113$ ,  $d = 0.16$ , and directionally more words than the specific reference messages,  $M = 1.15$ , 95% CIs [-0.01, 2.31],  $t(96) = 1.98$ ,  $p = .051$ ,  $d = 0.20$ .

As a measure of subjective effort, we also examined participants' perception of the elaborateness of their own message relative to the reference message (also preregistered as a secondary analysis). To do this, we averaged participants' responses to the two questions assessing elaborateness of their own thank-you message ( $\alpha = .70$ ) and that of the first thanker ( $\alpha = .71$ ). We ran a linear mixed model to predict perceived elaborateness from the target ( $-0.5 = \textit{Robin}$ ,  $0.5 = \textit{themselves}$ ), length of the first message ( $-0.5 = \textit{short}$ ,  $0.5 = \textit{long}$ ),

**Figure 4**  
 Study 8: Number of Letters in the Reminded Thanker's Expression of Gratitude



Note. Error bars represent standard errors. See the online article for the color version of this figure.

and their interaction. We included random intercepts for participants to account for multiple observations per participant on the order variable. As predicted, there was a positive relationship between the target and perceived elaborateness, meaning that participants rated their own message as more elaborate ( $M = 4.09$ ,  $SD = 1.43$ ) than the first thanker's message ( $M = 3.53$ ,  $SD = 1.37$ ). There was also a significant negative two-way interaction between the target and the length of the first message, so we analyzed perceived effort separately for the two conditions in which the first mover wrote a short (vs. long) thank-you message. Participants rated their own message as more elaborate ( $M = 3.88$ ,  $SD = 1.56$ ) than the first thanker's message ( $M = 2.92$ ,  $SD = 1.34$ ) in the short reminder condition,  $t = -6.03$ ,  $p < .001$ ,  $d = 0.66$ . Participants also rated their own message as more elaborate ( $M = 4.23$ ,  $SD = 1.34$ ) than the first thanker's message ( $M = 3.94$ ,  $SD = 1.23$ ) in the long reminder condition,  $t = -2.53$ ,  $p = .013$ ,  $d = 0.22$ , but the difference in perceived effort between the self and the first thanker is smaller in the long reminder condition.

## Discussion

When asked to write a reply-all thank-you note following another person and to come across equally as genuine as that person, participants spontaneously typed more letters and words than the first thanker. Moreover, participants subjectively perceived their own thank-you notes to be more elaborate than the first thanker's note. This pattern of results demonstrates that participants strategically exert more effort when their expression of gratitude is preceded by a reminder that could undermine impressions of their genuineness.

## General Discussion

Reminders to do good are prevalent, and they teach norms to those who do not know or misperceive those norms. When someone forgets a norm or deprioritizes it, reminders bring it to mind and emphasize its relevance. Reminders also make norm violations salient and rule out unintentional explanations, thereby increasing the cost of those norm violations. In all these ways, reminders to do good promote norm compliance. However, in this article, we have demonstrated that reminders also have a downside.

Reminders increase the social pressure to do good, and thereby increase ambiguity and confusion about what motivated the prosocial behavior. Was it the selfish motive to obtain a reward or avoid punishment or was it genuine altruism? This motive ambiguity undermines social relationships by making prosocial behaviors that are meant to build or repair relationships (e.g., thanking, congratulating, expressing condolences, apologizing) seem less genuine. We show this across 10 preregistered studies (and two supplemental preregistered studies).

Reminders to thank, praise, pity, and request pardon decreased the perceived genuineness of expressed gratitude, compliments, condolences, and apologies in the eyes of both observers (Studies 1–7) and receivers of gratitude (Study 4). This effect was mediated by perceptions of increased social pressure on the expresser to behave prosocially. Being seen as less genuinely grateful, praiseful, and so forth, reduced likability (Studies 1–7) and, in fact, resulted in a smaller reward for reminded (vs. spontaneous) expressers of gratitude (Study 5). It took an especially effortful gratitude expression for thankers to avoid the reminder-based decrement to their perceived genuineness and likability (Study 7). Reminded thankers seemed to know this, naturally increasing the elaborateness of their gratitude expression (Study 8). In sum, the downside of reminders is that they undermine perceptions of genuine prosociality, effectively creating a burden of extra effort to convey sincerity for genuine thankers, praisers, and so forth, who would have done so without being reminded. Reminders are beneficial though, if they convert failure to enact a prosocial norm to prosocial behavior (Study 6), which can improve observers liking of, and help for, both the expressers and receivers of the prosocial behavior (a.k.a. the witnessing effect; Algoe et al., 2020).

## Theoretical and Practical Implications

We extend previous research showing that salient financial and other self-interests make it difficult to know whether prosocial behaviors are due to altruistic or selfish motives (Berman & Silver, 2022; Hardy & Van Vugt, 2006; Kraft-Todd & Rand, 2019; Newman & Cain, 2014; Silver et al., 2021). The current work establishes that reminders cause a similar motive ambiguity, interfering with impressions of genuine prosociality. In this case, the salient self-interest is the desire to conform

to social pressure. As a result, this research shows that reminders reduce the correspondence bias: Reminders are features of the situation (vs. person) that change attributions of prosocial behavior from dispositional (i.e., genuine) to situational (i.e., due to social pressure). (For other ways to reduce the correspondence bias such as feeling negative moods, having time and capacity to think, experiencing others' self-interests, living in a collectivist society, and being mindful, see Forgas, 1998; Han et al., 2022; Hopthrow et al., 2017; Miyamoto & Kitayama, 2002; Trope & Gaunt, 2000).

Our data demonstrate that the impact of reminders on perceived genuineness is not restricted to cases when reminders are direct or blatant (as in Studies 2–5). In Studies 1a–1d and 6–7, the reminders were indirect: Thankers were either reminded by observing other gratitude expressers come before them or by interacting with favor-doers who simply alluded in conversation to the fact that the favor was done. Our results indicate that even these indirect and subtle reminders suffice to interfere with impressions of genuine prosociality as well as likability. This is an important observation because it suggests simply behaving prosocially in a public space (e.g., publicly thanking others) may undermine others' ability to signal prosociality. However, this behavior may also be especially tempting and especially common because it may be more rewarding to the target (e.g., being thanked publicly may be more rewarding than being thanked privately).

The current work also supports the notion that costly signaling in social communication can be effective at conveying sincerity and overcoming listener skepticism (Chaudhry & Loewenstein, 2019; Chaudhry & Wald, 2022). Study 7 showed that reminded thankers were able to overcome the decrement in their genuine prosociality and likability by thanking in an especially elaborate, effortful way. Moreover, Study 8 showed that thankers spontaneously used this strategy when they were reminded to express gratitude. Thus, people readily use effective strategies to evade this threat. Declining to express gratitude entirely was seen as the worst response among the responses that we examined. In other words, the extra effort—that is, the cost—seems to be the best way to evade the threat of reminders to impressions of genuine prosociality.

An important practical implication of this research is that people should think twice before reminding others to behave prosocially. On one hand, these reminders will promote laudable prosocial behavior. On the other hand, they will blur the line between genuine altruism and the desire to conform to social pressure, interfering with liking and relationship building. It would be wise to know this trade-off and refrain from reminding others when liking and relationship building are the main goals of a given social interaction. One effective way to minimize the negative impact of reminders is to use them privately rather than publicly when possible. For example, reminding your child to thank your neighbor in their absence will make the child seem more genuinely prosocial and likable when they later express gratitude to the neighbor.

### Limitations and Future Directions

Our studies have limitations that open up interesting directions for future research. First, future research could explore moderators of the negative effects of reminders. A moderator of the impact of reminders on perceived social pressure, genuineness, and likability could be the presence (or absence) of social comparison. Many of our studies may have shown large negative effects of reminders

because participants simultaneously judged both a spontaneous expresser and a reminded expresser of a prosocial message (i.e., we manipulated being reminded within subjects). In one study, we manipulated being reminded between subjects, and we replicated the negative effects of the reminder. However, the reminder manipulation in that study was bold and direct (“... You owe me.”), and directness of the reminder may also moderate the reminder's impact on our measured variables. Specifically, the direct reminder may have resulted in a stronger negative impact on perceived social pressure (and thus perceived genuineness and likability) than if the reminder had been more subtle and indirect (e.g., “What did you think of the report?”; Lee & Pinker, 2010; Pinker et al., 2008), a hypothesis that can be tested in future work. It could be that in the absence of both a social comparison (between a spontaneous and a reminded prosocial expression) and a bold and direct reminder, the negative effects of the reminder on perceived social pressure, and so forth, vanish. Another possibility is that the status of the person doing the reminding matters. For example, the negative effect of reminders may be larger when they come from a supervisor than a subordinate—people may perceive a greater pressure to comply with the supervisor. In contrast, reminders that come from the self—for example, setting an alarm on your phone to remind you to say happy birthday to your friend—may reduce the negative effect of reminders or even reverse it because planned prosociality may signal stronger internal motivation for the behavior.

Second, future research should examine other negative effects of reminders. Previous research found that material incentives crowd out intrinsic motives, introduce concerns about appearing insincere, lead prosocial actors to enjoy the prosocial behavior less, and discourage later prosocial behaviors (Deci, 1971; Exley, 2018; Frey & Jegen, 2001; Lepper et al., 1973; Titmuss, 1970). Reminders may have the same negative effects on the reminded person, crowding out their own intrinsic motivation to be prosocial. In the most extreme case, reminders may lead actors to doubt that they themselves are genuinely prosocial. Another negative impact reminders may have is on the person responsible for the reminder: When rushing to thank in public, for example, the person who thanks first (and thus reminds everyone else to thank) deprives everyone else of the chance to appear as spontaneous and as genuine. This may arouse disapproval in the reminded thankers, who may start to dislike (or even want to punish) the person doing the reminding.

Third, future research could test whether and when reminder-based discounting of genuine prosociality is unjustified. It may be justified if reminded people would not have behaved prosocially without the reminder. However, in cases when only a few people or only one person can escape the reminder (e.g., when thanking first in a group), the decrement is bound to be misapplied. Examples include typing happy birthday in a group chat at 12:01 a.m. or posting a clapping emoji in a video call before someone finishes telling everyone about their accomplishment.

Future research could also explore when and why people engage in reminding others. It seems common to remind others to say thank you, happy birthday, and I love you—why? One possibility is that those doing the reminding do not anticipate the negative effect of their reminder on the perceived genuineness and likability of prosocial actors. Alternatively, they may be aware and think that reminding others may lead to more and higher quality prosocial behaviors that, in their mind, outweigh the negative effect of the



reminder. Whether the benefits of reminders outweigh their costs is, of course, an empirical question, the answer to which may depend on contextual factors such as whether liking and relationship building is the focus of the social interaction.

## References

- Algoe, S. B., Dwyer, P. C., Young, A., & Oveis, C. (2020). A new perspective on the social functions of emotions: Gratitude and the witnessing effect. *Journal of Personality and Social Psychology, 119*(1), 40–74. <https://doi.org/10.1037/pspi0000202>
- Algoe, S. B., & Zhaoyang, R. (2016). Positive psychology in context: Effects of expressing gratitude in ongoing relationships depend on perceptions of enactor responsiveness. *The Journal of Positive Psychology, 11*(4), 399–415. <https://doi.org/10.1080/17439760.2015.1117131>
- Alves, H., Koch, A., & Unkelbach, C. (2017). Why good is more alike than bad: Processing implications. *Trends in Cognitive Sciences, 21*(2), 69–79. <https://doi.org/10.1016/j.tics.2016.12.006>
- Barclay, P. (2004). Trustworthiness and competitive altruism can also solve the “tragedy of the commons”. *Evolution and Human Behavior, 25*(4), 209–220. <https://doi.org/10.1016/j.evolhumbehav.2004.04.002>
- Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is Stronger than Good. *Review of General Psychology, 5*(4), 323–370. <https://doi.org/10.1037/1089-2680.5.4.323>
- Beersma, B., & van Kleef, G. (2012). Why people gossip: An empirical analysis of social motives, antecedents, and consequences. *Journal of Applied Social Psychology, 42*(11), 2640–2670. <https://doi.org/10.1111/j.1559-1816.2012.00956.x>
- Berman, J. Z., Levine, E. E., Barasch, A., & Small, D. A. (2015). The braggart’s dilemma: On the social rewards and penalties of advertising prosocial behavior. *Journal of Marketing Research, 52*(1), 90–104. <https://doi.org/10.1509/jmr.14.0002>
- Berman, J. Z., & Silver, I. (2022). Prosocial behavior and reputation: When does doing good lead to looking good? *Current Opinion in Psychology, 43*, 102–107. <https://doi.org/10.1016/j.copsyc.2021.06.021>
- Bicchieri, C. (1990). Norms of cooperation. *Ethics, 100*(4), 838–861. <https://doi.org/10.1086/293237>
- Blanton, H., & Christie, C. (2003). Deviance regulation: A theory of action and identity. *Review of General Psychology, 7*(2), 115–149. <https://doi.org/10.1037/1089-2680.7.2.115>
- Chaudhry, S. J., & Loewenstein, G. (2019). Thanking, apologizing, bragging, and blaming: Responsibility exchange theory and the currency of communication. *Psychological Review, 126*(3), 313–344. <https://doi.org/10.1037/rev0000139>
- Chaudhry, S. J., & Wald, K. A. (2022). Overcoming listener skepticism: Costly signaling in communication increases perceived honesty. *Current Opinion in Psychology, 48*, Article 101442. <https://doi.org/10.1016/j.copsyc.2022.101442>
- Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology, 55*(1), 591–621. <https://doi.org/10.1146/annurev.psych.55.090902.142015>
- Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology, 58*(6), Article 1015. <https://doi.org/10.1037/0022-3514.58.6.1015>
- De Freitas, J., Thomas, K., DeScioli, P., & Pinker, S. (2019). Common knowledge, coordination, and strategic mentalizing in human social life. *Proceedings of the National Academy of Sciences, 116*(28), 13751–13758. <https://doi.org/10.1073/pnas.1905518116>
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*(1), 105–115. <https://doi.org/10.1037/h0030644>
- Douglas, B. D., Ewell, P. J., & Brauer, M. (2023). Data quality in online human-subjects research: Comparisons between MTurk, prolific, CloudResearch, qualtrics, and SONA. *PLOS ONE, 18*(3), Article e0279720. <https://doi.org/10.1371/journal.pone.0279720>
- Eastman, K. K. (1994). In the eyes of the beholder: An attributional approach to ingratiation and organizational citizenship behavior. *Academy of Management Journal, 37*(5), 1379–1391. <https://doi.org/10.2307/256678>
- Eisenberg, N., Fabes, R. A., Miller, P. A., Fultz, J., Shell, R., Mathy, R. M., & Reno, R. R. (1989). Relation of sympathy and personal distress to prosocial behavior: A multimethod study. *Journal of Personality and Social Psychology, 57*(1), 55–66. <https://doi.org/10.1037/0022-3514.57.1.55>
- Ellemers, N. (2018). Gender stereotypes. *Annual Review of Psychology, 69*(1), 275–298. <https://doi.org/10.1146/annurev-psych-122216-011719>
- Exley, C. (2018). Incentives for prosocial behavior: The role of reputations. *Management Science, 64*(5), 2460–2471. <https://doi.org/10.1287/mnsc.2016.2685>
- Forgas, J. P. (1998). On being happy and mistaken: Mood effects on the fundamental attribution error. *Journal of Personality and Social Psychology, 75*(2), 318–331. <https://doi.org/10.1037/0022-3514.75.2.318>
- Frey, B. S., & Jegen, R. (2001). Motivation crowding theory. *Journal of Economic Surveys, 15*(5), 589–611. <https://doi.org/10.1111/1467-6419.00150>
- Giner-Sorolla, R., Montoya, A. K., Aberson, C., Carpenter, T., Lewis, N. A., Bostyn, D. H., Conrique, B., Ng, B. W., Reifman, A., Schoemann, A. M., & Soderberg, C. K. (2023). *Power to detect what? considerations for planning and evaluating sample size*. PsyArXiv. <https://doi.org/10.31234/osf.io/rv3kw>
- Goette, L., & Stutzer, A. (2020). Blood donations and incentives: Evidence from a field experiment. *Journal of Economic Behavior & Organization, 170*, 52–74. <https://doi.org/10.1016/j.jebo.2019.11.021>
- Green, P., & MacLeod, C. J. (2016). SIMR: An R package for power analysis of generalized linear mixed models by simulation. *Methods in Ecology and Evolution, 7*(4), 493–498. <https://doi.org/10.1111/2041-210X.12504>
- Griskevicius, V., Tybur, J. M., & Van den Bergh, B. (2010). Going green to be seen: Status, reputation, and conspicuous conservation. *Journal of Personality and Social Psychology, 98*(3), 392–404. <https://doi.org/10.1037/a0017346>
- Han, Y., Liu, Y., & Loewenstein, G. (2022). Confusing context with character: Correspondence bias in economic interactions. *Management Science, 69*(2), 1070–1091. <https://doi.org/10.1287/mnsc.2022.4384>
- Hardy, C. L., & Van Vugt, M. (2006). Nice guys finish first: The competitive altruism hypothesis. *Personality and Social Psychology Bulletin, 32*(10), 1402–1413. <https://doi.org/10.1177/0146167206291006>
- Hareli, S., Moran-Amir, O., David, S., & Hess, U. (2013). Emotions as signals of normative conduct. *Cognition and Emotion, 27*(8), 1395–1404. <https://doi.org/10.1080/02699931.2013.791615>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (p. 507). Guilford Press.
- Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs, 85*(1), 4–40. <https://doi.org/10.1080/03637751.2017.1352100>
- Hopthrow, T., Hooper, N., Mahmood, L., Meier, B. P., & Weger, U. (2017). Mindfulness reduces the correspondence bias. *Quarterly Journal of Experimental Psychology, 70*(3), 351–360. <https://doi.org/10.1080/17470218.2016.1149498>
- Jonas, E., Martens, A., Kayser, D. N., Fritsche, I., Sullivan, D., & Greenberg, J. (2008). Focus theory of normative conduct and terror-management theory: The interactive impact of mortality salience and norm salience on social judgment. *Journal of Personality and Social Psychology, 95*(6), 1239–1251. <https://doi.org/10.1037/a0013593>
- Kafashan, S., Sparks, A., Griskevicius, V., & Barclay, P. (2014). Prosocial behavior and social status. In J. T. Cheng, J. L. Tracy, & C. Anderson (Eds.), *The psychology of social status* (pp. 139–158). Springer. [https://doi.org/10.1007/978-1-4939-0867-7\\_7](https://doi.org/10.1007/978-1-4939-0867-7_7)
- Kent, M. L., & Taylor, M. (2002). Toward a dialogic theory of public relations. *Public Relations Review, 28*(1), 21–37. [https://doi.org/10.1016/S0363-8111\(02\)00108-X](https://doi.org/10.1016/S0363-8111(02)00108-X)

- Koch, A., Alves, H., Krüger, T., & Unkelbach, C. (2016). A general valence asymmetry in similarity: Good is more alike than bad. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 42(8), 1171–1192. <https://doi.org/10.1037/xlm0000243>
- Koch, A., Dorough, A., Glöckner, A., & Imhoff, R. (2020). The ABC of society: Perceived similarity in agency/socioeconomic success and conservative-progressive beliefs increases intergroup cooperation. *Journal of Experimental Social Psychology*, 90, Article 103996. <https://doi.org/10.1016/j.jesp.2020.103996>
- Kraft-Todd, G. T., & Rand, D. G. (2019). Rare and costly prosocial behaviors are perceived as heroic. *Frontiers in Psychology*, 10, Article 234. <https://doi.org/10.3389/fpsyg.2019.00234>
- Lambert, N. M., & Fincham, F. D. (2011). Expressing gratitude to a partner leads to more relationship maintenance behavior. *Emotion*, 11(1), 52–60. <https://doi.org/10.1037/a0021557>
- Lee, J. J., & Pinker, S. (2010). Rationales for indirect speech: The theory of the strategic speaker. *Psychological Review*, 117(3), 785–807. <https://doi.org/10.1037/a0019688>
- Leong, J. L. T., Chen, S. X., Fung, H. H. L., Bond, M. H., Siu, N. Y. F., & Zhu, J. Y. (2020). Is gratitude always beneficial to interpersonal relationships? The interplay of grateful disposition, grateful mood, and grateful expression among married couples. *Personality and Social Psychology Bulletin*, 46(1), 64–78. <https://doi.org/10.1177/0146167219842868>
- Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the "overjustification" hypothesis. *Journal of Personality and Social Psychology*, 28(1), 129–137. <https://doi.org/10.1037/h0035519>
- Lin-Healy, F., & Small, D. A. (2013). Nice guys finish last and guys in last are nice: The clash between doing well and doing good. *Social Psychological and Personality Science*, 4(6), 692–698. <https://doi.org/10.1177/1948550613476308>
- Luchtenberg, M., Maeckelberghe, E., Locock, L., Powell, L., & Verhagen, A. A. E. (2015). Young people's experiences of participation in clinical trials: Reasons for taking part. *The American Journal of Bioethics*, 15(11), 3–13. <https://doi.org/10.1080/15265161.2015.1088974>
- McCabe, C. (2004). Nurse–patient communication: An exploration of patients' experiences. *Journal of Clinical Nursing*, 13(1), 41–49. <https://doi.org/10.1111/j.1365-2702.2004.00817.x>
- Miyamoto, Y., & Kitayama, S. (2002). Cultural variation in correspondence bias: The critical role of attitude diagnosticity of socially constrained behavior. *Journal of Personality and Social Psychology*, 83(5), 1239–1248. <https://doi.org/10.1037/0022-3514.83.5.1239>
- Newman, G. E., & Cain, D. M. (2014). Tainted altruism: When doing some good is evaluated as worse than doing no good at all. *Psychological Science*, 25(3), 648–655. <https://doi.org/10.1177/0956797613504785>
- Ohtsubo, Y., & Watanabe, E. (2009). Do sincere apologies need to be costly? Test of a costly signaling model of apology. *Evolution and Human Behavior*, 30(2), 114–123. <https://doi.org/10.1016/j.evolhumbehav.2008.09.004>
- Ouwerkerk, J., Kerr, N., Gallucci, M., & Lange, P. (2005). Avoiding the social death penalty: Ostracism and cooperation in social dilemmas. In K. D. Williams, J. P. Forgas, & W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 321–332). Psychology Press.
- Paulus, M. (2014). The emergence of prosocial behavior: Why do infants and toddlers help, comfort, and share? *Child Development Perspectives*, 8(2), 77–81. <https://doi.org/10.1111/cdep.12066>
- Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology*, 70, 153–163. <https://doi.org/10.1016/j.jesp.2017.01.006>
- Pinker, S., Nowak, M. A., & Lee, J. J. (2008). The logic of indirect speech. *Proceedings of the National Academy of Sciences of the United States of America*, 105(3), 833–838. <https://doi.org/10.1073/pnas.0707192105>
- Reno, R., Cialdini, R., & Kallgren, C. (1993). The Transsituational Influence of Social Norms. *Journal of Personality and Social Psychology*, 64(1), 104–112. <https://doi.org/10.1037/0022-3514.64.1.104>
- Schumann, K., McGregor, I., Nash, K. A., & Ross, M. (2014). Religious magnanimity: Reminding people of their religious belief system reduces hostility after threat. *Journal of Personality and Social Psychology*, 107(3), 432–453. <https://doi.org/10.1037/a0036739>
- Sezer, O., Gino, F., & Norton, M. I. (2018). Humblebragging: A distinct-and ineffective-self-presentation strategy. *Journal of Personality and Social Psychology*, 114(1), 52–74. <https://doi.org/10.1037/pspi0000108>
- Shaw, A., & Olson, K. R. (2013). All inequality is not equal: Children correct inequalities using resource value. *Frontiers in Psychology*, 4, Article 393. <https://doi.org/10.3389/fpsyg.2013.00393>
- Sheldon, K. M., & Yu, S. (2022). Methods of gratitude expression and their effects upon well-being: Texting may be just as rewarding as and less risky than face-to-face. *The Journal of Positive Psychology*, 17(5), 690–700. <https://doi.org/10.1080/17439760.2021.1913639>
- Sheridan, L., & Young, M. (2017). Genuine conversation: The enabler in good mentoring of pre-service teachers. *Teachers and Teaching: Theory and Practice*, 23(6), 658–673. <https://doi.org/10.1080/13540602.2016.1218327>
- Silver, I., Kelly, B. A., & Small, D. A. (2021). Selfless first movers and self-interested followers: Order of entry signals purity of motive in pursuit of the greater good. *Journal of Consumer Psychology*, 31(3), 501–517. <https://doi.org/10.1002/jcpy.1228>
- Singh, G. K. (2017). *Appreciation and well being: Proposing active constructive complimenting (ACC) and active constructive accepting (ACA) to improve appreciation*. <https://repository.upenn.edu/handle/20.500.14332/38752>
- Spence, A. M. (1973). Time and communication in economic and social interaction. *The Quarterly Journal of Economics*, 87(4), 651–660. <https://doi.org/10.2307/1882035>
- Steinfeldt, J., Zakrajsek, R., Carter, H., & Steinfeldt, M. (2011). Conformity to gender norms among female student-athletes: Implications for body image. *Psychology of Men & Masculinity*, 12(4), 401–416. <https://doi.org/10.1037/a0023634>
- Sylwester, K., & Roberts, G. (2010). Cooperators benefit through reputation-based partner choice in economic games. *Biology Letters*, 6(5), 659–662. <https://doi.org/10.1098/rsbl.2010.0209>
- Tankard, M. E., & Paluck, E. L. (2016). Norm perception as a vehicle for social change: Vehicle for social change. *Social Issues and Policy Review*, 10(1), 181–211. <https://doi.org/10.1111/sipr.12022>
- Titmuss, R. M. (1970). *The gift relationship*. Allen & Unwin.
- Trope, Y., & Gaunt, R. (2000). Processing alternative explanations of behavior: Correction or integration? *Journal of Personality and Social Psychology*, 79(3), 344–354. <https://doi.org/10.1037/0022-3514.79.3.344>
- Unkelbach, C., & Speckmann, F. (2021). Mere repetition increases belief in factually true COVID-19-related information. *Journal of Applied Research in Memory and Cognition*, 10(2), 241–247. <https://doi.org/10.1016/j.jarmac.2021.02.001>
- U.S. Census Bureau. (n.d.). *United States [data table]*. Profile. Retrieved from [https://data.census.gov/profile/United\\_States?g=010XX00US](https://data.census.gov/profile/United_States?g=010XX00US)
- Van Lange, P. A. M., Ouwerkerk, J. W., & Tazelaar, M. J. A. (2002). How to overcome the detrimental effects of noise in social interaction: The benefits of generosity. *Journal of Personality and Social Psychology*, 82(5), 768–780. <https://doi.org/10.1037/0022-3514.82.5.768>
- Visserman, M. L., Righetti, F., Impett, E. A., Keltner, D., & Van Lange, P. A. M. (2018). It's the motive that counts: Perceived sacrifice motives and gratitude in romantic relationships. *Emotion*, 18(5), 625–637. <https://doi.org/10.1037/emo0000344>
- Walmsley, J., & O'Madagain, C. (2020). The worst-motive fallacy: A negativity bias in motive attribution. *Psychological Science*, 31(11), 1430–1438. <https://doi.org/10.1177/0956797620954492>

- Wanders, F., Homan, A. C., van Vianen, A. E. M., Rahal, R.-M., & van Kleef, G. A. (2021). How norm violators rise and fall in the eyes of others: The role of sanctions. *PLOS ONE*, *16*(7), Article e0254574. <https://doi.org/10.1371/journal.pone.0254574>
- Warneken, F. (2015). Precocious prosociality: Why do young children help? *Child Development Perspectives*, *9*(1), 1–6. <https://doi.org/10.1111/cde.p.12101>
- Yzerbyt, V., Muller, D., Batailler, C., & Judd, C. M. (2018). New recommendations for testing indirect effects in mediational models: The need to report and test component paths. *Journal of Personality and Social Psychology*, *115*(6), 929–943. <https://doi.org/10.1037/pspa0000132>
- Zahavi, A. (1975). Mate selection—a selection for a handicap. *Journal of Theoretical Biology*, *53*(1), 205–214. [https://doi.org/10.1016/0022-5193\(75\)90111-3](https://doi.org/10.1016/0022-5193(75)90111-3)
- Zheng, L., Wang, Q., Cheng, X., Li, L., Yang, G., Sun, L., Ling, X., & Guo, X. (2016). Perceived reputation of others modulates empathic neural responses. *Experimental Brain Research*, *234*(1), 125–132. <https://doi.org/10.1007/s00221-015-4434-2>

Received January 3, 2023

Revision received September 15, 2023

Accepted September 23, 2023 ■