

Glad to Help Out: Grateful People Are More Likely to Engage in Costly Prosocial Action

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Gratitude is not without its critics. Some have argued that it encourages complacency, thereby discouraging efforts to challenge the status quo. Although gratitude has been shown to promote prosocial behavior, most studies have focused on actions with relatively minor costs. Gratitude's impact on *costly* prosocial actions aimed at advancing the greater good remains underexplored. To address this gap, we analyzed data from a U.S. nationally representative sample (Study 1; $N = 2,016$), a longitudinal study of nationally representative samples across 22 countries (Study 2; $N = 207,919$), and a field study that surveyed individuals at blood drives and flu shot clinics (Study 3; $N = 396$). These studies yielded robust evidence that dispositionally grateful individuals are more likely to engage in costly prosocial actions. Two experiments that manipulated feelings of gratitude—one with a U.S. Prolific sample (Study 4a; $N = 360$) and one with a U.S. college student sample (Study 4b; $N = 362$)—did not result in a similar effect for state gratitude (although those who scored higher on trait gratitude in these experiments reported greater intentions to engage in costly prosocial actions). Together, our findings challenge claims that gratitude reinforces the status quo and undermines efforts to bring about societal change. Instead, we show that more grateful people are more likely to take on the hard, costly work of advancing the greater good.

Keywords: gratitude, altruism, costly prosocial behavior, greater good

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All you have to do is to generate, within yourself, the good feelings associated with gratitude, and then bask in its warm, comforting glow. If there is any loving involved in this, it is self-love, and the current hoopla around gratitude is a celebration of onanism.

—Barbara Ehrenreich, *The Selfish Side of Gratitude*

The real conservatism of positive psychology lies in its attachment to the status quo, with all its inequalities and abuses of power.

—Barbara Ehrenreich, *Bright-Sided: How the Relentless Promotion of Positive Thinking Has Undermined America*

Among the most reliable findings to emerge from over a quarter century of research on positive psychology is that “gratitude is good” (with apologies to *Wall Street's* Gordon Gekko). It is undeniably good to those who experience it, as individuals who are dispositionally prone to feeling grateful report more positive affect, greater well-being, less envy, and more resilience in the face of trauma (Emmons & Mishra, 2011; Fredrickson et al., 2003; McCullough et al., 2002; Wood et al., 2010). And those who are *induced* to consider what they have to be grateful for tend to be

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happier, feel more connected to others, sleep better, and need fewer visits to the doctor (Chaplin et al., 2019; Emmons & McCullough, 2003).

Gratitude also appears to be good for those in the grateful individual's orbit—and to society at large. That is, individuals who are led to experience gratitude tend to be more generous to others, both to those to whom they are grateful and to others they simply encounter (Bartlett & DeSteno, 2006; Bartlett et al., 2012). Indeed, a meta-analysis of 91 studies reported in 65 empirical papers found that gratitude is reliably related to engagement in prosocial action (Ma et al., 2017). It seems, then, that feeling grateful makes it easier for people to live up to their "best selves." It makes it easier to be happy, healthy, socially connected, and generous of spirit. It also makes it easier for people to forgo tempting but lesser rewards in the moment in order to achieve greater rewards down the road—that is, to delay gratification (DeSteno et al., 2014; Dickens & DeSteno, 2016). In quite a number of ways, then, the experience of gratitude makes it easier for people to achieve the ancient Greeks' goal of *ethike arete*, or virtue of character.

So is there anything *not* to like about gratitude? The epigraphs above capture a not-uncommon concern that gratitude might make people satisfied and complacent and, therefore, blind to various societal problems that surround them. This concern sounds plausible, in part because it is easy to imagine that feeling grateful can make a person feel content, and contentment might make it hard to summon the energy necessary to combat injustice or exert much effort on behalf of others. Echoing Ehrenreich's critique, Ng et al. (2017) argued that gratitude serves a social alignment function, motivating individuals to prioritize social harmony and follow social norms. Indeed, they found that their gratitude inductions can increase obedience to authority figures (Ng et al., 2017), even when doing so entails morally troubling actions, such as grinding more worms in a grinder (Tong et al., 2021). Other researchers have found that induced gratitude can increase willingness to engage in dishonest behavior to protect benefactors (R. Zhu et al., 2020). In a similar vein, both Ksenofontov and Becker (2020) and Wood et al. (2016) argued that feelings of gratitude stifle prosocial actions aimed at securing just outcomes, at least for vulnerable groups, ultimately serving to maintain the status quo. Taken together, these perspectives raise the possibility that gratitude's capacity to promote social alignment may come at the expense of the desire to engage in costly action on behalf of the greater good.

As plausible as it might seem that gratitude can serve to suppress the motivation to "man the barricades" and engage in costly action to advance the greater good, we think the worry is likely misplaced or overblown. For one thing, it is hard to be cynical and grateful at the same time, and few things undermine the urge to engage in social action more than a cynical outlook (Zaki, 2024). Second, as the literature cited above suggests, there is a fair amount of work showing that gratitude promotes prosocial action. Grateful individuals donate more to charity (Paramita et al., 2020; Yost-Dubrow & Dunham, 2018) and are more willing to mete out third-party punishment toward those who have transgressed against others (Vayness et al., 2020). And in the meta-analysis cited earlier, although roughly half of the studies reviewed focused on prosocial actions directed at individuals, a substantial number reported enhanced prosocial actions directed at groups (Ma et al., 2017).

The bulk of the prosocial actions that gratitude has been shown to promote, however, cannot be categorized as terribly costly. Many studies simply measure the amount of money participants are willing

to give to another person or a cause, typically from a small sum of money they have just received (which may therefore be seen by some as an easy-come, easy-go bonus). When longitudinal designs have been used, they have often relied on self-reported intentions or been limited to narrow populations or cultural contexts (e.g., Bono et al., 2019; Li et al., 2023; Yang et al., 2021; N. Zhu et al., 2024). It therefore remains an open question whether gratitude promotes costly prosocial action or whether it inhibits it, as some have argued. We conducted the analyses and studies reported here in an effort to settle the matter.

Note that a number of theoretical accounts of the nature and functions of gratitude strongly imply that it should typically promote rather than impede social action. Like emotions generally, gratitude is an adaptive response that organizes cognition, motivation, and behavior to address challenges and opportunities in social life (Campos et al., 1989; Frijda, 1986; Keltner & Gross, 1999; Lazarus, 1991). Gratitude has been described as "a positive emotion that typically flows from the perception that one has benefited from the costly, intentional, voluntary action of another person" (McCullough et al., 2008, p. 281). It thus belongs to the broader group of self-transcendent emotions (e.g., awe, compassion) that differ from other positive emotions in that it orients attention away from the self and toward the welfare of others (Stellar et al., 2017). Among the functions of gratitude that McCullough et al. (2001) laid out in their influential treatise on gratitude is its role as a "moral motive," encouraging grateful individuals to act prosocially toward benefactors and to others more generally. Algoe (2012), in her "find, remind, and bind" account of gratitude and social relationships, posited that gratitude activates communal relationship norms that can serve to promote prosocial action. Along similar lines, Stellar et al. (2017) categorized gratitude as an emotion that motivates actions that address social challenges, such as caretaking, cooperation, and group coordination.

Importantly, these theoretical accounts address both momentary and more enduring feelings of gratitude. That is, gratitude has been studied as both a stable individual difference and as a momentary emotional response. At the trait level, gratitude reflects a dispositional tendency to experience gratitude across time and context, whereas at the state level, it reflects a transient grateful response to a specific action, outcome, or person (McGuire et al., 2020; Wood et al., 2008). Distinguishing between trait and state gratitude is important because they may have different implications for whether, when, and how gratitude translates into prosocial action.

Study 1: Secondary Data Analysis of a Nationally Representative Data Set

To examine the relationship between gratitude and engagement in costly prosocial behavior, we analyzed responses to the 2017 Inspirational Media Survey, which was administered by the Public Religion Research Institute (PRRI) in collaboration with researchers at Florida State University. PRRI is a nonprofit, nonpartisan organization that conducts research at the intersection of religion, culture, and politics. The 2017 Inspirational Media Survey features a large, nationally representative sample of U.S. adults. The data were collected through the AmeriSpeak panel, a probability-based platform managed by the National Opinion Research Center at the University of Chicago. Our analysis focused on survey questions related to gratitude and costly prosocial behaviors.

Method

Participants

The sample consisted of 2,016 adults ($M_{\text{age}} = 52.74$, $SD_{\text{age}} = 16.26$) drawn from a random subset of the 3,006 individuals who participated in an earlier (2016) nationally representative AmeriSpeak probability-based panel, also run by the National Opinion Research Center. Most participants ($n = 1,784$) completed the survey online in a self-administered format, whereas others ($n = 232$) had discussions over the phone with professional interviewers. The sample consisted of 57.4% female and 42.5% male respondents, with 72.8% identifying as White, non-Hispanic; 11.9% as Black, non-Hispanic; and 7.9% as Hispanic; 10.2% of the participants self-identified as agnostic or atheist, and 80.8% identified with a particular religion. These percentages are consistent with national trends in the United States reported by the Pew Research Center's Religious Landscape Study (Pew Research Center, 2015) and the Pew 2021 National Public Opinion Reference Survey (Pew Research Center, 2021). Administration of the 2017 Inspirational Media Survey was approved by the Institutional Review Board at Florida State University (HSC No. 2015.16301).

Procedure and Materials

Data collection took place between February 28 and March 29, 2017, in English or Spanish depending on the respondent's preferred language. Our analysis focused on survey questions related to gratitude and participants' past prosocial behavior. The latter involved questions about the frequency with which the participants engaged in a number of different prosocial actions that varied in how costly they were to perform (see Table 1). Specifically, they were asked, "Thinking about the past month. . . . Regardless of whether this is something you regularly do, please say how often you have done any of the following in just the past month." Response options were as follows: "Have not done this in the past month," "Once in the past month," "A couple times in the past month," "Once a week," "A few times a week," "Nearly every day," and "Don't know/Refused." "Don't know/Refused" responses were treated as missing data, with the result that participants' responses corresponded to a 6-point scale (1 = *have not done this in the past month* to 6 = *nearly every day*).

Participants were also asked about their voting behavior, another type of prosocial action,¹ on a different scale. Specifically, they were told, "A lot of people have been telling us they didn't get a chance to vote in this election or they chose not to vote," and were then asked, "How about you . . . did things come up that kept you from voting, did you CHOOSE not to vote, OR did you happen to vote?" Responses were coded as follows: "Yes, voted," "No, didn't get a chance to vote," "No, chose not to vote," "Not eligible to vote/not registered to vote," "Other," and "Don't know/Refused." "Don't know/Refused" responses were treated as missing data, and all other responses were dichotomized, with "Yes, voted" coded as 1 and all other responses as 0.

Participants then answered a series of questions about themselves, presented in a randomized order for each participant. Included were two items adapted from the Gratitude Questionnaire Short-Form (GQ-6; McCullough et al., 2002): (1) "If I had to list everything I felt grateful for, it would be a very long list" and (2) "I am grateful to a wide variety of people." Participants were asked how well each of those statements described them, using the following scale:

"Exactly," "Very well," "Somewhat well," "Not too well," "Not at all well," and "Don't know/Refused." "Don't know/Refused" responses ($n = 22$) were coded as missing data. Responses to both gratitude items were recoded to create a 5-point scale, with higher scores corresponding to stronger agreement (i.e., more grateful).

Transparency and Openness

We came across the data set through the Cornell Roper Center archive, where this study is listed as part of a catalog of public opinion surveys. However, the data set is not publicly available and was obtained through a direct request to one of the study's principal investigators. Information about each question in the survey can be found at <https://doi.org/10.25940/ROPER-31114687>. Analyses were conducted in R (Version 4.4.1; R Core Team, 2024) using the *broom* (1.0.7; Robinson et al., 2025), *cocor* (1.1.4; Diedenhofen & Musch, 2015), *effectsize* (1.0.1; Ben-Shachar et al., 2025), *dplyr* (1.1.4; Wickham, François, et al., 2023), *haven* (2.5.5; Wickham, Miller, et al., 2023), *lme4* (0.9.40; Zeileis & Hothorn, 2022), and *psych* (2.4.6.26; Revelle, 2024) packages. Our analysis script is available on the Open Science Framework (OSF; <https://osf.io/c3ezr>). This study was not preregistered.

Results

We averaged participants' responses to the two gratitude items (Cronbach's $\alpha = .78$) to create our measure of dispositional gratitude—the independent variable. As seen in Table 1, participants' level of dispositional gratitude was significantly correlated with their reported engagement in each of the 12 prosocial actions.

To provide an intuitive grasp of the correlation between participants' dispositional gratitude and the measures of prosocial action, we translated the means in Table 1 to the specific values on the prosocial action response scale (2 = *once in the past month*, 4 = *once a week*, etc.). The mean rating of participants who scored in the bottom quartile of the GQ-6 was 2.70, or an average response of between once and a couple of times a month; the mean rating of participants who scored in the top quartile was 3.33, or an average response of between once and twice a week.²

To be fair, those who worry that gratitude might undermine people's willingness to engage in prosocial action are mainly concerned about whether it does so for *costly* prosocial action. And "thanking a stranger" or "paying a compliment to a coworker or colleague" can hardly be considered very costly. Notably, however, there was a significant correlation between dispositional gratitude and the likelihood of engaging in *every one* of the 12 behaviors in the survey, including such activities as "volunteering at a charity, religious organization, or school," "donating to a church or other religious congregation or charity," and "listening to someone talk

¹ People cast votes for all sorts of reasons, and some of them, such as simple bandwagon effects, may not be particularly prosocial. Moreover, some people *refrain* from voting to advance the common good—that is, as an act of protest. However, Bali et al. (2020) found that prosocial motives were reported as the most important motives for voter turnout (more than 60% of responses), whereas selfish motives were relatively uncommon (15%), and selfishness actually predicted *reduced* turnout. On balance, then, it seems safe to consider voting as a prosocial behavior, albeit a somewhat "noisy" one.

² Roughly the same difference was observed when we compared the top and bottom quintiles, or the top and bottom tertiles.

Table 1

Mean Engagement in Prosocial Behaviors and the Correlation Between Gratitude and Engagement, Ordered by Independent Ratings of Costliness

Prosocial behavior	<i>M</i> (<i>SD</i>) engagement	Pearson's correlations between gratitude and specific prosocial behaviors	<i>M</i> (<i>SD</i>) independent rating of costliness
Loaning a personal possession to someone not a family member	1.78 (1.10)	$r(1991) = .090, p < .001, 95\% \text{ CI } [.05, .13]$	4.31 (1.63)
Volunteering at a charity, religious organization, or school	2.04 (1.49)	$r(1995) = .173, p < .001, 95\% \text{ CI } [.13, .22]$	4.02 (1.70)
Donating to a church or other religious congregation or charity	2.10 (1.30)	$r(1991) = .174, p < .001, 95\% \text{ CI } [.13, .22]$	3.98 (1.59)
Doing a personal favor for a friend or coworker	2.85 (1.39)	$r(1993) = .199, p < .001, 95\% \text{ CI } [.16, .24]$	3.08 (1.51)
Sending a personal note expressing support	2.09 (1.32)	$r(1989) = .180, p < .001, 95\% \text{ CI } [.14, .22]$	2.88 (1.32)
Listening to someone talk about a personal problem	3.98 (1.48)	$r(1995) = .209, p < .001, 95\% \text{ CI } [.17, .25]$	2.75 (1.55)
Allowing someone to go ahead of you in line	3.06 (1.49)	$r(1995) = .112, p < .001, 95\% \text{ CI } [.07, .16]$	2.22 (1.43)
Praying for someone not a close friend or family member	3.20 (1.90)	$r(1994) = .320, p < .001, 95\% \text{ CI } [.28, .36]$	2.12 (1.53)
Paying a compliment to a colleague or coworker	3.54 (1.67)	$r(1988) = .236, p < .001, 95\% \text{ CI } [.19, .28]$	1.78 (1.22)
Thanking a stranger	4.42 (1.49)	$r(1994) = .181, p < .001, 95\% \text{ CI } [.14, .22]$	1.53 (1.12)
Holding the door or elevator for a stranger	4.26 (1.55)	$r(1998) = .118, p < .001, 95\% \text{ CI } [.08, .16]$	1.39 (0.92)
Voting in the 2016 U.S. Presidential Election	—	$r(1996) = .058, p = .009, 95\% \text{ CI } [.02, .10]$	—

Note. Dashes indicate that data are not available. CI = confidence interval.

about a personal problem,” all of which certainly incur a cost. Nevertheless, is the association between gratitude and prosocial action greater for lower effort prosocial actions than more costly ones? To find out, we recruited a group of participants ($n = 51$) on Prolific to rate the costliness of each prosocial action other than voting (voting behavior was assessed on a different scale than the other items). Specifically, we asked these participants to rate how much of a burden each action would be to perform, in terms of the amount of effort, time, and personal resources it would require, as well as the stress or potential awkwardness it might elicit on a 1 (*not at all costly*) to 7 (*extremely costly*) Likert scale. We then compared the correlation between gratitude and prosocial engagement among the five least costly ($M = 0.19$; $SD = 0.09$) and five most costly actions ($M = 0.16$; $SD = 0.04$) and found no difference between the two, $t(8) = 0.660, p = .528, 95\% \text{ CI } [-0.07, 0.13]$. (This analysis necessarily excluded the item with the median costliness rating: “listening to someone talk about a personal problem.”)

To be sure, perceived costliness is not the only plausible dimension along which these behaviors might be organized. To examine whether the prosocial behaviors assessed in Study 1 clustered along dimensions other than costliness, we conducted an exploratory factor analysis on the 11 prosocial actions. An inspection of the factor loadings revealed two clear factors of five behaviors each: one centered around spontaneity (thanking a stranger, holding the door open, listening to someone talk, letting someone ahead in line, complimenting someone) and the other around intentionality (volunteering, donating, loaning, sending a personal note, praying). One prosocial action (agreed to do a personal favor) loaded comparably on both factors and was therefore excluded from further analyses. Notably, this factor structure substantially overlapped with the independent ratings of perceived costliness: Items loading on the “spontaneous” factor tended to be rated as less costly, and items loading on the “intentional” factor tended to be rated as more costly. Eight of the 10 items were classified similarly by the factor analysis and by (a median split of) costliness; only praying for someone and listening to someone talk diverged. Next, we examined whether the correlation between gratitude and prosocial behavior differed across the two factors by comparing the mean gratitude and prosocial action correlations for each set of behaviors. The average correlation did not differ between the

spontaneous prosocial behaviors ($M = .17, SD = 0.06$) and intentional prosocial behaviors ($M = .19, SD = 0.08$), $t(8) = -0.407, p = .695, 95\% \text{ CI } [-0.12, 0.08]$. In other words, trait gratitude was similarly associated with engagement for both spontaneous and intentional prosocial behaviors.

The dichotomous nature of the voting measure allowed us to compute a statistic that provides an intuitive feel for the strength of the association between gratitude and voting. That is, a one-unit increase in our aggregate gratitude score is associated with a 19% increase in the odds of voting, $\chi^2(1, n = 1997) = 16.215, p < .001, OR = 1.191, 95\% \text{ CI } [1.04, 1.36]$. Thus, when it comes to all of these prosocial actions, including voting, dispositional gratitude is clearly associated with engaging in more prosocial action, not less.

A reviewer of a previous version of our article encouraged us to examine whether the association between gratitude and prosocial action might be moderated by other variables tapped by measures administered in the survey commissioned by the PRRI. Because the PRRI is interested in the connections between religion, culture, and politics, we conducted a test of the robustness of our findings by examining whether the correlation between dispositional gratitude and prosocial action holds for both secular and religious individuals. Accordingly, we reran our analysis on the data from two subsets of participants: those who identified as atheist or agnostic and those who identified as religious (this analysis was not preregistered). Regardless of the costliness of each behavior, gratitude remained positively correlated with prosocial action for both atheists/agnostics and religious individuals for all items, except “praying for someone,” which was not statistically significant for atheists/agnostics. To test whether the strength of any of these correlations differed between secular and religious individuals, we conducted a Fisher's z test for independent correlations. These tests revealed no statistically significant differences for any item other than praying for someone, $z = -3.010, p < .001, Zou's 95\% \text{ CI } [-0.36, -0.07]$. The latter is unsurprising given that praying for someone is itself a behavior closely tied to religious identity.

It is important to note that in this and all subsequent studies, we controlled for standard demographic variables (e.g., age, gender, income, and education) and found that the association between trait gratitude and prosocial action remained statistically significant.

Moreover, we also replicated these effects in a supplementary, preregistered study designed to further assess the relationship between gratitude and prosocial action aimed at bringing about social or political change (see [Supplemental Study 1](#)).

Study 2: Analysis of Nationally Representative Samples in 22 Countries

Study 1 established that people who are more dispositionally prone to feeling grateful are more likely to engage in prosocial action, not less. They are more likely to do so, furthermore, even for the more costly prosocial actions examined in that survey. Does this pattern generalize beyond the United States? To find out, we analyzed data from the Global Flourishing Study (GFS), an ongoing 5-year, cross-national, longitudinal study of individuals in 20+ countries conducted by Gallup in collaboration with Harvard and Baylor Universities.

Method

Participants

The sample consisted of 207,919 adults ($M_{\text{age}} = 45.79$, $SD_{\text{age}} = 17.60$), 52.6% female and 47.0% male. Additional information about the sample's demographics can be found in the GFS's study profile article at <https://nature.com/articles/s44220-025-00423-5> (VanderWeele et al., 2025). The study protocol for the GFS was approved by the Institutional Review Boards of Gallup and Baylor University. We also obtained Institutional Review Board approval from Cornell University (IRB0148802) to access the restricted-use version of the GFS data set.

Procedure and Materials

Participants in the GFS were recruited by Gallup in collaboration with their partners in each country. The goal was to enroll a nationally representative longitudinal panel in each country to be surveyed annually over 5 years. In most countries, recruitment involved face-to-face or telephone contact to enroll a representative panel of adults aged 18 and over. In a subset of countries, web panels were used as a supplement or replacement for in-person recruitment. Surveys were conducted in 36 languages. Respondents were initially contacted through multiple channels (e.g., phone, email, WhatsApp), with repeated contact attempts to maximize response rates. Participants completed the study either online in a self-administered format, by telephone, or through face-to-face interviews with trained interviewers. We analyzed data from Wave 1 (Year 1, collected between 2022 and 2023) and Wave 2 (Year 2, collected in 2024), involving nationally representative samples from 22 countries and Hong Kong (listed as a Special Administrative Region by Gallup; see [Figure 1](#) for the full list of countries). For more information about methodological procedures and validation efforts, see [Padgett et al. \(2025\)](#) and [Ritter et al. \(2025\)](#).

Our analyses focused on participants' responses to questions about the frequency with which they engaged in three different prosocial actions across two waves of data. Each question began with the prompt, "In the past month, have you ..." followed by each of the following prosocial actions: "donated money to a charity," "volunteered your time to an organization," or "helped a stranger or someone you didn't know who needed help." Responses were

recorded by the GFS as either "Yes," "No," "Saw, Skipped," "Don't know," or "Refused." We recoded the responses such that "No" was coded as 0, "Yes" as 1, and all other responses as missing. As preregistered, we first examined each of the three prosocial behaviors separately. Next, following our analysis plan, we created a composite score by averaging the first two items (donating, volunteering), anticipating that this would be consistent with our prior work where these items demonstrated high internal consistency (Cronbach's $\alpha = .84-.88$). However, internal consistency was modest, with the highest observed interitem correlation across any two- or three-item combination reaching .53. Given the weak interitem correlations, we did not aggregate the items and instead analyzed each behavior separately.

Included in the GFS was one item from the GQ-6 (McCullough et al., 2002) assessing trait gratitude: (1) "If I had to list everything I felt grateful for, it would be a very long list." Responses were given on a scale from 0 (*strongly disagree*) to 10 (*strongly agree*).

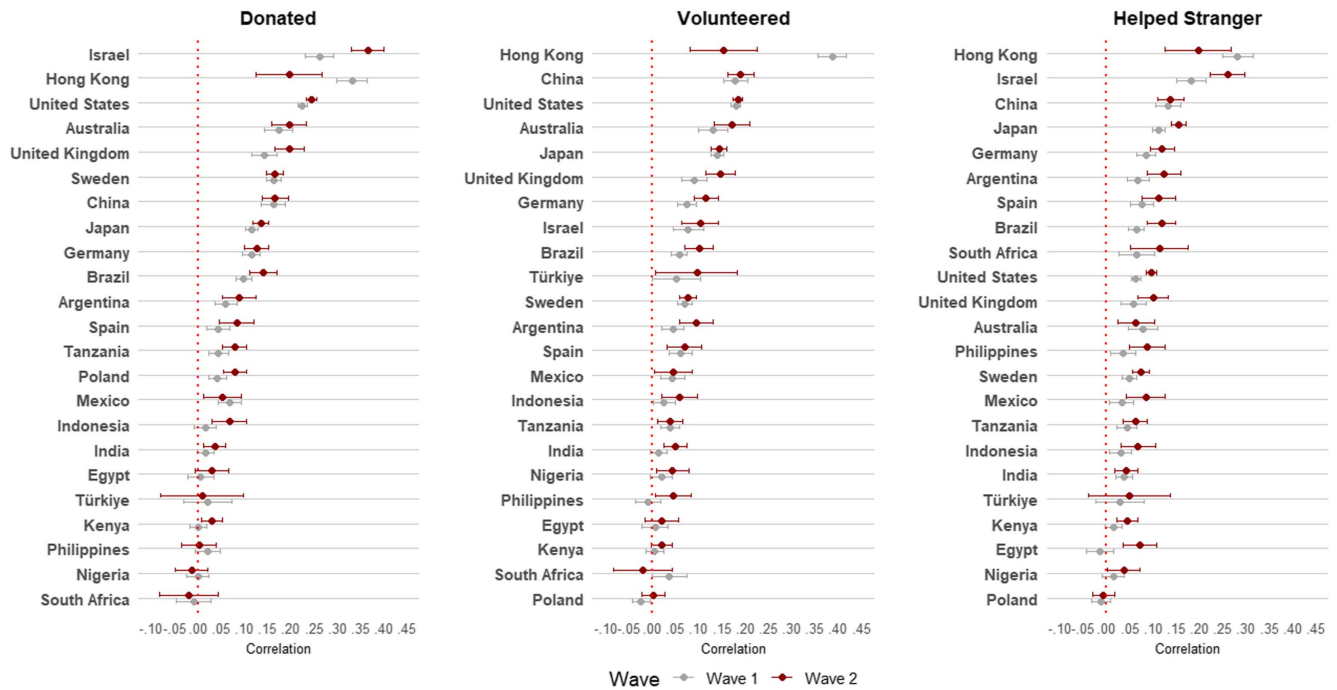
Transparency and Openness

Researchers can access the GFS data at <https://cos.io/gfs>. The nonrestricted-use data set (Johnson et al., 2025) for Wave 1 and Wave 2 became publicly available without preregistration on April 8, 2026. Analyses were conducted in R (Version 4.4.1; R Core Team, 2024) using the *broom.mixed* (0.2.9.6; Bolker et al., 2024), *dplyr* (1.1.4; Wickham, François, et al., 2023), *effectsize* (1.0.1; Ben-Shachar et al., 2025), *forcats* (1.0.0; Wickham, 2023), *haven* (2.5.4; Wickham, Miller, et al., 2023), *lme4* (1.1.35.5; Bates et al., 2015), *psych* (2.4.6.26; Revelle, 2024), *purrr* (1.0.2; Wickham & Henry, 2023), and *tidyr* (1.3.1; Wickham et al., 2024) packages. The figure was created in R (Version 4.4.1; R Core Team, 2024) using the *ggplot2* (3.5.1; Wickham, 2016) and *patchwork* (1.3.0; Pedersen, 2024) packages. ChatGPT (OpenAI, 2026) was used to assist in data wrangling, code debugging, and data visualization in R. All code was reviewed and checked by two members of the research team for accuracy. Our analysis script is available on the OSF (<https://osf.io/brsjg>). The hypotheses and analytic approaches were preregistered on the GFS Registry (<https://osf.io/rdw8j>) prior to receiving the data from the GFS's data stewards at the Center for Open Science.

Results

To examine whether individuals higher in gratitude are more likely to report engaging in costly prosocial behavior, we calculated point-biserial correlations between gratitude and each measure of costly prosocial behavior (i.e., donating, volunteering, and helping a stranger) separately at each wave. Trait gratitude was significantly positively correlated with each measure of prosocial behavior in both waves. At Wave 1, there was a positive correlation between gratitude and donating, $r(203,920) = .163$, $p < .001$, 95% CI [0.16, 0.17]; volunteering, $r(203,889) = .134$, $p < .001$, 95% CI [0.13, 0.14]; and helping a stranger, $r(203,574) = .154$, $p < .001$, 95% CI [0.15, 0.16]. At Wave 2, the same pattern emerged: Gratitude was positively correlated with donating, $r(127,047) = .214$, $p < .001$, 95% CI [0.21, 0.22]; volunteering, $r(127,272) = .158$, $p < .001$, 95% CI [0.15, 0.16]; and helping a stranger, $r(127,275) = .173$, $p < .001$, 95% CI [0.17, 0.18].

[Figure 1](#) presents the correlations between trait gratitude and each costly prosocial behavior (donating, volunteering, and helping a stranger) separately for each country and wave. For ease of interpretation, countries are ordered in each panel from the strongest to weakest correlation. Across

Figure 1*Correlations Between Trait Gratitude and Costly Prosocial Behavior in 22 Countries and Hong Kong*

Note. Error bars reflect the 95% confidence intervals. Within a given country, each point represents the correlation between trait gratitude and each action separately at Wave 1 (Year 1: 2022–2023) and Wave 2 (Year 2: 2024). For ease of interpretation, countries are ordered from the strongest to the weakest correlation averaged across the two waves. See the online article for the color version of this figure.

both waves and all three behaviors (six correlations per location), all six correlations were statistically significant in Hong Kong, Israel, the United States, China, Australia, the United Kingdom, Japan, Germany, Spain, Argentina, Brazil, Sweden, Mexico, and Tanzania. These findings provide robust evidence that the relationship between gratitude and costly prosocial behavior spans diverse cultural, economic, and political contexts.

Once again, to provide a more intuitive grasp of the correlation between participants' dispositional gratitude and the measures of prosocial action, we computed the percentage of prosocial actions that participants who scored in the upper and lower quartiles on the gratitude measure said they had engaged in during the past month. In Wave 1, those who scored in the upper quartile indicated that they had done so nearly twice as often (46.4%) as those who scored in the lower quartile (27.6%).³

Does gratitude measured during the first wave predict participants' willingness to engage in costly prosocial behavior measured in the second wave, roughly 1 year later? To find out, we fit three lagged generalized linear mixed models predicting each Wave 2 costly prosocial behavior from gratitude reported at Wave 1. Across all three actions, gratitude measured at Wave 1 significantly predicted an increased likelihood of engaging in costly prosocial action at Wave 2. More specifically, a 1-point increase in gratitude at Wave 1 was associated with a 13.0% increase in the odds of donating ($p < .001$), an 11.1% increase in the odds of volunteering ($p < .001$), and a 7.9% increase in the odds of helping a stranger ($p < .001$) at Wave 2.⁴

Is there a pattern to the countries in which the correlation between gratitude and costly prosocial behavior is especially high and those in which it is more modest or even nonexistent? Encouraged to pursue this question by a previous reviewer, we

supplemented our preregistered analyses with an examination of one possible variable: a country's level of generalized trust. Donating money, volunteering one's time, and assuming the risk involved in trying to help a stranger all involve some uncertainty as to whether one's efforts will pay off (Cettolin et al., 2017; Fahle & Sautua, 2021). Such efforts may therefore be more likely in environments where people believe they can count on others to act in good faith. To examine this possibility, we leveraged country-level data on generalized trust from Our World in Data (Ortiz-Ospina et al., 2024), which aggregates responses to a World Values Survey item that asks, "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" with response options "Most people can be trusted," "Do not know," and "Need to be very careful." For each country in our sample, we extracted the most recent available estimate of the percentage of

³ As in Study 1, roughly the same differences were observed when comparing the top and bottom quintiles and the top and bottom tertiles.

⁴ Intriguingly, across the sample as a whole, an exploratory analysis revealed that trait gratitude declined from Wave 1 to Wave 2, $t(128,867) = -20.498, p < .001$, 95% CI $[-1.06, -0.87]$, $d = 0.06$, as did all three measures of prosocial action. Specifically, *donating* declined from Wave 1 to Wave 2, $t(127,779) = -31.379, p < .001$, 95% CI $[-0.05, -0.04]$, $d = 0.09$, as did *volunteering*, $t(127,976) = -27.506, p < .001$, 95% CI $[-0.04, -0.03]$, $d = 0.08$, and *helping a stranger*, $t(127,863) = -10.211, p < .001$, 95% CI $[-0.02, -0.01]$, $d = 0.03$. A range of factors could plausibly explain these shifts over time, including increased political polarization, rising economic uncertainty, and the effects of the COVID-19 pandemic and any accompanying or unrelated changes in social norms. We cannot test these possibilities with this data set but present these temporal findings for the reader's consideration.

respondents selecting “Most people can be trusted.” The majority were drawn from 2022, but for countries without 2022 data (South Africa, Israel, and Tanzania), we used the most recent available observations (2014 for South Africa and 2004 for Israel and Tanzania). We then rank-ordered each country in our sample from least to most trusting, such that higher values reflected greater generalized trust (1 = *least trusted*, 23 = *most trusted*; see Supplemental Table 2). These country-level trust rankings were then correlated with the corresponding country-level correlations between trait gratitude and each costly prosocial behavior (donating, volunteering, helping a stranger).

At Wave 1, trust rank was positively associated with the correlation between gratitude and donating, $r(21) = .574, p = .004$, 95% CI [0.21, 0.80]; volunteering, $r(21) = .515, p = .012$, 95% CI [0.13, 0.76]; and helping a stranger, $r(21) = .415, p = .049$, 95% CI [0.00, 0.71]. At Wave 2, the same pattern emerged for donating, $r(21) = .525, p = .010$, 95% CI [0.14, 0.77], and volunteering, $r(21) = .598, p = .003$, 95% CI [0.25, 0.81]; the correlation for helping a stranger was positive but did not reach statistical significance, $r(21) = .247, p = .255$, 95% CI [−0.18, 0.60]. Together, these results indicate that in countries where a larger proportion of respondents trust their fellow citizens, trait gratitude was more strongly associated with costly prosocial action.

In addition to generalized trust, we also examined the centrality of religion in daily life. Religion provides strong moral prescriptions about helping others and institutionalized pathways for prosocial engagement (Graham & Haidt, 2010; Norenzayan et al., 2016). This raises the possibility that the relationship between trait gratitude and prosocial behavior may be affected by a country’s prevailing religious context. Since the World Values Survey also includes items on religious importance, we again leveraged country-level data aggregated by Our World in Data (van Teutem, 2025), specifically for responses to the question, “How important is religion in your life?” All religion data were from 2022, apart from South Africa (2014) and Tanzania (2004). Israel was excluded from this analysis because no comparable data on religious importance were available in any wave of the World Values Survey. For each country in our sample, we extracted the proportion of respondents in each country indicating that religion is “very important” in their daily life (see Supplemental Table 3). We then correlated this country-level indicator of religious centrality with the corresponding country-level correlations between trait gratitude and each costly prosocial behavior (donating, volunteering, helping a stranger).

At Wave 1, religious centrality was negatively associated with the correlation between gratitude and all three measures of willingness to engage in costly prosocial action: donating, $r(20) = -.709, p < .001$, 95% CI [−0.87, −0.41]; volunteering, $r(20) = -.598, p = .003$, 95% CI [−0.81, −0.24]; and helping a stranger, $r(20) = -.610, p = .003$, 95% CI [−0.82, −0.25]. The same pattern was also observed at Wave 2: donating, $r(20) = -.736, p < .001$, 95% CI [−0.88, −0.46]; volunteering, $r(20) = -.678, p < .001$, 95% CI [−0.86, −0.36]; and helping a stranger, $r(20) = -.559, p = .007$, 95% CI [−0.79, −0.18]. In other words, in countries where a larger proportion of respondents reported that religion is very important in daily life, trait gratitude was less strongly associated with costly prosocial action.⁵

Note that this finding differs from what we observed in Study 1: That is, at the level of the individual respondents, the correlation between gratitude and prosocial action was equally strong for

secular and religious individuals. What might be responsible for the tendency observed here, at the country level, for the correlation between gratitude and prosocial action to be significantly weaker in more religious countries? Although the question merits further scrutiny, we believe it may be an artifact of the fact that, as noted above, the gratitude–prosocial action link was significantly weaker in countries in which levels of trust are low—which also happen to be countries in which religion is more central to daily life, $r(20) = -.0870, p < .001$, 95% CI [−0.94, −0.71].

Together, the results from this study provide strong and consistent evidence that a stable disposition to experience gratitude is associated with reported engagement in costly prosocial behavior—in the moment, over time, and across cultures. The association between dispositional gratitude and prosocial engagement was especially strong in countries in which citizens trust one another and was surprisingly weak in more religious countries. The latter finding may result from prosocial action being more tied to the norms and practices of the prevailing religious institutions, thereby dampening the role of individual differences in gratitude. Future research might explore this and other possibilities.

Study 3: Donating Blood Versus Getting a Flu Shot

We conducted a field study as a further test of whether those higher in trait gratitude are more likely to engage in costly prosocial actions. We reasoned that donating blood constituted a costly prosocial behavior due to the time and effort involved. Potential donors were required to schedule an appointment in advance and commit to a process that takes 45–60 min. According to the American Red Cross, only 3% of age-eligible people donate blood yearly (American Red Cross, 2024). We compared blood donation to receiving a free flu shot, which is arguably less costly and more self-focused. Flu shot recipients can complete the process in just 5–10 min (indeed, authors Lee and Gilovich received flu shots as walk-ins at one of these clinics during the conduct of this research),⁶ and 75% of stated motivations for vaccination are self-interested, such as reducing personal risk of illness, while only 25% reflect altruistic concerns, like preventing the spread of the flu to others (Shim et al., 2012).

Method

Participants

Three hundred ninety-six participants ($M_{\text{age}} = 25.13, SD_{\text{age}} = 11.36$, range = 18–70) completed the survey, of whom 59.3% self-identified as female, 39.1% as male, and 1.0% as nonbinary. In terms of racial and ethnic composition, 45.7% self-identified as White, 43.2% as Asian, 7.3% as Black, 8.3% as Hispanic or Latino, and 1.8% as Middle Eastern. Participants were not compensated for completing the study.

⁵ The significantly weaker correlation in more religious countries between dispositional gratitude and willingness to engage in prosocial action was not due to a more restricted range in prosocial action in those countries. The mean standard deviation of the prosocial action scores in the most (by median split) religious countries was virtually the same as that in the least religious countries, $t < 1$.

⁶ That said, receiving a flu shot for free could arguably lead to an increase in gratitude given that it provides a health benefit at no cost to the individual. If so, that would diminish the difference between the two conditions, making this study an especially strong test of our hypothesis.

We specified in our preregistration that we would limit our data collection to 1 month and stop data collection at whatever sample size we had achieved at that point, with a target of at least 300 participants. As specified in the preregistration, we excluded individuals who did not confirm that they had given blood in the blood drive condition or received a flu shot in the flu shot condition when they returned the survey, resulting in a final sample size of 375 participants ($n_{\text{BloodDrive}} = 75$, $n_{\text{FluShot}} = 300$). This study was approved by the Institutional Review Board at Cornell University (IRB0148802).

Procedure and Materials

We collected data in October 2024 at six events: three blood drives organized by the American Red Cross and three flu shot clinics run by a large grocery chain's pharmacy. Data collection took place in three waves on five closely matched dates: October 3 (blood drive and flu shot clinic), October 17 (flu shot clinic) and October 21 (blood drive), and October 30 (flu shot clinic) and October 31 (blood drive). While all data collection occurred on the Cornell campus, participation was not limited to Cornell-affiliated individuals.⁷

Research assistants approached people exiting the blood drive or flu shot clinic and said, "Hi, I'm a student researcher here at Cornell. Would you mind filling out a one-page survey for us? It should take about one minute." If the potential participant agreed, we handed them a survey on a clipboard. Once participants returned the survey to us, we verbally confirmed that they donated blood or received the flu shot. We instructed research assistants to approach everyone who appeared to have donated blood or received a flu shot and emphasized the importance of engaging all potential participants, not only those who seemed likely to respond.

The one-page survey consisted of the GQ-6 (McCullough et al., 2002), which was used to measure trait gratitude, and basic demographic questions (in that order). Cronbach's α for the GQ-6 was .75.

Transparency and Openness

All data, analysis code, and research materials for Study 3 are available on the OSF (<https://osf.io/6q5tn>). Analyses were conducted in R (Version 4.4.1; R Core Team, 2024) using the *dplyr* (1.1.4; Wickham, François, et al., 2023), *effectsize* (1.0.1; Ben-Shachar et al., 2025), *emmeans* (1.10.4; Lenth, 2017), *lme4* (1.1.35.5; Bates et al., 2015), *lmerTest* (3.1.3; Kuznetsova et al., 2017), *psych* (2.4.6.26; Revelle, 2024), and *tidyr* (1.3.1; Wickham et al., 2024) packages. The figure was created in R (Version 4.4.1; R Core Team, 2024) using the *ggplot2* package (3.5.1; Wickham, 2016). The hypotheses, methods, and analytic approaches were preregistered prior to data collection on AsPredicted (No. 192488).

Results

As specified in our preregistration, we fit a linear mixed model predicting GQ-6 scores by condition (blood drive vs. flu shot), with research assistant and date of data collection specified as random factors. Gratitude scores were significantly higher for participants in the blood drive condition ($M = 6.13$, $SD = 0.70$) than for those in the flu shot condition ($M = 5.86$, $SD = 0.79$), $t(16) = 2.651$, $p = .017$, 95% CI [0.06, 0.50].

Given that the variance accounted for by the random factors of research assistant (0.00065; 0.11%) and date of data collection (0.00165; 0.27%) was minimal, we followed this analysis with a simpler, non-preregistered Welch two-sample t test comparing the gratitude scores in the two conditions. Gratitude scores were significantly higher for participants in the blood drive condition than for those in the flu shot condition, $t(126.02) = 2.931$, $p = .004$, 95% CI [0.09, 0.46], $d = 0.36$. These results provide evidence that trait gratitude is higher among individuals actively engaging in costly prosocial behavior than among individuals engaged in a less costly, more self-focused action (see Figure 2).

Studies 4a and 4b: Does Experimentally Inducing Gratitude Affect Intentions to Engage in Costly Prosocial Action?

Having established that those high in dispositional gratitude are more, not less, likely to engage in personally costly action to advance the social good, it remains unclear whether this results from a lifetime of living gratefully or whether even transient feelings of gratitude increase the willingness to engage in costly social action. That is, do our findings for trait gratitude apply to state gratitude as well? To answer this question, we conducted two experiments that manipulated feelings of gratitude or another positive emotion and examined participants' reported intentions to engage in costly prosocial action. There are compelling reasons to predict either outcome—that state and trait gratitude have similar effects on prosocial engagement or that a lifetime of living gratefully is required for people to engage in such sacrifice.

In Study 4a, we used a standard gratitude induction to induce gratitude in half of the participants (DeSteno et al., 2014, 2019). Specifically, participants in the gratitude condition were given 3 min to recall and write about a time when they felt grateful, whereas those in the control condition recalled and wrote about the events of a typical day (see Supplemental Table 4 for a full report of the instructions). Study 4b manipulated state gratitude by presenting participants with either a gratitude-inducing or a control video. Following the manipulation in both studies, participants rated their willingness to engage in a series of costly prosocial actions within the next year.

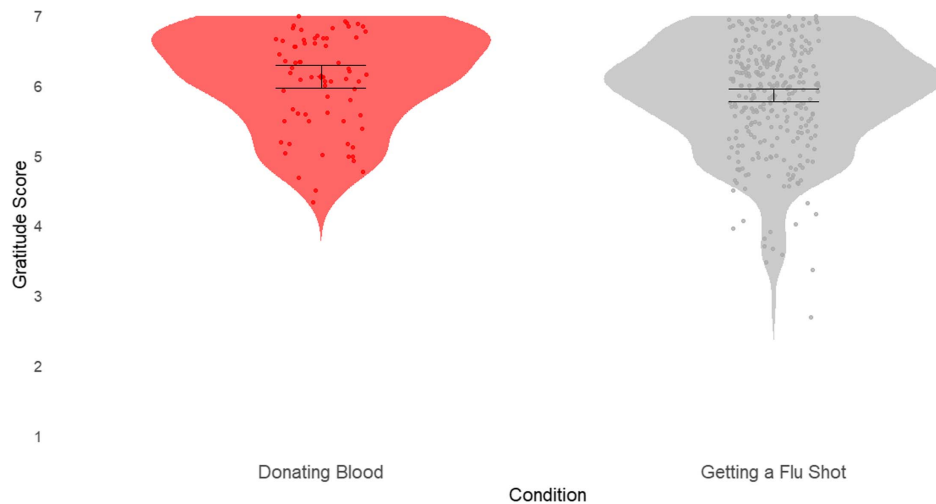
Method

Participants

For Study 4a, 360 U.S. Prolific participants ($M_{\text{age}} = 36.03$, $SD_{\text{age}} = 11.95$) were recruited for \$1 in compensation. For Study 4b, a total of 362 Cornell University students ($M_{\text{age}} = 20.01$, $SD_{\text{age}} = 1.54$) were recruited through two methods. First, 251 students were recruited in exchange for course credit via the Psychology Department's online system, with 173 of them completing the survey. Second, 111

⁷ During the month of October 2024, a \$10 Amazon gift card was automatically emailed to blood donors approximately 30 days after donating blood. Importantly, none of the promotional materials that advertised the blood drives on campus mentioned this incentive. When we asked whether donors were aware of the gift card, a Red Cross volunteer told us that "most people do not know about the incentive." We also note that a survey of blood donors in the United States found that the most common reasons for donating were feeling that it was the right thing to do (81.1%) and knowing that blood was needed (39.1%). Only a small minority (5.7%) reported donating in order to receive a gift (Bednall & Bove, 2011; see also Glynn et al., 2002).

Figure 2
Mean Gratitude Scores for Blood Donors and Flu Shot Recipients



Note. Error bars reflect the 95% confidence intervals (CIs). Participants were recruited in person immediately after donating blood or receiving a free flu shot in October 2024. Gratitude was measured using the Gratitude Questionnaire Short-Form (McCullough et al., 2002). A Welch's t test revealed that blood donors had significantly higher gratitude scores than flu shot recipients, $t(126.02) = 2.931$, $p = .004$, 95% CI [0.09, 0.46], $d = 0.36$. See the online article for the color version of this figure.

students who were passing by the Psychology Department, which is located along a major campus thoroughfare, were recruited in exchange for a \$5 “Big Red Bucks” gift card, with 109 of them completing the study. Because Study 4b combined participants recruited through the department’s online system and in-person recruitment, we examined whether there was any overlap across the two sampling methods. This check identified two participants who appeared in both recruitment pools, and so we removed their second set of responses from the data set prior to analysis, yielding a final sample of 280 participants. Both Studies 4a and 4b were approved by the Institutional Review Board at Cornell University (IRB0148802).

As specified in the preregistration for Study 4a, we conducted an a priori power analysis using G*Power 3.1 (Faul et al., 2009), which indicated that 346 participants would be needed to detect a small-to-medium effect (Cohen’s $d = 0.35$) with 90% power ($\alpha = .05$, two-tailed). We preregistered that we would recruit 360 participants to account for possible exclusions, of which there were none. Data collection for Study 4a took place in July 2024. As specified in the preregistration for Study 4b, we used the same power analysis as Study 4a, but specified that we would conclude data collection at the end of the Spring 2025 semester, regardless of the final sample size. Study 4b was initially launched online, but after multiple participants asked about when they would be awarded course credit, we discovered several incomplete surveys when we examined our participation records, as well as a number of participants who had signed up weeks earlier but never began the study. We therefore transitioned to in-person data collection. Importantly, participants recruited through the two methods did not differ on the primary dependent measures, and recruitment source did not moderate any of the effects, so data were pooled for all analyses. Further demographic information about participants in all studies is available in the [Supplemental Materials](#).

Procedure

As noted above, participants in Study 4a were randomly assigned to write either about a time they felt grateful or about the events in a typical day, and were given 3 min to do so. Participants in Study 4b were randomly assigned to watch a video designed to elicit either gratitude or general positive affect. The gratitude video, tailored to elicit especially deep gratitude among this particular subject pool, consisted of scenes from a longer video celebrating Cornell’s 150th anniversary, honoring the institution’s unique history, its distinguished luminaries, inspiring moments of student life, and sweeping views of the campus and the surrounding area. The general positive emotion video consisted of highlights from various Buster Keaton films, showcasing Keaton’s physical comedy and elaborate stunts. Both videos were 7 min and 53 s long. Further details about the cover story and procedures of both studies are available in the [Supplemental Materials](#).

In both studies, after completing the independent variable manipulation, participants rated on a 1–7 scale (1 = *not at all likely*, 7 = *very likely*) how willing they would be to engage in each of seven costly prosocial actions: (1) donating to a cause they believe in; (2) volunteering for such a cause; (3) displaying a symbol to support such a cause (a lawn sign, bumper sticker, pin, t-shirt); (4) participating in a community-level meeting; (5) contacting an elected official; (6) attending a protest, rally, or march to express support for a cause; and (7) verbally speaking up when doing so would be costly or uncomfortable. Cronbach’s α for the responses to the seven items in each study was high ($\alpha = .88$ in Study 4a and $.85$ in Study 4b), so we averaged participants’ responses as our measure of willingness to engage in costly prosocial action.

Participants in Study 4a also rated the importance of six social issues on a 5-point scale (1 = *not important*, 5 = *very important*): (1) poverty and homelessness, (2) affordable and accessible health care,

(3) the increasing frequency of natural disasters, (4) immigration policies, (5) political corruption, and (6) care for veterans.

Transparency and Openness

All data, analysis code, and research materials for Study 4 are available on the OSF (<https://osf.io/6q5tn>). Analyses were conducted in R (Version 4.4.1; R Core Team, 2024) using the *car* (3.1.3; Fox & Weisberg, 2019), *dplyr* (1.1.4; Wickham, François, et al., 2023), *emmeans* (1.10.4; Lenth, 2017), *psych* (2.4.6.26; Revelle, 2024), and *tidyr* (1.3.1; Wickham et al., 2024) packages. The hypotheses, methods, and analytic approaches were pre-registered for Study 4a on AsPredicted (No. 183888) and Study 4b on AsPredicted (No. 211687).

Results

Manipulation Check

To determine whether our gratitude manipulations significantly increased state gratitude, participants rated how strongly they felt amused, angry, grateful, proud, and sad in the moment (1 = *not at all*, 7 = *very much*), with their responses to the grateful item serving as our measure of state gratitude. In Study 4a, participants completed this manipulation check measure immediately after the writing manipulation. The mean in the gratitude condition was significantly higher ($M = 6.47$, $SD = 0.93$) than that in the control condition ($M = 4.43$, $SD = 1.87$), $t(358) = 13.145$, $p < .001$, 95% CI [1.74, 2.35], $d = 1.39$. For Study 4b, we checked the effectiveness of the manipulation in a separate study conducted in the Spring of 2025 ($N = 55$; see Supplemental Materials).⁸ In that study, the mean in the gratitude condition was significantly higher ($M = 5.52$, $SD = 1.42$) than that in the control condition ($M = 2.90$, $SD = 1.70$), $t(52) = 6.105$, $p < .001$, 95% CI [1.76, 3.49], $d = 1.67$. These results indicate that both the writing and video manipulations were effective in eliciting significantly more state gratitude among participants in the gratitude conditions than in the control conditions.⁹

Prosocial Action Measures

Unlike what we observed for trait gratitude, in neither study did participants in the gratitude condition report greater intentions to engage in costly prosocial action than those in the control condition: Study 4a ($M_{\text{Gratitude}} = 3.82$, $SD_{\text{Gratitude}} = 1.48$) versus ($M_{\text{Control}} = 3.64$, $SD_{\text{Control}} = 1.53$), $t(358) = 1.109$, $p = .268$, 95% CI [-0.14, 0.49], $d = 0.12$; Study 4b ($M_{\text{Gratitude}} = 4.08$, $SD_{\text{Gratitude}} = 1.37$) versus ($M_{\text{Control}} = 4.14$, $SD_{\text{Control}} = 1.24$), $t(262) = -0.363$, $p = .717$, 95% CI [-0.38, 0.26], $d = 0.05$. Thus, unlike what we found for trait gratitude, two different one-shot manipulations that demonstrably increased state gratitude were not sufficient to increase intentions to engage in costly prosocial action.

In contrast, exploratory correlational analyses provided additional support for the importance of *individual differences* in gratitude as a determinant of intentions to engage in costly prosocial action. Specifically, participants' ratings of how grateful they felt were positively correlated with our prosocial action measure in both studies: $r(358) = .197$, $p < .001$, 95% CI [0.10, 0.29] in Study 4a; $r(262) = .219$, $p < .001$, 95% CI [0.10, 0.33] in Study 4b. In other words, across both the gratitude and control conditions, participants

who reported being more grateful also reported a greater willingness to engage in prosocial actions.

Finally, recall that participants in Study 4a also rated how important they thought six different pressing social issues were (e.g., political corruption, affordable health care). On this measure as well, the ratings of participants in the gratitude condition ($M = 3.92$, $SD = 0.62$) did not differ from those of participants in the control condition ($M = 3.86$, $SD = 0.89$), $t(358) = 0.83$, $p = .407$, 95% CI [-0.09, 0.21], $d = 0.09$. However, consistent with the idea that individual differences in gratitude shape willingness to engage in costly prosocial action, participants' gratitude ratings across both conditions were positively correlated with the perceived importance of these social issues, $r(358) = .241$, $p < .001$, 95% CI [0.14, 0.34].¹⁰

Altogether, we obtained evidence from two experiments using demonstrably effective manipulations that, unlike having a general grateful disposition, a passing boost to feelings of gratitude does not lead people to be more inclined to engage in actions to advance the greater good. It appears that a more consistent grateful outlook, perhaps forged from an accumulation of grateful moments, is necessary for people to be more willing than others to do the hard and costly work necessary to advance the public good.

General Discussion

Taken together, our results constitute good news for those who have touted the benefits of gratitude. Not only does gratitude tend to increase an individual's physical health and psychological well-being (Emmons & Mishra, 2011; Wood et al., 2010), but it also makes people more disciplined (Boggio et al., 2020; DeSteno et al., 2014; Dickens & DeSteno, 2016) and more generous (Bartlett et al., 2012; DeSteno et al., 2010; Locklear et al., 2021; Yost-Dubrow & Dunham, 2018). And, as we have shown here, it is also associated with a greater willingness to work to advance the greater good when doing so comes at a cost. Our respondents who scored high on a validated measure of trait gratitude were more likely, for example, to donate their money, to volunteer their time, and to help strangers. This finding was observed across the globe—from China to the United States, from Australia to Sweden, and from Argentina to Japan. The more grateful participants in these studies also rated a host of contemporary problems as more important, and those

⁸ We wanted to avoid drawing participants' attention to their emotional state before asking them to report their willingness to engage in costly prosocial behaviors in Study 4b, so we did not ask the participants in that study to rate how grateful they felt.

⁹ For both gratitude manipulations, there were no statistically significant differences between conditions in sadness, anger, or amusement. However, there was a significant difference between the two conditions in participants' ratings of how much pride they felt, such that participants in the gratitude condition reported greater pride than those in the control condition, $t(358) = 6.303$, $p < .001$, 95% CI [0.87, 1.66], $d = 0.66$ (Study 4a), and $t(52) = 7.590$, $p < .001$, 95% CI [2.29, 3.93], $d = 2.07$ (Study 4b's manipulation check study). The manipulation check study for Study 4b also revealed that participants in the gratitude condition were less amused than those in the control condition, $t(52) = -2.440$, $p = .018$, 95% CI [-1.98, -0.19], $d = 0.67$.

¹⁰ For Study 4a, participants' state pride across both conditions was also positively correlated with engaging in costly prosocial action, $r(358) = .244$, $p < .001$, 95% CI [0.15, 0.34], as well as the perceived importance of these social issues, $r(358) = .182$, $p < .001$, 95% CI [0.08, 0.28]. We return to these associations in the General Discussion section.

surveyed while donating blood were more grateful on average than those surveyed while receiving an inoculation to protect themselves.

Critically, the link between trait gratitude and costly prosocial action was not limited to participants' intentions to engage in prosocial action, nor was it limited to measures taken at a single time point. Participants in Studies 1 and 2 reported on their *past* prosocial actions, and in Study 3, we administered a validated gratitude scale to participants actively engaging in a costly prosocial behavior (giving blood) or a parallel, control action (receiving a flu shot). Testifying to the enduring connection between gratitude and prosocial action, trait gratitude in Study 2 predicted respondents' reported engagement in costly prosocial actions a year later, reinforcing the idea that gratitude reflects a durable tendency to promote the greater good. Only Studies 4a and 4b assessed participants' prosocial intentions.

By contrast, in our experiments that manipulated state gratitude (Studies 4a and 4b), a one-shot gratitude induction did not reliably increase willingness to engage in costly prosocial action—despite producing reliable increases in state gratitude. Together, these findings suggest that a more stable disposition to feel grateful, rather than a fleeting grateful mood, is what most strongly supports people's willingness to incur personal costs to advance the greater good. Note, however, that the gratitude manipulations in these studies also led participants to feel more pride, an emotion that is not noted for directing one's attention away from the self and toward the welfare of others (Stellar et al., 2017). The elicitation of pride may have offset the effects of increased gratitude, undermining the effects of the latter. Perhaps other manipulations of state gratitude that future researchers might implement that do not also elicit pride would reveal an effect of state gratitude on engagement in costly prosocial action.¹¹

Internal Meta-Analysis

To assess the overall magnitude of the relationship between trait gratitude and prosocial action, we meta-analytically examined the results from the three studies that examined dispositional gratitude (Studies 1–3). Using Stouffer's method, we found a highly robust positive association between trait gratitude and costly prosocial behavior, weighted $Z = 164.00$, $p < .001$. We then estimated the pooled effect size by meta-analyzing all correlation estimates using Fisher's z transformation, which yielded $r = .163$, 95% CI [0.16, 0.17]. We also conducted an integrative data analysis (Curran & Hussong, 2009), an analytic approach in which the original individual-level data across studies are pooled. Focusing on Studies 1 and 2, which assessed retrospective reports of prosocial behavior in the past month, we conducted a multilevel model in which participant and study were specified as random factors and both the gratitude and prosocial behavior measures were standardized prior to analysis. Consistent with the meta-analytic results, higher gratitude scores predicted greater prosocial behavior, $b = 0.144$, $t(334,019.86) = 98.388$, $p < .001$, 95% CI [0.14, 0.15].

This robust relationship between trait gratitude and prosocial action might very well have turned out otherwise. There are compelling reasons to believe, as others have argued (Ehrenreich, 2009, 2015; Eibach et al., 2015; Ksenofontov & Becker, 2020; Wood et al., 2016), that gratitude can promote a sense of contentment, which, in turn, might blind people to the need for societal change or undermine their desire to bring it about. Our findings demonstrate quite clearly that that is not the case. Fears about a

grateful orientation making people too contented to work for needed change appear to be misplaced. Rather than weakening moral resolve, dispositional gratitude seems to strengthen it, motivating people to act even when doing so is costly.

Limitations and Future Directions

Although the relationship between trait gratitude and costly prosocial action was robust across nationally representative samples in 22 countries, the null effects for state gratitude were observed only in U.S.-based samples and with a particular pair of brief interventions. We cannot assume these null results would generalize to other populations or to interventions that are more extensive, long-term, or socially embedded. Indeed, it is possible that *self-initiated* contemplation of reasons to be grateful, or more sustained external inducements, such as being assigned to keep a gratitude diary (Emmons & McCullough, 2003; Lyubomirsky et al., 2011; Seligman et al., 2005), might have a greater impact. Such exercises may begin as mere boosts to state gratitude, but over time might change a person's level of trait gratitude—and thus increase their willingness to engage in costly prosocial actions. One further consideration to bear in mind when contemplating potential future interventions is that whereas state gratitude is often elicited by specific events, outcomes, or actions of a particular individual, dispositional gratitude is more generalized (Walker et al., 2016). Future work might therefore explore how to cultivate this broader, more expansive form of gratitude and also test whether the null effects for state gratitude we observed are specific to one-shot gratitude manipulations or to U.S.-based samples.

One possible avenue for cultivating trait gratitude could involve leveraging gratitude's potential to strengthen and expand social networks. Echoing Kundera's (2002) imagery of the "grand march," Chang et al. (2012) proposed that "positive emotions such as gratitude may diminish an individual's inclination to distinguish self-related from unrelated others." In this way, they argue, feelings of gratitude may prompt individuals to blur the boundaries between close and distant others (Chang et al., 2012). The resultant feelings of connection to others may increase people's willingness to sacrifice to advance the greater good.

Along those lines, although the find-remind-and-bind model of gratitude (Algoe, 2012) was originally formulated to explain how gratitude helps people identify and build dyadic relationships, it could be extended beyond dyads. One possibility would be to draw upon the details of the model to develop gratitude interventions that prompt reflection on privilege and relative advantage to help people "find" overlooked social issues and causes, "remind" them of social and financial advantages they may hold, and "bind" them to efforts that advance the greater good. Reflecting on one's relative advantage might thus be used to elicit rich feelings of state gratitude that may foster a sense of moral obligation to others and to society more broadly.

¹¹ Although it seems unlikely to us, it is also possible that the failure to find an effect of state gratitude may be connected to the measure of intended prosocial action employed in Studies 4a and 4b. That seems unlikely for several reasons, the most important being that we observed a significant effect of trait gratitude on intended prosocial action in those studies. But it remains a possibility, one that could be resolved in future studies on the impact of state gratitude.

Future interventions might explore ways to counteract the tendency for people to be more attuned to obstacles they face (headwinds) than to advantages that support them (tailwinds). Although people do recognize some of the advantages they enjoy, those tend to be focused on support from specific people rather than broader, structural conditions that facilitated their success or good fortune (Davidai & Gilovich, 2016; Smith et al., 2025). Interventions that redirect gratitude toward these overlooked systems of support may be more likely to broaden the scope of moral concern and inspire more costly forms of prosocial behavior (Laham, 2009).

Finally, the present research examined the connection between gratitude and a range of costly prosocial actions, such as donating blood, giving money, volunteering one's time, and attending rallies, protests, or marches. But these public-spirited actions were rated by participants only at or just above the midpoint of a 7-point costliness scale (anchored at the rather vague endpoints "not at all" and "extremely"). There are, to be sure, even more costly prosocial actions that people can and do engage in—donating a kidney or bone marrow, or leaving one's estate to a charitable organization. Because these actions are less common (Rhoads et al., 2023), they are harder to study, but future research could nonetheless profitably examine whether the link between gratitude and prosocial action that we observed extends to behaviors like those that involve even greater sacrifices of time, effort, money, comfort, or reputation.

Concluding Thoughts

In an era marked by cynicism, it appears to be the more grateful individuals among us who are most likely to show up, give of themselves, and engage in costly prosocial behavior. Our findings thus challenge the claim that gratitude makes people feel satisfied and therefore less willing to work to bring about positive societal change. Instead, we show that more grateful people are more likely to take on the hard, costly work of donating, volunteering, helping friends and strangers, and participating in civic processes. As people the world over continue to battle inequities, injustice, and abuses of power, it appears to be the grateful among us who are most likely to do something about it.

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