

Emotion

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Cultural Variation in the Motivational Correlates of Gratitude

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Gratitude confers a sense of indebtedness to repay the benefactor, which poses a limitation on one's autonomy—an aversive experience in individualist cultures. Yet, gratitude is frequently valued and expressed in individualist cultures such as the United States. One solution to this dilemma is that gratitude has different aspects: It confers a sense of obligation but also strengthens social relations. Thus, gratitude might be associated more strongly with indebtedness in cultural contexts where autonomy is less valued, but it might be associated with a desire to be close to others in cultural contexts where autonomy is more valued. We tested how motivations for being indebted, for connecting to others, and for a hedonic emotional balance predict both gratitude to God and interpersonal gratitude in samples from the United States, India, Israel, Poland, South Korea, and Turkey ($N = 2,093$). Results revealed substantial cultural variation in how these correlates are associated with gratitude. We discuss how gratitude can inform cultural differences in how relationships are construed.

Keywords: gratitude, culture, religion, emotion

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Gratitude supports the formation and maintenance of close relationships (Algoe, 2012; Gordon et al., 2012; Lambert & Fincham, 2011). Since the manner in which social relationships are constructed is highly dependent on culture (e.g., Cross & Joo, 2023; Markus & Kitayama, 1991; Miller & Bersoff, 1994; Thomson et al., 2018), the role of gratitude in the maintenance of social relationships may depend on culture as well. In this investigation, we examined how the social motivations of gratitude vary across cultures.


Different Aspects of Gratitude

Gratitude has different aspects. On the one hand, gratitude often confers a sense of obligation or indebtedness to repay the person or being to whom one is grateful (McCullough et al., 2001). Being obligated poses a limitation on one's autonomy, and at least in individualist cultural contexts, being indebted is an aversive experience (Greenberg, 1980; Watkins et al., 2006). On the other hand, gratitude is a positive emotion—gratitude has been shown to covary with other

positive affective states (Mayer et al., 1991), and manipulating gratitude increases positive affect (Emmons & McCullough, 2003). Furthermore, even though indebtedness is an aversive experience for people from more individualist cultural contexts, people from such cultures are also more likely to feel gratitude and to consider it highly desirable (relative to people from more collectivist cultures; Corona et al., 2020).

One solution to this paradox is that gratitude has different aspects. Gratitude does confer a sense of obligation and indebtedness, but it can also promote interpersonal connection independently of that (Algoe et al., 2008). For instance, people who feel gratitude report that they have a stronger relationship with their benefactor. In cultures where a sense of obligation is normative, such as those emphasizing one's interpersonal duties, feeling gratitude may reflect the extent to which one is willing or motivated to be indebted to others. Meanwhile, in cultures where personal autonomy is emphasized and obligation is experienced as aversive, feeling gratitude may reflect the extent to which one values interpersonal connection.

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Obligation and Autonomy Across Cultures

While a desire for interpersonal relationships reflects a fundamental human motivation and is arguably universal (Baumeister & Leary, 1995), cultures differ in how they construe their interpersonal relationships. In cultures higher in collectivism, people are more attuned to their interpersonal duties and obligations, such as to their parents or their community (Hofstede et al., 2010; Markus & Kitayama, 1991). A sense of obligation is thus culturally normative in a collectivist culture. Meanwhile, in cultures higher in individualism, people are more likely to want to emphasize their personal autonomy and independence from others. The construal of relationships in such cultures is more voluntaristic than in collectivist cultures, and their maintenance is also more dependent on the preferences of both parties (Adams et al., 2004). Closely tied with individualism is a cultural difference in relational mobility, which refers to a cultural difference in the ease or difficulty of forming or terminating relationships (Yuki & Schug, 2020). In cultures high in relational mobility, social relationships are flexible and can be formed or terminated at will. Consequently, in cultures higher in individualism and relational mobility, relationships are less likely to be constructed in terms of obligation and duties and more likely to be constructed in terms of mutual support and benefit.

These cultural differences in how interpersonal relationships are construed may affect gratitude. In a culture higher in collectivism and lower in relational mobility, gratitude may be more likely to reflect a willingness to take on duties and obligations than a generalized desire for interpersonal closeness. Meanwhile, in a culture higher in individualism and in relational mobility, where obligations are experienced as less pleasant (Buchtel et al., 2018), gratitude may be more likely to reflect motivations for interpersonal closeness, without the autonomy-limiting notions of duties and obligation (Algoe et al., 2008). Initial findings are consistent with these suggestions. In one investigation (Oishi et al., 2019), gratitude was induced via a writing exercise (vs. a control condition). In the gratitude condition, participants from a collectivist culture (South Korea) reported marginally greater feelings of indebtedness than in the control condition. A follow-up study on participants from an individualist culture (the United States) found that feelings of indebtedness were marginally lower in the gratitude condition than in the control condition. This finding demonstrates that indebtedness may be particular to the construction of gratitude in more collectivist cultures, but this finding does not demonstrate what may be particular to the construction of gratitude in more individualist cultures. Furthermore, this finding is based on samples from only two countries, so its generalizability to other cultures varying in obligation and autonomy is not yet known.

The Present Investigation

The goal of the present investigation was to examine whether two particular motivational correlates of gratitude vary across cultures: desire or willingness to be indebted and desire for interpersonal closeness or connection. Based on our reasoning above, willingness to be indebted can be expected to be a stronger predictor of gratitude than a desire for closeness in cultures lower in individualism and in relational mobility, whereas a desire for closeness can be expected to be a stronger predictor of gratitude than willingness to be indebted in cultures higher in individualism and in relational mobility. Additional motivations may exist, such as the desire to experience positive

emotions and avoid negative emotions (desire for a prohedonic emotional balance; Tamir, 2016) or to view oneself favorably (Alicke & Sedikides, 2009) by experiencing and expressing a socially desirable emotion. We include the former as a control, but we do not cover all the possible motivational correlates of gratitude.

We test these predictions across four assessments of gratitude. First, a key distinction is between desired gratitude and experienced gratitude. Desired gratitude refers to the extent to which people want to feel gratitude, whereas experienced gratitude refers to the extent to which they actually feel gratitude. Even though they may influence each other, desire of emotions and experience of emotions are conceptually and empirically distinct. Conceptually, desired emotions are the emotional states that people seek to experience, and these serve as the targeted end states of emotion regulation (Tamir, 2016). Experienced emotions refer to the emotional states people actually feel, which may or may not reflect their desired emotions. Empirically, desired emotions and experienced emotions have different determinants, with culture more likely to influence the former than the latter. For instance, differences between European Americans and Asian Americans are larger in how much they want to feel high-arousal versus low-arousal positive affect, compared to how much they actually experience high-arousal versus low-arousal positive affect (Tsai et al., 2006). This distinction has been demonstrated for gratitude as well—religiosity predicts desired gratitude, even after controlling for experienced gratitude (Vishkin et al., 2020). Consequently, it is important to establish the robustness of any obtained cultural differences across both desired and experienced gratitude.

A second key distinction is the target of gratitude. Gratitude can be directed toward others (interpersonal gratitude) as well as toward God. Among those who believe in God, gratitude to God can be particularly meaningful (Rosmarin et al., 2011). Recent work has demonstrated that the emotional and cognitive profiles of gratitude to God and interpersonal gratitude are unique (Park et al., 2022; White et al., 2024) and that they are associated with different personality traits (Newman et al., 2024). One key empirical finding is that people report greater feelings of indebtedness for interpersonal gratitude (vs. gratitude to God), possibly due to the more abstract and less personified conceptions of God. Furthermore, there might be cultural norms about closeness or indebtedness to God that differ from norms about closeness or indebtedness to other people. For instance, people in highly individualist cultures might be reluctant to be indebted to other people, but religious people in such cultures might still think that it is appropriate or desirable to be indebted to God. Consequently, we sought to establish the robustness of our findings across desired and experienced gratitude to God, as well as desired and experienced interpersonal gratitude.

We recruited six samples from diverse cultural regions that vary in both relational mobility (Thomson et al., 2018) and individualism–collectivism (Hofstede et al., 2010). These include the United States (high in individualism and in relational mobility); Israel and Poland (moderate in individualism and relational mobility); and India, South Korea, and Turkey (low in individualism and relational mobility).¹ Based on our reasoning, desire for closeness should be a stronger predictor of gratitude than willingness to be indebted in the United States, whereas willingness to be indebted should be a stronger predictor of gratitude than a desire for closeness

¹ Thomson et al.'s (2018) index of relational mobility does not include India.

in India, South Korea, and Turkey, with Israel and Poland falling one way or the other. Since gratitude to God is less relevant among those low in religiosity, samples were selected based on a stratified sampling of religiosity, with the goal of recruiting samples with similar means and standard deviations of religiosity.

Method

Transparency and Openness

This study was preregistered, including its measures, sample selection, analyses, and data exclusions at https://aspredicted.org/blind.php?x=MQD_AIA. A research question regarding between-sample differences in the motivational predictors of gratitude was preregistered, and the preregistered analyses for examining that question are reported in the Results section. Other than two pairwise comparisons (between the United States and South Korea, and the United States and India), the preregistration states that no specific hypotheses pertaining to this research question were preregistered, and neither individualism–collectivism nor relational mobility were mentioned as dimensions that distinguish the samples. We report how we determined sample sizes in each of the six countries, as well as all data exclusions and measures in the study. Data and scripts are available on the Open Science Framework at https://osf.io/597hk/?view_only=34d71a469a244a729987d14b416743e0.

Participants

We recruited the following samples of participants who affiliate with the majority religion in their respective country: American Christians (evenly divided between Protestants and Catholics), Indian Hindus, Israeli Jews, Polish Catholics, Turkish Muslims, and South Korean Christians.² We preselected participants in each sample based on a stratified sampling of religiosity in order to sample the entire spectrum of religiosity. We strove to have samples with roughly equal means and standard deviations of religiosity, even though preselection criteria differed from sample to sample because different panels had different measures for assessing the level of religiosity of participants. Data were collected in or around April 2021.

One of the causes of differences between samples is variability in data quality. For instance, two variables might have strong associations in a sample with high data quality but weak associations with each other in a sample with poor data quality. When samples originate from different cultures, such a difference might be attributed mistakenly to meaningful cultural differences rather than differences in data quality. Therefore, it is critical to establish similar levels of data quality across samples in cross-cultural research. To do so, we used a preregistered criterion of excluding participants who failed an attention check, which required participants to identify which three of seven questions they completed during the survey. The probability of passing this attention check by chance is 2.86%.

The eligible participants who passed this attention check included 630 American Christians ($M_{\text{age}} = 38.1$; 53.6% female), 233 Indian Hindus ($M_{\text{age}} = 30.8$; 37.8% female), 289 Israeli Jews ($M_{\text{age}} = 40.85$; 52.4% female), 310 Polish Catholics ($M_{\text{age}} = 23.30$; 31.8% female), 360 South Korean Christians ($M_{\text{age}} = 38.59$; 52.2% female), and 271 Turkish Muslims ($M_{\text{age}} = 34.83$; 56.5% female). Overall, 2,093 eligible participants completed the survey across the seven samples. When considering the overall sample sizes before exclusions³ and the

2.86% probability of passing the attention check by chance, the number of participants who passed the attention check by chance was likely small in every sample, ensuring adequate data quality across all samples.

Procedure

The survey was prepared in English and administered in this language in the American and Indian samples. We followed a translation and back-translation procedure in preparing the surveys for the Israeli, Polish, Korean, and Turkish samples in their native language.

All surveys were completed online. American and Polish participants were recruited from the online panel <https://www.prolific.co>. Indian participants were recruited from the online panel <https://www.cloudresearch.com>, from which a limited number of eligible participants were obtained; therefore, this sample was supplemented by participants from the online panel <https://www.prolific.co>. A single participant on the latter platform indicated completing an identical survey on the former platform and was therefore excluded. Israeli participants were recruited from the online panel <https://www.pane14all.co.il>. South Korean participants were recruited from the online panel <https://www.embrain.com>. Turkish participants were recruited from the online panel <https://www.tgmresearch.com>.

After providing consent, participants completed the survey in the following order: desired gratitude, desired positive and negative emotions, experienced positive and negative emotions (not reported here), desire to be indebted and desire to be close to others (counter-balanced), experienced gratitude, religiosity, and demographics. Two additional measures on lay beliefs about emotions appeared before the assessment of religiosity. These are not related to the present investigation and are mentioned in the preregistration. Two additional measures appeared in specific samples and were not analyzed in this investigation. First, the American sample included an assessment of desired and experienced nonpersonal gratitude. Second, the Israeli sample included an assessment of experienced awe to others and to God.

Materials

Desired Gratitude

Participants were asked to indicate how frequently they want to feel grateful to God and grateful to other people in their daily life. Response options were *never* (coded as 1), *rarely*, *sometimes*, *often*,

² South Korea is historically Buddhist, but presently has a larger number of self-affiliated Christians than Buddhists (Kim, 2002).

³ American Protestants: 360; American Catholics: 360; Indian Hindus: 486; Israeli Jews: 397; Polish Catholics: 360; South Korean Christians: 436; Turkish Muslims: 575. We pre-registered our aim to recruit valid responses from 300 Protestants and 300 Catholics in the United States, as well as 300 participants in every other country. Furthermore, the preregistration noted that: “To account for attrition and failure to pass the attention check we will oversample in each site by 20%”—meaning, 360 participants per sample. The over-sampling by 20% was adhered to in the two American samples and in the Polish sample. A misunderstanding with the local panel running the South Korean sample led to the recruitment of 360 participants after exclusions (rather than 300 after exclusions). For three samples—Israel, Turkey, and India—exclusion rates were higher than 20%, and therefore sampling was continued until larger samples were obtained. No analyses were run until the full samples mentioned in this footnote were obtained.

and *most of the time* (coded as 5). Two additional items, not reported in the present investigation, assessed desired awe of God and of other people.

Desired Positive and Negative Emotions

Participants indicated how frequently they want to feel six positive emotions (e.g., happy) and six negative emotions (e.g., sad) in their daily life on the items from the Scale of Positive and Negative Emotions (Diener et al., 2010). The prompt and scale were identical to the prompt and scale used for assessing desired gratitude. Reliabilities were acceptable across samples for both positive emotions (across the six samples: $.78 \leq \alpha \leq .93$) and negative emotions (across the six samples: $.83 \leq \alpha \leq .93$). Desired hedonic balance was computed by subtracting desired negative emotions from desired positive emotions.

Experienced Gratitude

Participants reported how frequently they experience gratitude using a modified version of the six-item Gratitude Questionnaire (GQ; McCullough et al., 2002). One version referred specifically to gratitude to other people (e.g., *I have so much in life to be thankful to other people for*). Another version referred specifically to gratitude to God (e.g., *I have so much in life to be thankful to God for*). This version of the GQ, which refers to gratitude to God, has been used in previous research (Rosmarin et al., 2011). All participants completed both versions in a counterbalanced order. Responses were provided on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Reliabilities were acceptable across samples for both gratitude to others ($.64 \leq \alpha \leq .84$)⁴ and gratitude to God ($.72 \leq \alpha \leq .90$).

Desire for Closeness

Participants completed a five-item measure adapted from Vishkin et al. (2020) to indicate how much they want to be close to others (e.g., *In general, to what extent do you want to connect with other people all the time?*) on a scale from 1 (*not at all*) to 7 (*to a great extent*). Motivation to be close to God was assessed using the same scale, but we replaced “other people” with “God.” Reliabilities were acceptable across samples for both desired closeness to others ($.75 \leq \alpha \leq .84$) and desired closeness to God ($.92 \leq \alpha \leq .97$).

Desire to Be Indebted

Participants completed a five-item measure to indicate how willing they are to be indebted to others (e.g., *In general, to what extent do you want to be dependent on other people?*) on a scale from 1 (*not at all*) to 7 (*to a great extent*). Motivation to be close to God was assessed using the same scale, but we replaced “other people” with “God.” Reliabilities were acceptable across samples for both desired indebtedness to others ($.80 \leq \alpha \leq .89$) and desired indebtedness to God ($.93 \leq \alpha \leq .97$).

Religiosity

Religiosity was assessed via the 10-item Religious Commitment Inventory (RCI; e.g., *My religious beliefs lie behind my whole approach to life*; Worthington et al., 2003). Responses were provided on a scale from 1 (*not at all true of me*) to 5 (*totally true of me*). Reliabilities were acceptable across samples ($.93 \leq \alpha \leq .97$). Means

ranged from 2.35 (in Poland) to 2.80 (in Israel), and a one-way analysis of variance revealed that the level of religiosity differed significantly between samples, $F(5, 2087) = 5.43, p < .001$, but the effect size of this difference was small, $\eta^2 = .013$. Given these significant differences, we controlled for religiosity in the analyses. The inclusion of religiosity as a covariate was informed by the finding that samples differ significantly in religiosity and was not preregistered.

Analyses

We tested the cross-cultural equivalence of the multi-item measures by running multigroup confirmatory factor analyses with robust maximum likelihood estimation using the Lavaan R package (Rosseel, 2012) in order to establish that they tap equivalent constructs across samples. First, to establish configural invariance, we tested whether all items in a measure loaded on the same factor across samples. Since some items might be more correlated with others within a given measure, we added covariances to error terms based on modification indices. We evaluated model fit using standard cutoffs for multiple fit indices, including comparative fit index (CFI) values $> .95$, root-mean-square error of approximation (RMSEA) values $\leq .06$, and the standard root-mean-square residual (SRMR) values $\leq .08$ (Hu & Bentler, 1999). Next, to establish metric invariance, we tested whether the loadings of the items on the latent factor were equal across samples. Reduction in fit from configural to metric invariance was evaluated based on criteria proposed by Chen (2007), including $\Delta CFI < .01$, $\Delta RMSEA < .015$, and $\Delta SRMR < .03$. In instances where we were not able to establish full metric invariance, we examined partial metric invariance, which requires that at least two loadings are equivalent across groups (Byrne et al., 1989)—however, we adopted the more rigorous criterion that at least half the loading are equivalent across groups (Steenkamp & Baumgartner, 1998; Vandenberg & Lance, 2000). Partial metric invariance is sufficient to justify comparing associations between constructs across samples (Steenkamp & Baumgartner, 1998). Overall, all measures displayed acceptable levels of fit for establishing configural invariance, as well as at least partial metric invariance (see Table 1). Chi-square tests of model fit are typically significant in the baseline model of configural invariance and in the comparison between configural and metric (or partial metric) models (see Table 1; all chi-square tests appear in Supplemental Table A8). However, we note in this regard that several concerns have been raised regarding the use of chi-square tests in measurement invariance tests (Hirschfeld & Von Brachel, 2014), such as the greater likelihood of detecting significant effects with larger sample sizes. Consequently, we rely on the aforementioned criteria proposed by Chen (2007). According to those criteria, the results of the measurement invariance testing justify comparing associations with gratitude across samples.

One-way ANOVAs revealed significant differences between samples by gender, $F(5, 2081) = 12.78, p < .001, \eta^2 = .030$, and age, $F(5, 2086) = 99.28, p < .001, \eta^2 = .192$. Therefore, we controlled for gender and age, as well as for religiosity. The inclusion of gender and as covariates was informed by the finding that samples differ significantly in these demographic variables and was not preregistered.

⁴ India had the lowest reliability for experienced gratitude to others ($\alpha = .64$), followed by Turkey ($\alpha = .73$).

Table 1
Measurement Invariance Across Samples

Measure	Configural invariance					Metric invariance			Partial metric invariance			Fit comparison between configural and metric or partial metric invariance	
	$\chi^2(df)$	<i>p</i>	CFI	RMSEA	SRMR	CFI	RMSEA	SRMR	CFI	RMSEA	SRMR	$\Delta\chi^2(df)$	<i>p</i>
Religiosity	806.85(174)	<.001	0.969	0.083	0.030	0.959	0.086	0.061	0.961	0.085	0.056		
Reduction in fit						0.01	0.003	0.031	0.008	0.002	0.026	150.62(35)	<.001
Desire to connect to others	23.90(18)	.158	0.999	0.025	0.014	0.994	0.036	0.043					
Reduction in fit						0.005	0.011	0.029				32.67(20)	.037
Desire to be indebted to others	83.54(12)	<.001	0.987	0.090	0.021	0.962	0.092	0.065	0.979	0.083	0.040		
Reduction in fit						0.025	0.002	0.044	0.008	-0.007	0.019	26.50(10)	.003
Experienced gratitude to others	167.05(48)	<.001	0.976	0.071	0.024	0.942	0.09	0.095	0.971	0.068	0.043		
Reduction in fit						0.034	0.019	0.071	0.005	-0.003	0.019	33.32(15)	.004
Desire to connect to God	51.52(18)	<.001	0.997	0.047	0.007	0.989	0.066	0.045	0.994	0.057	0.034		
Reduction in fit						0.008	0.019	0.038	0.003	0.010	0.027	32.04(10)	<.001
Desire to be indebted to God	85.00(12)	<.001	0.993	0.084	0.008	0.978	0.091	0.049	0.983	0.086	0.037		
Reduction in fit						0.015	0.007	0.041	0.01	0.002	0.029	57.31(15)	<.001
Experienced gratitude to God	133.53(42)	<.001	0.987	0.071	0.014	0.964	0.093	0.092	0.985	0.065	0.021		
Reduction in fit						0.023	0.022	0.078	0.002	-0.006	0.007	22.80(15)	.101
Desire emotions	791.70(318)	<.001	0.969	0.050	0.033	0.958	0.054	0.062	0.961	0.053	0.057		
Reduction in fit						0.011	0.004	0.029	0.008	0.003	0.024	128.15(45)	<.001

Note. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root-mean-square residual.

Results

Means and standard deviations for each measure in each sample appear in Table 2.

Analyses With Participants Nested Within Samples

First, we tested associations between gratitude and the three correlates (desired hedonic balance, desire for closeness, desire to be indebted) on each of the four measures of gratitude (experienced and desired gratitude, to others and to God) across all the samples using multilevel regressions, with participants nested within samples. As noted above, we also controlled for age, gender, and religiosity. With a full random-effect structure, these models failed to converge or demonstrated singularity concerns. They converged only after removing random slopes for the covariates (age, gender, and religiosity) as well as covariances between random factors.⁵ Results revealed that a greater desire to be indebted predicted greater experienced gratitude (to God and to others) and greater desired gratitude (to God and to others; see Table 3). Likewise, a greater desire for closeness predicted gratitude across all four measures. Meanwhile, a greater desire for hedonic balance predicted greater desired gratitude to God and experienced gratitude to others but not experienced gratitude to God or desired gratitude to others. These findings are consistent with the expectation that motivations for both indebtedness and closeness are closely associated with gratitude.

Next, our preregistered analysis plan called for testing whether the slopes of the three correlates significantly vary by sample in the multilevel models. We performed this analysis by conducting a likelihood ratio test, in which we compared the fit of two nested models: the more complex models in Table 3 versus a simpler model without the random slope of one of the three correlates. Results revealed significant contributions of the random slopes of desired indebtedness and desired closeness to model fit in three of four

models (see the two rightmost columns of Table 3). In contrast, slopes for desired hedonic balance made a significant contribution to model fit only in one model. These findings demonstrate that, as expected, the associations between desired and experienced gratitude with desired indebtedness and closeness vary significantly between the different samples.

Analyses by Sample

In order to get a better picture of precisely how these associations vary by sample, we analyzed these associations separately in each sample via linear regressions. We regressed the three correlates of gratitude (desired hedonic balance, desire for closeness to others, desire to be indebted to others) on each measure of gratitude in each sample. Then, we ran a Wald test in each regression to determine whether the coefficients for desired closeness and desired indebtedness differed. As in the multilevel analyses, we controlled for religiosity, age, and gender.

First, we ran the regressions for experienced gratitude to God. Results revealed variation across samples in the relative magnitude of the correlates in predicting experienced gratitude to God (see Figure 1a; for full regression results, see Supplemental Table A1). Specifically, consistent with the theoretical account that the weight of these correlates will vary based on relational mobility and individualism–collectivism, desired closeness to God was a significantly stronger predictor than desired indebtedness to God in the American sample, high in relational mobility and individualism; Wald test: $F(1, 620) = 12.41, p < .001$, whereas the opposite pattern of findings was obtained in South Korea and Turkey (low in

⁵ Removing random effects of covariates as well as covariances between random factors was sufficient for convergence of experienced and desired gratitude to others. For experienced and desired gratitude to God, random effects for intercepts had to be removed as well.

Table 2
Means (Standard Deviations) of Measures in Each Sample

Measure	United States	India	Israel	Poland	South Korea	Turkey
Religiosity	2.59 (1.20)	2.58 (1.09)	2.80 (1.30)	2.36 (0.93)	2.75 (1.24)	2.61 (1.20)
Desired closeness to God	5.08 (1.77)	4.59 (1.72)	5.21 (1.92)	4.46 (1.86)	4.66 (1.70)	5.08 (1.85)
Desired indebtedness to God	4.18 (2.03)	3.78 (1.80)	4.65 (2.22)	3.06 (1.74)	4.54 (1.93)	4.88 (2.03)
Experienced gratitude to God	5.57 (1.38)	4.94 (1.20)	5.59 (1.51)	4.35 (1.48)	5.07 (1.34)	5.53 (1.59)
Desired gratitude to God	3.97 (1.19)	3.83 (1.08)	4.17 (1.14)	3.35 (1.13)	3.74 (1.12)	3.81 (1.29)
Desired closeness to others	4.95 (1.08)	5.08 (1.03)	5.40 (0.92)	5.43 (0.89)	4.61 (1.08)	5.08 (1.16)
Desired indebtedness to others	2.21 (1.07)	3.18 (1.40)	2.10 (1.03)	2.13 (0.94)	3.07 (1.04)	2.96 (1.27)
Experienced gratitude to others	5.36 (1.08)	4.72 (0.92)	4.57 (1.10)	4.7 (1.14)	4.87 (0.93)	3.65 (1.09)
Desired gratitude to others	3.87 (0.87)	3.81 (0.87)	3.43 (0.96)	3.75 (0.96)	3.59 (0.81)	2.79 (1.12)
Desired hedonic balance	3.10 (0.89)	2.17 (1.13)	3.18 (0.85)	3.04 (0.77)	1.87 (1.27)	1.98 (1.39)

relational mobility and individualism), although the Wald tests revealed that coefficients did not differ significantly, South Korea: $F(1, 353) = 3.62, p = .058$; Turkey: $F(1, 264) = 1.17, p = .280$. In India, despite being low in relational mobility and individualism, desired closeness to God was a stronger predictor than desired indebtedness to God, $F(1, 225) = 26.01, p < .001$. In Israel and Poland, the two countries with moderate levels of relational mobility and individualism, the same pattern of results emerged as in the United States and India, Israel: $F(1, 281) = 8.51, p = .004$; Poland: $F(1, 301) = 7.26, p = .007$. Finally, desired hedonic balance never emerged as a significant predictor in any sample.

Next, we ran the same analyses on desired gratitude to God (see Figure 1b; for full regression results, see Supplemental Table A2). Results were highly similar to those for experienced gratitude to

God—desired closeness to God was a stronger predictor than desired indebtedness to God in the United States, $F(1, 620) = 11.83, p < .001$, India, $F(1, 225) = 16.64, p < .001$, Israel, $F(1, 281) = 7.86, p = .005$, and Poland, $F(1, 301) = 12.25, p < .001$, and the opposite pattern emerged in South Korea and Turkey, although the difference between the regressions coefficients was not significant within these samples: South Korea: $F(1, 353) = 2.41, p = .144$; Turkey: $F(1, 264) = 1.20, p = .274$. Once again, desired hedonic balance was not a significant predictor in any sample.

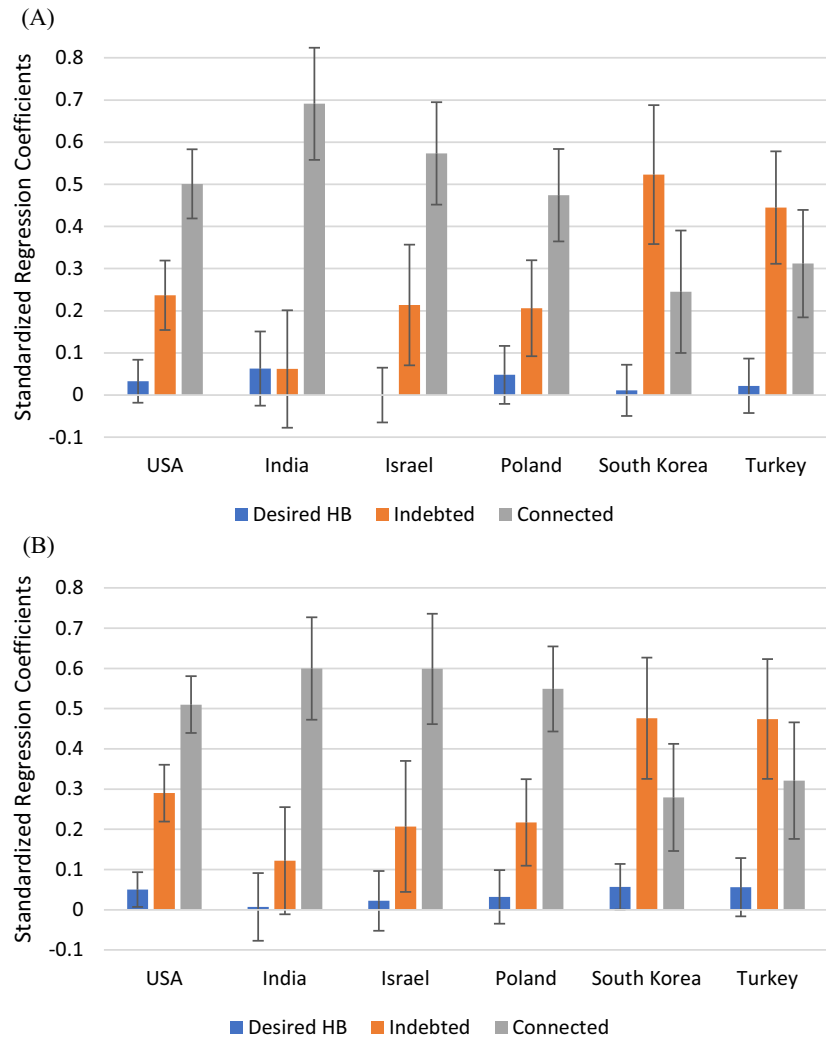
Next, we ran the same analyses on experienced gratitude to others (see Figure 2a; for full regression results, see Supplemental Table A3). As before, results revealed variation across samples in the relative magnitude of the correlates. As expected, desired closeness to others was a stronger predictor than desired indebtedness to others in the

Table 3
Associations With Gratitude Across Samples in Multi-Level Models

Outcome	Predictors	<i>b</i>	<i>SE</i>	<i>DF</i>	<i>t</i>	<i>p</i>	95% CI	Likelihood ratio test	
								$\chi^2(df)$	<i>p</i>
Experienced gratitude to God	Desired hedonic balance	0.03	0.04	6.13	0.72	.500	[-0.06, 0.11]	13.19(1)	<.001
	Desired indebtedness to God	0.19	0.04	4.2	4.51	.010	[0.08, 0.31]	7.17(1)	.007
	Desired closeness to God	0.37	0.04	4.08	10.20	<.001	[0.27, 0.48]	0.27(1)	.601
	Age	0.05	0.02	2063.72	3.11	.002	[0.02, 0.08]		
	Gender	0.22	0.04	2073.38	5.92	<.001	[0.15, 0.30]		
	Religiosity	0.11	0.02	2076.46	4.61	<.001	[0.06, 0.16]		
Desired gratitude to God	Desired hedonic balance	0.05	0.02	6.37	2.64	.036	[0.00, 0.09]	1.85(1)	.174
	Desired indebtedness to God	0.17	0.03	3.92	5.84	.005	[0.09, 0.25]	0(1)	1
	Desired closeness to God	0.32	0.03	3.92	9.92	.001	[0.23, 0.41]	4.03(1)	.045
	Age	0.01	0.01	1947.11	0.70	.487	[-0.02, 0.03]		
	Gender	0.20	0.03	2074.96	6.61	<.001	[0.14, 0.25]		
	Religiosity	0.08	0.02	2076.19	3.90	<.001	[0.04, 0.11]		
Experienced gratitude to others	Desired hedonic balance	0.09	0.03	3.48	3.41	.033	[0.03, 0.15]	0.10(1)	.749
	Desired indebtedness to others	0.18	0.05	5.32	3.80	.011	[0.08, 0.29]	15.02(1)	<.001
	Desired closeness to others	0.20	0.05	5.09	3.71	.013	[0.09, 0.30]	12.75(1)	<.001
	Age	0.06	0.02	2001.36	0.32	.748	[-0.03, 0.04]		
	Gender	0.15	0.04	2069.07	3.38	<.001	[0.06, 0.23]		
	Religiosity	0.09	0.02	2065.20	4.61	<.001	[0.05, 0.12]		
Desired gratitude to others	Desired hedonic balance	0.06	0.03	6.3	2.21	.067	[-0.01, 0.14]	3.56(1)	.059
	Desired indebtedness to others	0.14	0.05	5.19	2.66	.044	[0.01, 0.28]	29.78(1)	<.001
	Desired closeness to others	0.18	0.05	4.99	3.84	.012	[0.06, 0.29]	12.05(1)	<.001
	Age	-0.03	0.02	2066.32	-1.75	.080	[-0.06, 0.00]		
	Gender	0.19	0.04	2067.5	5.06	<.001	[0.12, 0.26]		
	Religiosity	0.13	0.02	2067.15	8.26	<.001	[0.10, 0.17]		

Note. The variable for age was divided by 10, so its regression coefficient reflects change in gratitude for every decade increase in age. Gender was coded such that males = -.5 and females = .5. *SE* = standard error; *DF* = degrees of freedom; *CI* = confidence interval.

Figure 1
Standardized Regression Coefficients of the Correlates of Experienced Gratitude to God (1a) and Desired Gratitude to God (1b) With 95% Confidence Intervals



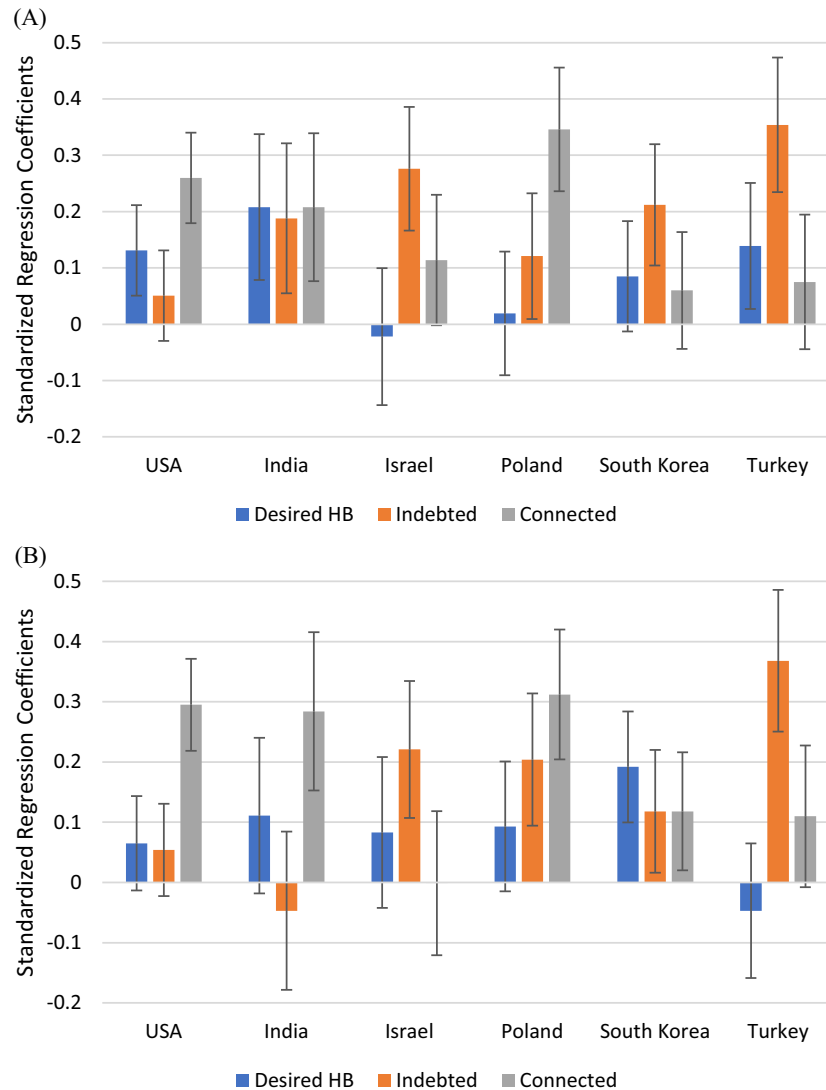
Note. HB = hedonic balance. See the online article for the color version of this figure.

American sample, $F(1, 620) = 9.16, p = .001$, whereas the opposite pattern of findings was obtained in South Korea, $F(1, 353) = 2.99, p = .085$, nonsignificant, and Turkey, $F(1, 264) = 8.11, p = .005$. Results in India once again deviated from expectations, such that the coefficients of desired closeness and indebtedness were very similar, $F(1, 225) = 0.36, p = .849$. Finally, Poland and Israel, the two countries with moderate levels of relational mobility and individualism, had split results: Desire indebtedness was a stronger predictor than desired connectedness in Israel, $F(1, 281) = 3.60, p = .059$, nonsignificant, whereas the reverse pattern emerged in Poland, $F(1, 301) = 6.57, p = .011$. Finally, desired hedonic balance never emerged as the strongest predictor across samples, even though it was a stronger predictor in some samples (e.g., India) than in others (e.g., Israel and Poland).

Finally, we ran the same analyses on desired gratitude to others (see Figure 2b; for full regression results, see Supplemental Table A4).

As expected, desired closeness to others was a stronger predictor than desired indebtedness to others in the American sample, $F(1, 620) = 14.87, p < .001$, whereas the opposite pattern of findings was obtained in Turkey, $F(1, 264) = 7.06, p = .009$. Contrary to expectations, the coefficients of desired closeness and indebtedness were very similar in South Korea, $F(1, 353) = 0, p = .997$, and desired closeness was a stronger predictor than desired indebtedness in India, $F(1, 225) = 10.14, p = .002$. As before, results were split for the countries with moderate levels of individualism and relational mobility, Poland and Israel: Desire indebtedness was a stronger predictor than desired connectedness in Israel, $F(1, 281) = 6.39, p = .012$, whereas the reverse pattern emerged in Poland, although the coefficients did not differ significantly, $F(1, 301) = 1.58, p = .210$. Desired hedonic balance was not the significantly strongest predictor of desired gratitude to others in any sample.

Figure 2
Standardized Regression Coefficients of the Correlates of Experienced Gratitude to Others (2a) and Desired Gratitude to Others (2b) With 95% Confidence Intervals



Note. HB = hedonic balance. See the online article for the color version of this figure.

Discussion

This investigation examined the multifaceted nature of gratitude and its cultural implications. Gratitude can create a sense of obligation and indebtedness (McCullough et al., 2001), which limits autonomy, but it also serves as a positive emotion that enhances positive affect. In individualist cultures where indebtedness is typically aversive (Greenberg, 1980; Watkins et al., 2006), people still value and experience gratitude (Corona et al., 2020). To resolve this paradox, we leveraged the insight that gratitude can have additional functions beyond indebtedness, including promoting interpersonal connections (Algoe et al., 2008). We proposed that in cultures where obligation is normative (cultures lower in individualism and in relational mobility), gratitude may reflect a willingness to be indebted, while in cultures emphasizing personal autonomy (cultures higher in individualism and

in relational mobility), gratitude may reflect preference for interpersonal closeness. Results from six countries with four different assessments of gratitude (desired and experienced gratitude to God, desired and experienced gratitude to others) generally supported these predictions. Among participants from the United States, a country high in individualism and in relational mobility, desire for closeness was a stronger predictor of gratitude than desire for indebtedness in all four assessments. In contrast, the opposite pattern of findings was found in Turkey (in all four assessments) and in South Korea (in three of four assessments), although the within-sample comparisons of the regression coefficients in these two countries were frequently nonsignificant. The two countries in the middle of the individualism–collectivism and relational mobility dimensions (Poland and Israel) typically followed the pattern in the United States, except

for desired and experienced gratitude to others in Israel. The mixed findings in Israel, in which desire for closeness was a stronger predictor than desire for indebtedness on some of the measures of gratitude but a weaker predictor for other measures of gratitude, may reflect Israel's medial position in terms of individualism–collectivism. A noteworthy exception to the predicted pattern of findings was India. Despite being low in individualism, a desire for closeness was a stronger predictor of gratitude than desire for indebtedness in three of four assessments. We return to this unexpected finding below.

Our predictions were based on differences in the samples' national culture. However, samples also differed in their religious affiliation. Nevertheless, even among the samples with the same religious affiliation—Americans, Poles, and South Koreans were all Christian—different patterns of findings emerged. Admittedly, the same religion may manifest itself differently in different cultural contexts, but these differences typically reflect the tendencies of the national culture. For instance, Christianity in Korea is more directed toward maintaining social relationships than in the United States, but this reflects the broader collectivist cultural orientation of Korea (Sasaki & Kim, 2011). Thus, the differences between samples, which we attributed to national culture, are not reducible to differences in religious affiliation.

Understanding Gratitude in India

We consider two explanations for why closeness is a stronger predictor of gratitude than a desire for indebtedness in the Indian sample, despite India being low in individualism. First, the Indian sample was also selected for being Hindu. Within Hinduism, there is a strong emphasis on achieving oneness with God, Brahman, in order to live a meaningful life (Kapur, 2000). Closeness may have emerged as a stronger predictor of gratitude due to this particular religious belief. If this account is correct, the association between closeness and gratitude may be particularly strong among more religious participants. To test this, we conducted a further analysis in which we added an interaction between religiosity and the three motivational correlates (see Supplemental Table A5). Only one interaction between closeness and religiosity emerged as significant, and it was opposite the direction predicted by this explanation: The association between closeness and desired gratitude to God was particularly strong among participants lower (vs. higher) in religiosity.

Therefore, we consider another possible explanation. A key distinction in how social relations are construed is between exchange norms and communal norms (Clark & Mills, 1979). Under exchange norms, benefits are contingent upon return. Under communal norms, benefits are not contingent upon return. Instead, individuals are expected to respond to other's needs if and when those needs arise. Thus, the notion of indebtedness is more central to social relations that are construed in terms of exchange norms (vs. communal norms). Recent work has demonstrated that the reliance on communal norms sets India apart from other cultural regions (Miller et al., 2017). In particular, Indians were found to rely on communal norms, whereas both Americans and Japanese were found to rely on exchange norms. Building on this finding, we suggest that Indians' unique reliance on communal norms—in contradistinction to both highly individualist cultures, such as the United States, and to other East Asian collectivist cultures, such as South Korea—underlies the association between

closeness and gratitude, compared to the association between indebtedness and gratitude.

One critique of this explanation is that it lacks parsimony. In the present investigation, Americans and Indians showed the same pattern of findings, yet in our explanation we suggest that the (otherwise identical) results in each sample have a different underlying explanation. Nevertheless, it is a common phenomenon in cultural psychology that the same outward behavior or expression in two different cultures has two different underlying mechanisms (Kitayama & Salvador, 2024; Kitayama et al., 2022). For instance, East Asians have been found to value low-arousal positive affect, whereas European Americans value high-arousal positive affect (Tsai et al., 2006), and this has been found to map on to European American's value of influencing others rather than adjusting to them (Tsai et al., 2007). However, among members of a different collectivist culture, Mexicans, it was found that high-arousal positive affect is more valued (Ruby et al., 2012), as in the United States. Even so, this was found to be consistent with collectivist values for social engagement (Salvador et al., 2023). Thus, the same expressed preference in two different cultural regions can reflect different underlying motives. Future work is needed to establish that different underlying motivations drive the pattern of findings for Americans and Indians linking gratitude with closeness.

Limitations and Constraints on Generality

A strength of the present investigation is that it included samples from participants in six different countries. One limitation is that all measures are self-reported, and the measures of gratitude experience are retrospective self-reports of state-level feelings. Emotional self-reports may be systematically biased by respondent's beliefs (Robinson & Clore, 2002), and self-reports of issues concerning religion or made by religious samples may be susceptible to self-enhancement concerns (Kelly et al., 2024). Future work can measure gratitude experience directly via experience sampling or diary studies.

An important aspect of cross-cultural research pertains to ensuring that measures capture similar construct across samples. Our tests of measurement invariance based on values for CFI, RMSEA, and SRMR were able to establish at least partial metric invariance, which is sufficient to justify comparing associations between constructs across samples. However, chi-square values were significant for most measures, which suggests that measurement of the constructs could be improved in the future. This is particularly relevant to highly cited measures in the literature included in this survey, such as the RCI (Worthington et al., 2003) and the GQ (McCullough et al., 2002). For the former, modification indices show that five of the 11 parameters that would provide the greatest improvement in fit are for associations with the first item of the RCI ("I often read books and magazines about my faith."). For the GQ (when assessed in reference to gratitude to others), modification indices show that four of the eight parameters that would provide the greatest improvement in fit are for the association between the third and sixth item. We note that these two items are the only reversed-item scores in the GQ. One possibility underlying this finding is that the GQ has a methodological factor distinguishing reverse-scored items from the other items. Future work could seek to improve the invariance of these scales or account for their multifactor structure.

An additional concern regarding measurement pertains to the assessment of the desire to be indebted to others or to God, which

was assessed using a novel scale. Items in this scale assess participants' willingness to be indebted or owe favors to others or to God, as well as being dependent, having obligations, and being reliant on others or to God. The latter items may be criticized for testing overlapping or distinct constructs, such as trust or a general desire for social support. Consequently, we reran the analyses in Table 3 using the two items with higher face validity (extent of wanting to be indebted to others or to God and extent of wanting to owe favors to others or to God). Results revealed few changes in the significance of effects and chiefly for the other predictors (see Supplemental Table A9). These include the likelihood ratio test assessing variability in the by-sample slopes of desired closeness when predicting desired gratitude to God and the likelihood ratio test assessing variability in the by-sample slopes of hedonic balance when predicting desired gratitude to others. The one effect relating to indebtedness that became nonsignificant was for desired indebtedness when predicting desired gratitude to others, $t(5) = 2.41$, $p = .058$, meaning that desired indebtedness was not a significant predictor of desired gratitude to others across samples. Nevertheless, its likelihood ratio test remained significant, indicating significant variability in the by-sample slopes of indebtedness when predicting desired gratitude to others. These findings indicate that similar results are obtained using only the items with higher face validity.

Future Directions

Two noteworthy differences emerged for the associations with gratitude to God compared to the associations with gratitude to others. First, the associations with gratitude to God were notably larger, with several standardized regression coefficients above .40 and as high as .69. Meanwhile, associations with gratitude to others were never above .37. Second, the pattern of results is much more consistent for gratitude to God. The regression coefficients for desired indebtedness versus desired closeness are large and nearly identical for experienced gratitude to God and desired gratitude to God. By comparison, for gratitude to others, results vary by experience and desire. Both of these observed differences may be driven by a single underlying cause: Gratitude to others may have more determinants than gratitude to God, such as the size of one's social network and actual life experience. Meanwhile, gratitude to God is less tangible (Tsang et al., 2022) and more dependent on one's subjective understanding of God and, therefore, less susceptible to external factors, leading to larger and more consistent effects. However, it is not always the case that effects are larger and more stable for gratitude to God (e.g., Rosmarin et al., 2011), so more work is needed to establish the cause of these differences.

The present investigation focused on the motivational correlates of gratitude, which can shed light on cultural differences in how gratitude is construed. It stands to reason that cultural differences in how gratitude is construed may also map on to cultural differences in how gratitude is expressed. One investigation found that in Taiwan, an East Asian collectivist culture, gratitude is expressed by living up to social roles (Chang & Algoe, 2020). This expression of gratitude is consistent with the finding that gratitude is more strongly associated with indebtedness in more collectivist cultures. Another investigation found that gratitude is more likely to be expressed in the United States compared to China, another East Asian collectivist culture, and this reflects the looser expectations people have in the United States toward

close others (Yu & Chaudhry, 2024). In other words, if people have looser social connections they are more willing to express gratitude toward more people. The greater willingness to express gratitude toward acquaintances or strangers is consistent with our finding that gratitude is more weakly linked with indebtedness in more individualist cultures. Investigating the expressions and motivations underlying gratitude across cultures can help inform cultural differences in how social relationships function and are maintained.

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