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## Grateful to God or just plain grateful? A comparison of religious and general gratitude

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Grateful to God or Just Plain Grateful? A Comparison of Religious and Nonreligious Gratitude

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**Abstract**

Psychological science has consistently highlighted the importance of gratitude however links between gratitude and religion remain ambiguous. Does religion enhance gratitude? Is religious gratitude more related to well-being than nonreligious gratitude? We compared religious and nonreligious dimensions of gratitude using cluster analytic and linear statistical methods in a diverse sample of  $n = 420$  adult individuals. Two clusters of participants emerged: (1) A religious gratitude group with high religious and nonreligious gratitude, and (2) a secular gratitude group with low religious and moderate nonreligious gratitude. The religious gratitude group reported markedly higher gratitude and mental well-being than the secular gratitude group, though correlations between gratitude and mental well-being were equivalent in both groups. These results indicate that religious gratitude can enhance both the presence of gratitude and its psychological benefits, and further suggest that ties between gratitude and religion may be intrinsic for many individuals.

Keywords: Gratitude, Religion, Spirituality

## **Grateful to God or Just Plain Grateful? A Comparison of Religious and Nonreligious Gratitude**

Over the past two decades, psychology has turned its attention to the scientific study of gratitude and it is now abundantly clear that gratitude serves a number of psychological functions. Gratitude is associated with a host of positive psychological outcomes such as general well-being, vitality, and happiness (McCullough, Emmons, & Tsang, 2001), positive affect and self-esteem (Kashdan, Uswatte, & Julian, 2006), life satisfaction (Wood, Joseph, & Maltby, 2008), prosocial and generous behavior (Bartlett & DeSteno, 2006) and stronger interpersonal relationships (Algoe, Haidt, & Gable, 2008). A robust literature also suggests that gratitude protects against symptoms of mental illness. Gratitude is associated with lower stress and depression over time (Wood, Maltby, Gillet, Linley, & Joseph, 2007), lower symptoms of posttraumatic stress disorder (Vernon, Dillon, & Steiner, 2009), and even less sleep latency and sleep-related daytime dysfunction (Wood, Joseph, Lloyd, & Atkins, 2009). Moreover, experimentally manipulated gratitude (e.g., writing down things one is grateful for) has been associated with positive impact on emotional functioning (Emmons & McCullough, 2003) and recent attempts to integrate gratitude exercises into clinical psychology interventions have produced improvements in affective and other symptoms (e.g., Seligman, Steen, Park & Peterson, 2005).

One area of gratitude research that remains unclear, however, is its relationship with religion. On the one hand, previous theory and research have highlighted that gratitude and religion are closely tied together. Many world religions have emphasized the importance of gratitude in texts and rituals for literally millennia (Emmons & McCullough, 2003). Furthermore, several prominent definitions of gratitude postulate that this emotion occurs

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exclusively in the context of perceiving benefit at the hands of an agent, such as God (Emmons, 2004; Peterson & Seligman, 2004). The perception of spiritual agents may therefore enhance the experience of gratitude by broadening its application to areas of life that are not interpersonal. Furthermore, any gratitude which is not explicitly interpersonal (e.g., being thankful to another human being) may be implicitly spiritual, in that it seems to imply the existence of non-corporeal entities (see Cohen, 2006 for a discussion).

Empirically speaking, gratitude is positively correlated with religious service attendance (Adler & Fagley, 2005), belief in Divine control (Watkins, Woodward, Stone, & Kolts, 2003), and spiritual transcendence (McCullough, Tsang, & Emmons, 2004), and many of these associations are relatively strong. Recent experimental research has found increases of gratitude associated with increased prayer (Lambert, Fincham, Braithwaite, Graham, & Beach, 2009). Furthermore, a new body of research has found that religious gratitude (i.e., gratitude towards God) has specific effects on depression and stress, particularly among older Christian individuals (Krause, 2006, 2009). On these bases, some have gone as far as to call gratitude a *sacred* or *spiritual* emotion (Emmons, 2005) suggesting that gratitude is enhanced in religious contexts and that the salutary impact of gratitude may be uniquely spiritual.

On the other hand, one could argue that gratitude also appears to be dissociable from religious life. Religious and spiritual dimensions of life are not *sine qua non* for gratitude, as nonreligious individuals can experience and report high levels of gratitude, yielding tangible social and psychological benefits without any connection to religion or spirituality. To this end, gratitude has also been defined and conceptualized as a non-spiritual psychological process, such as “affective trait” (McCullough, Emmons, & Tsang, 2002) or “moral affect” (McCullough, Kirkpatrick, Emmons, & Larson, 2001).

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We are not aware of any previous studies that have attempted to tease religious and nonreligious dimensions of gratitude apart, or examined religious and nonreligious gratitude contemporaneously to facilitate a comparison of these constructs. Furthermore, most studies on religious gratitude have been with older individuals and almost all research has been done with Christians. More fundamentally, virtually all previous research in this area has utilized linear statistics (e.g., regression, analysis of variance). Given that religious and nonreligious forms of gratitude may be highly intertwined (i.e., collinear), linear statistical approaches may be inappropriate to compare their effects. Furthermore, recent research has highlighted the importance of examining not only direct relationships between spiritual/religious factors and psychological functioning, but individual differences in spiritual/religious factors contributing to health and illness (Pirutinsky, et al., in press). For example, clinically relevant differences in depression have been observed when comparing clusters of individuals who are high on both faith and meaning, versus high on faith and low on meaning (Kristeller, Sheets, Johnson, & Frank, in press). Similarly, to understand the relationship between religious and nonreligious dimensions of gratitude, it may be important to examine not only direct relationships of these variables to psychological functioning, but their interplay.

We therefore sought to compare and contrast religious and nonreligious dimensions of gratitude in a diversely religious sample across the adult lifespan. Our two main questions are: (1) whether gratitude is enhanced when it is understood in a religious context relative to secular contexts, and (2) whether religious gratitude shows greater benefits than nonreligious gratitude. Based on previous research, we anticipated that general religiosity would be correlated with both religious and nonreligious gratitude, and that all of these variables would predict better well-being and less distress. We further sought to identify profiles of individuals' religious and



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nonreligious gratitude using cluster analytic methods, in order to compare and contrast the relevance of these potentially intertwined factors to mental and physical health.

### **Method**

#### **Participants**

A total of  $n = 405$  adults (aged 18 years or older) completed an on-line survey. In order to recruit a diverse sample, multiple methods of recruitment were utilized across two waves: (1) 140 community-dwelling individuals were recruited with the help of community organizations (e.g., synagogues, churches, learning centers), internet outlets (e.g., announcement groups, event listings, and discussion forums), and word of mouth (i.e., participants were asked to inform their friends and family members about the study to aid recruitment); (2) 265 university students were recruited via e-mail distributions facilitated through psychology departments, campus organizations, and word of mouth<sup>1</sup>. Demographics of the sample are presented in Table 1. Levels of belief in God were comparable to the U.S. general population (Gallup, 2008) in that 77.3% of the sample reported moderate or greater belief in God, 4.4% reported slight belief (e.g., past belief but not currently) and 3.0% reported no belief. Levels of importance of religion were slightly higher than in the general population (Gallup, 2009); 71.4% reported that religion is very or moderately important in their lives whereas 13.6% of the sample reported that religion has slight importance (e.g., no engagement and no desire for increase) or no importance at all.

#### **Measures**

**Gratitude.** Gratitude was measured using the 6-item Gratitude Questionnaire (GQ; McCullough, Emmons, & Tsang, 2002), a reliable and validated self-report measure of the general disposition to experience gratitude. Items are not explicitly religious in phrasing (e.g., I

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<sup>1</sup> Note: Approximately 100 of the Christian students were provided with course credit for their participation. Other participants received no compensation.

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have so much in life to be thankful for; If I had to list everything that I felt grateful for, it would be a very long list). The measure utilizes a 7-point Likert-type scale ranging from “strongly disagree” to “strongly agree” and higher scores indicate higher levels of gratitude. The GQ has previously demonstrated good psychometric properties (McCullough, Emmons, & Tsang, 2002) and internal reliability in our sample was high ( $\alpha = .83$ ).

**Religious Gratitude.** To measure religious gratitude, we adapted the GQ such that each item would refer specifically to God (e.g., I have so much in life to be thankful to God for; If I had to list everything that I felt grateful to God for, it would be a very long list). Anchors were left unchanged from the original measure. The resulting Religious Gratitude Questionnaire (RGQ) was internally consistent ( $\alpha = .83$ ) in the sample. Further, both a factor analysis (principal components) and a parallel analysis (O’Connor, 2000) suggested that all six items load on a single factor, accounting for 72.03% in scale variance.

**Religiosity.** Religiosity was measured using five items assessing the following dimensions: degree of belief in God; importance of religion in general; importance of religious identity; extent to which religious beliefs lie behind approach to life; extent of carrying over religion into other dealings in life. All items were rated using a 5-point Likert-type scale ranging from “very” to “not at all” with higher scores indicating greater levels of general religiosity. Items were reviewed by Jewish and Christian religious leaders and determined to use appropriate language for both groups. Items were subjected to a principal components factor analysis (Direct Oblimin rotation) and all loaded highly ( $>.80$ ) on single factor (eigenvalue  $> 3.58$ ) accounting for 72% of the variance. Consequently these items were summed to form a single internally consistent ( $\alpha = .90$ ) measure.

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**Happiness.** Happiness was assessed using the 4-item Subjective Happiness Scale, a measure of global subjective happiness which boasts excellent psychometric properties from numerous studies around the world (SHS; Lyubomirsky & Lepper, 1999). Items are rated on a 7-point Likert-type scale and higher scale scores indicate greater levels of happiness. Internal consistency in the sample was high ( $\alpha = .89$ ).

**Satisfaction with Life.** We utilized the 5-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larson, & Griffin, 1985) to assess for participants' satisfaction with life as a whole. Participants rate the degree to which they agree/disagree with statements about their life (e.g., The conditions of my life are excellent) using a 7-point Likert-type scale ranging from "strongly disagree" to "strongly agree". Previous psychometric properties have been good and internal consistency in the sample was high ( $\alpha = .85$ ).

**Positive/Negative Affect.** We included the widely utilized Positive and Negative Affect subscales from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). These two scales assess for the two most dominant dimensions of emotional experience. Participants rate the extent to which they have felt positive (e.g., active, alert) and negative (e.g., afraid, scared) emotions over the past few weeks on a 5-point Likert-type scale ranging from "very" to "not at all". The PANAS has consistently demonstrated excellent psychometric properties and internal consistency in the sample was high ( $\alpha = .88$  for both Positive and Negative subscales).

**Physical/Mental Health.** We assessed for physical and mental health with the 12-item Short-Form Health Survey (SF-12; Ware, Kosinski, & Keller, 1996). Two summary scores measure physical (e.g., physical functioning, pain) and mental health (e.g., vitality, calmness, functional impairment due to depression) over the past four weeks. Scores range from 0 to 100

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and are scaled based on American national norms, with lower scores indicating poorer health and functioning. This measure has previously demonstrated excellent psychometric properties (Gandek et al., 1998; Ware, Kosinski, & Keller, 1996).

### **Procedure**

Participants completed an internet-based survey. The order of the GQ and RGQ measures was randomly counterbalanced across subjects such that after providing informed consent, participants completed demographic items (age, gender, marital status, education and religious affiliation), one of the two gratitude scales (GQ or RGQ), measures of religiosity, happiness, satisfaction with life, positive/negative affect and physical/mental health, and the remaining gratitude measure. The GQ was completed before the RGQ by 49.4% of the sample, and the order was reversed for the remaining 50.6% of participants.

### **Analyses**

Preliminary analyses were conducted to determine correlations between study variables. Then, to explore the potentially complex interplay of religious and nonreligious gratitude in the sample, we identified profiles of individuals based on these two variables using cluster analytic methods. Subsequently, we examined characteristics of each cluster by comparing their respective levels of religious and nonreligious gratitude, religiosity, and mental/physical well-being. We further examined correlations of religious and nonreligious gratitude to other variables within each group. Bonferroni correction was employed for multiple comparisons.

## **Results**

### **Preliminary Analyses**

A correlation matrix of all study variables for the sample as a whole is presented in Table 2. GQ and RGQ scores were highly correlated ( $r = .66, p < .001$ ) and both were associated with

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religiosity ( $r = .45$  for GQ;  $r = .72$  for RGQ,  $p < .001$ ). Both GQ and RGQ were correlated significantly with all other study variables ( $r$ s ranging from  $-.36$  to  $.52$ ,  $p < .001$ ) except for physical health. No biases due to counterbalancing were detected in that RGQ and GQ were evenly distributed between both forms of the questionnaire ( $t(403) = 1.74$   $p = .08$  for RGQ;  $t(403) = 1.22$   $p = .22$  for GQ).

### Cluster Analysis

To identify profiles of individuals based on their levels of religious and nonreligious gratitude, we conducted a hierarchical cluster analysis. Following the recommendations of Milligan (1980), squared Euclidean distance (average linkage) was calculated, which agglomerated individual participants based in their similarity in GQ and RGQ scores in order to determine the appropriate number of clusters and cluster centroids. Results suggested that there were two distinct groups of participants within the sample. To cross-validate and optimize these results, we then conducted a K-means analysis by dividing participants into two clusters and iteratively reassigning participants to the nearest cluster centroid. Centroids were then recalculated until reaching a stable solution. The hierarchical and K-means methods yielded a highly analogous solutions ( $\chi^2(405) = 393.85$ ,  $p < .001$ ), confirming the presence of two distinct clusters of participants. Clusters were comprised of  $n = 311$  and  $n = 94$  participants (77% and 23% of the sample), respectively.

To identify the characteristics of each cluster, we conducted a series of  $t$ -tests to compare levels of GQ, RGQ and religiosity between the two groups, followed by an examination of inter-correlations of these variables within each group (Tables 3 & 4). The first cluster reported high levels of both RGQ and GQ, and high levels of religiosity. The second cluster reported low levels of RGQ, low to moderate levels of GQ, and very low levels of religiosity. Differences

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between the groups in all of these variables were significant ( $t$ s ranging from 4.10 to 28.26,  $p < .001$  for all comparisons), and effect sizes were extremely large (Cohen's  $d = 3.34$  for religious gratitude, 2.12 for nonreligious gratitude, and 1.76 for religiosity). Within the first group, GQ was highly correlated with RGQ ( $r = .68, p < .001$ ) and moderately correlated with religiosity ( $r = .48, p < .001$ ). By contrast, within the second group, GQ was unrelated to both RGQ ( $r = -0.04, ns$ ) and religiosity ( $r = -.09, ns$ ).

Thus, our cluster analysis revealed the presence of two groups of participants characterized by religious gratitude, and secular gratitude. The religious gratitude group, comprised of the majority of the sample, was moderately to highly religious and had high RGQ and GQ scores. Further, within this group, RGQ and GQ were highly correlated. By contrast, a considerable minority of participants, comprising the secular gratitude group, reported low levels of religious involvement, low levels of RGQ and low to moderate levels of GQ. Within this latter group, GQ and RGQ were unrelated.

With regards to demographic variables, the two groups were equivalent in age ( $t(403) = .58, ns$ ) and had equal numbers of university students ( $\chi^2(1, 405) = .38, ns$ ), college graduates ( $\chi^2(1, 405) = .04, ns$ ), married participants ( $\chi^2(1, 405) = 3.24, ns$ ), Jewish participants ( $\chi^2(1, 405) = 1.35, ns$ ) and Christian participants ( $\chi^2(1, 405) = 1.35, ns$ ). Randomized order of the questionnaire was also evenly distributed between the groups ( $\chi^2(1, 405) = .11, p = .74$ ). However, groups did differ in terms of gender ( $\chi^2(1, 405) = 19.34, p < .001$ ) and Orthodox Jewish affiliation ( $\chi^2(1, 405) = 12.99, p = .002$ ) such that the religious gratitude group had a higher percentage of females and more Orthodox Jews compared to the secular gratitude group.

### **Religious vs. Secular Gratitude**

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To explore potential differences in the psychological and physical health effects of religious and secular gratitude, we compared mean levels of all measures between the two groups (see Table 3). The religious gratitude group reported significantly greater happiness ( $t(403) = 7.72, p < .001$ ), life satisfaction ( $t(403) = 7.26, p < .001$ ), positive affect ( $t(403) = 7.59, p < .001$ ), and mental health ( $t(403) = 4.16, p < .001$ ), as well as lower negative affect ( $t(403) = 5.50, p < .001$ ), than the secular gratitude group. Group differences were moderate to large in size (Cohen's  $d$ s ranging from .48 to .91; mean difference = .76). No differences in physical health were observed in comparing the two groups. To examine the potential clinical relevance of these differences, normative values of the PANAS (Watson & Clark, 1994) and SF-12 Mental Health Subscale (Ware, Kosinski, & Keller, 1995) were examined<sup>2</sup>. Levels of both positive and negative affect in the secular gratitude group were within 1 *SD* of normative values for clinical samples, whereas means for the religious gratitude group were out of this range. With regards to mental health, levels for both groups were within 1 *SD* of the U.S. general population mean.

To further explore these relationships, we examined correlations of GQ and RGQ to other study measures in both groups separately. In the religious gratitude group, GQ scores predicted greater happiness ( $r = .37, p < .001$ ), satisfaction with life ( $r = .29, p < .001$ ), positive affect ( $r = .36, p < .001$ ), and mental health ( $r = .26, p < .001$ ), and lower negative affect ( $r = -.23, p < .001$ ), but were unrelated to physical health ( $r = -.08, ns$ ). RGQ scores were similarly correlated with all variables. In the secular gratitude group, GQ scores were related to psychological health ( $r$ s ranging from  $-.32$  to  $.45, p < .001$ ) but RGQ scores were not correlated with any variable. A formal test of moderation using multiple regression (Aiken & West, 1991) found no group interactions for GQ scores, suggesting that the linear relationships of GQ to mental health

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<sup>2</sup> Normative values for the Subjective Happiness Scale and Satisfaction with Life Scale were not available to facilitate similar comparisons.

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measures were equivalent for both groups ( $\beta = .02$  through  $.05$ , *ns*). In contrast, RGQ was significantly more relevant to mental health in the religious gratitude group ( $\beta = .36$  through  $.12$ ,  $p < .001$ ) with the exception of the SF-12 Mental Health Subscale ( $\beta = .12$ , *ns*).

### Discussion

Previous research on gratitude has identified important ties between this dimension of human life and religion. However, the extent to which religious and nonreligious gratitude overlap and their relative relationships to well-being have been unclear. Further, linear statistical methods utilized in most previous research are not suitable to tease apart religious from nonreligious facets of gratitude given that they are potentially intimately intertwined. Therefore, in this study, we utilized cluster analytic methods in attempt to unravel the complex relationship between these variables.

Our results revealed the presence of two distinct clusters or groups: (1) a religious gratitude group, representing roughly three quarters of our sample, and (2) a secular gratitude group, representing about one quarter of the sample. Religious and nonreligious dimensions of gratitude were highly correlated within the former group but uncorrelated in latter group. Further, the religious gratitude group reported higher levels of religiosity, and were more likely to report Orthodox Jewish affiliation. Taken together, these results suggest that religious and nonreligious gratitude are similar processes for many people, but for a subset of individuals they are disparate. More specifically, for individuals who are grateful to God, gratitude may have strong spiritual meaning and religious themes. For individuals who are just plain grateful, however, gratitude may simply be an affective trait that is not spiritual in nature. Further, the degree to which religious and nonreligious dimensions of gratitude overlap for a given individual



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may be a function of religiosity and religious culture and context (e.g., general religiosity or Orthodox affiliation).

A number of important and interesting differences emerged when comparing the religious and secular gratitude groups. First, those with religious gratitude reported markedly higher levels of nonreligious gratitude. The surprisingly large magnitude of this difference ( $>3$  *SDs*) suggests that religion can greatly enhance the experience of gratitude. This may be due to the importance of gratitude placed within religious traditions, and the fact that gratitude is often the focus of religious activity (e.g., prayers of thanks). Religious and spiritual contexts may thus be fertile ground for the development of gratitude. More centrally, however, religious beliefs may provide unique opportunities to experience gratitude. While interpersonal gratitude (i.e., gratitude to another human being) can occur in the absence of religion, gratitude towards God can, by definition, only occur in the context of religion or spirituality. Further, even positive happenstance (e.g., finding money on the street) or the simple recognition of blessings in one's life (e.g., the capacity to walk) may be catalysts for gratitude towards God, though such events are less likely to facilitate interpersonal gratitude. Religion may thus uniquely facilitate the emotion gratitude through the perception of a larger set of agents, and the broadening of circumstances in which gratitude can occur.

It was further observed that the religious gratitude group fared better on measures of happiness, life satisfaction, positive and negative affect, and mental health than those with secular gratitude. All differences between groups were moderate to large in magnitude (mean difference  $.76$  *SDs*), and differences in positive and negative affect were clinically meaningful. However, linear relationships between gratitude and all measures were observed in both groups such that gratitude was associated with greater happiness, life satisfaction, positive affect and

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mental health, and less negative affect. These results suggest a highly nuanced relationship between religious and nonreligious gratitude and psychological well-being. On the one hand, gratitude seems to be associated with well-being irrespective of religious themes. This suggests that regardless of whether an individual's gratitude has spiritual meaning, the experience of gratitude may facilitate positive psychological states. On the other hand though, it appears that religious gratitude has an additional positive effect on emotional and mental functioning. These findings may have implications for the burgeoning science of utilizing positive psychology in clinical practice. While considerable experimental evidence now suggests that activities aimed at enhancing positive emotions, behaviors and cognitions can produce shifts in human affect over time (e.g., Burton & King, 2004; Emmons & McCullough, 2003; Lyubomirsky, Sheldon & Schkade, 2005) more recently efforts have been forged to utilize such activities as in the context of clinical interventions (Seligman, Steen, Park & Peterson, 2005) and initial meta-analytic findings in this area have been encouraging (Sin & Lyubomirsky, 2009). Given the robust effects of religious gratitude on emotional well-being within this study, it is possible that the integration of explicit spiritual themes into gratitude interventions may be particularly beneficial for the facilitation of emotion change. It is therefore worth noting that in a recent randomized controlled trial, a brief (2-week) spiritually-integrated treatment involving religious gratitude exercises produced dramatic decreases in stress, worry and depression in a large sample of Jewish individuals (Rosmarin, Pargament, Pirutinsky, & Mahoney, 2010).

This study has a number of limitations that should be noted. First, the majority of the sample reported Jewish or Christian affiliation and no participants reported Muslim or Hindu affiliation. While Jewish/Christian affiliation was evenly distributed among the grateful to God and just plain grateful groups, Orthodox Jewish affiliation was more common to the former

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group. It is therefore quite possible that other religious cultures may facilitate religious or nonreligious gratitude and further research in other populations is warranted. Similarly, while levels of belief in God were similar to those of the U.S. population as a whole, religious involvement was slightly higher than national averages. Further, the sample obtained was a self-selecting group, all measures were administered via the Internet, and no experimental manipulations of religious or nonreligious gratitude were employed. Given the complex interplay of these factors, further research on religious and nonreligious gratitude with nationally-representative samples, using more sophisticated methods of data collection and research design appear to be warranted. In the meantime, we are grateful to have completed this investigation highlighting points of convergence and divergence between being grateful to God and just plain grateful.

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## Religious & Nonreligious Gratitude

**Table 1.**

*Participant Demographics (n = 405).*

<i>Variable</i>	<i>Mean/Frequency</i>
Age	28.09 (14.64)
Gender (Female)	139 (65.7%)
Married	106 (26.2%)
College Graduate	148 (36.7%)
Religious Affiliation	
Jewish – Orthodox	101(24.9%)
Jewish – Non-Orthodox	47 (11.6%)
Christian – Protestant	91 (22.5%)
Christian – Catholic	36 (8.9%)
Other or None	130 (32.1%)

*Notes:* Mean and standard deviation are presented for age; frequencies and proportion of sample size are presented for other variables.

## Religious & Nonreligious Gratitude

**Table 2.**

*Correlation matrix of study variables (n = 405).*

	1	2	3	4	5	6	7	8	9
1) Gratitude	-								
2) Religious Gratitude	.66**	-							
3) Religiosity	.45**	.72**	-						
4) SHS	.52**	.38**	.25**	-					
5) SWLS	.49**	.34**	.16**	.56**	-				
6) PANAS-N	-.36**	-.24**	-.18**	-.50**	-.42**	-			
7) PANAS-P	.51**	.36**	.21**	.63**	.52**	-.35**	-		
8) Physical Health	.07	.03	.07	.02	.15*	-.01	.20**	-	
9) Mental Health	.37**	.21**	.10	.56**	.50**	-.66**	.51**	-.11*	-
<i>Mean</i>	36.83	35.84	20.78	21.19	25.00	20.26	36.90	54.39	44.91
<i>SD</i>	5.24	7.40	4.86	4.74	6.43	6.86	6.67	7.90	9.49
<i>Range</i>	11-42	6-42	5-25	4-28	5-35	10-50	11-50	19 - 67	8 – 63

*Notes: \*p < .01; \*\*p < .001*

## Religious & Nonreligious Gratitude

**Table 3.**

*Differences between “religious gratitude” and “nonreligious gratitude” groups.*

	Religious Gratitude Group		Nonreligious Gratitude Group		<i>t</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Gratitude (GQ)	38.75	3.11	30.48	5.84	28.26*	3.34
Religious Gratitude (RGQ)	39.15	2.98	24.88	7.08	17.97*	2.12
Religiosity	22.37	3.21	15.52	5.64	14.90*	1.76
Happiness	22.12	4.09	18.10	5.39	7.72*	.91
Life Satisfaction	26.10	5.58	21.03	7.40	7.26*	.86
Positive Affect	38.19	5.68	32.61	7.86	7.59*	.90
Negative Affect	19.26	6.39	23.55	7.33	5.50*	.65
Physical Health	54.87	7.08	52.83	10.05	2.19	.23
Mental Health	45.96	7.08	41.46	8.70	4.10*	.48

*Notes:* Groups identified by cluster analysis (Milligan, 1980). \* $p < .001$ ;  $d$  = Cohen’s D statistic.

## Religious & Nonreligious Gratitude

**Table 4.**

*Correlations of religious and nonreligious gratitude with outcome variables within groups.*

	Religious Gratitude Group		Nonreligious Gratitude Group	
	GQ	RGQ	GQ	RGQ
Gratitude (GQ)	—		—	
Religious Gratitude (RGQ)	.68*	—	-.04	—
Religiosity	.25*	.48*	-.09	.53*
Happiness	.37*	.39*	.45*	-.08
Life Satisfaction	.29*	.25*	.49*	-.01
Positive Affect	.36*	.32*	.45*	-.04
Negative Affect	-.23*	-.25*	-.32*	.19
Physical Health	-.08	-.12	.08	-.08
Mental Health	.26*	.26*	.42*	-.11

*Notes:* \* $p < .001$ .