

The Grateful Disposition: A Conceptual and Empirical Topography

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In four studies, the authors examined the correlates of the disposition toward gratitude. Study 1 revealed that self-ratings and observer ratings of the grateful disposition are associated with positive affect and well-being, prosocial behaviors and traits, and religiousness/spirituality. Study 2 replicated these findings in a large nonstudent sample. Study 3 yielded similar results to Studies 1 and 2 and provided evidence that gratitude is negatively associated with envy and materialistic attitudes. Study 4 yielded evidence that these associations persist after controlling for Extraversion/positive affectivity, Neuroticism/negative affectivity, and Agreeableness. The development of the Gratitude Questionnaire, a unidimensional measure with good psychometric properties, is also described.

Gratitude, as it were, is the moral memory of mankind.

—Georg Simmel

The gratitude of most men is but a secret desire of receiving more benefits.

—La Rochefoucauld

Despite centuries of reflection, scholars in the humanities continue to debate whether the disposition to be grateful is a trait worthy of admiration or of contempt. In one camp, philosophers such as Seneca, Adam Smith, and Georg Simmel have praised the value of a grateful disposition for individual and social well-being. In another, figures such as Aristotle, Epicurus, and La Rochefoucauld have concluded that manifestations of gratitude are no more than thin veils over human beings' self-interest, or messy emotional ties that make people unnecessarily beholden to their benefactors (Harpham, 2000; Roberts, 2000).

Psychologists have done little to contribute to this centuries-old debate (McCullough, Kilpatrick, Emmons, & Larson, 2001). However, psychology's inattention to gratitude belies the considerable individual differences in gratitude of which laypersons are aware. People easily call to mind individuals in their lives who seem to be

grateful almost to a fault and others who seem perfectly qualified for the infamous label "ingrate." Are these individual differences real? Do people who consider themselves grateful also appear grateful to others? What are the typical characteristics of people who demonstrate a grateful disposition? What is the relationship of gratitude to measures of affect, prosociality, and spirituality? Psychology is perfectly positioned to help illuminate the nature of gratitude and its place in human functioning.

Gratitude as an Affective Trait

Rosenberg (1998) proposed that the common forms of affective experience could be structured hierarchically according to specificity, temporal stability, pervasiveness in consciousness, and effects on other psychological systems. Rosenberg placed affective traits, defined as "stable predispositions toward certain types of emotional responding" that "set the threshold for the occurrence of particular emotional states" (p. 249) at the top of the hierarchy. She considered moods, which "wax and wane, fluctuating throughout or across days" (p. 250), as subordinate to affective traits, and emotions, which are "acute, intense, and typically brief psychophysiological changes that result from a response to a meaningful situation in one's environment" (p. 250), as subordinate to both affective traits and moods.

Gratitude, like other affects, conceivably could exist as an affective trait, a mood, or an emotion. The present article is concerned primarily with gratitude as an affective trait that we call the *grateful disposition* or *disposition toward gratitude*. We define the grateful disposition as a generalized tendency to recognize and respond with grateful emotion to the roles of other people's benevolence in the positive experiences and outcomes that one obtains.

Facets of the Grateful Disposition

Affective traits lower one's threshold for experiencing certain emotional states (Rosenberg, 1998). For example, hostility lowers

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the threshold for experiencing anger. Insofar as the grateful disposition creates a reduced threshold for recognizing and responding with gratitude to the role of other people's benevolence in one's positive outcomes, this disposition might cause several discrete emotional experiences. We use the term *facets* to refer to the following elements of the grateful disposition rather than the term *dimensions* because we suspect that these elements are not distinct or independent but, rather, co-occur.

The first facet of the grateful disposition can be called *intensity*. A dispositionally grateful person who experienced a positive event is expected to feel more intensely grateful than would someone less disposed toward gratitude. A second facet can be called *frequency*. A dispositionally grateful person might report feeling grateful many times each day, and gratitude might be elicited by even the simplest favor or act of politeness. Conversely, for someone less disposed toward gratitude, gratitude would be experienced less frequently. A third facet can be called *span*. Gratitude span refers to the number of life circumstances for which a person feels grateful at a given time. Dispositionally grateful people might be expected to feel grateful for their families, their jobs, their health, and life itself, along with a variety of other benefits. People less disposed to gratitude might experience gratitude for fewer aspects of their lives. A fourth facet can be called *density*, which refers to the number of persons to whom one feels grateful for a single positive outcome. When asked to whom one feels grateful for a certain outcome (say, obtaining a good job), a dispositionally grateful person might list many other people, including parents, friends, family, and mentors. Someone less disposed toward gratitude might feel grateful to fewer people for the same outcome.

The Grateful Disposition and Attributional Breadth

The grateful disposition is not merely a tendency to experience a particular affect (i.e., gratitude); it also emerges from particular attributions regarding the causes of one's positive outcomes. Weiner (1986) proposed that gratitude became distinct from happiness through a two-step process. First, people recognize that they have obtained a positive outcome, which causes happiness. Second, people attribute their happiness to an external source (viz., another person who acted intentionally), and consequently, happiness is labeled as gratitude. Thus, attributions are central to gratitude, and attributional style may be central to the disposition toward gratitude.

Attribution theory in its basic (e.g., Weiner, 1986, 1995) and clinical (Abramson, Seligman, & Teasdale, 1978) formulations sets the stage for hypotheses regarding the attributional style of dispositionally grateful people. Weiner's (1986) insights lead to the hypothesis that dispositionally grateful people tend to attribute their positive outcomes to the effort of other people. Correspondingly, dispositionally grateful people might seem less likely to attribute their successes and good fortune to their own efforts or positive qualities, and thus, more prone to the psychological difficulties associated with the externalizing attributional style (e.g., Abramson et al., 1978; Gladstone & Kaslow, 1995).

However, the fact that grateful people tend to recognize the benevolence of other people in their positive outcomes does not necessarily mean that they discount their own causal effort. Instead, what might distinguish grateful people is an ability to stretch their attributions to incorporate the wide range of people who

contribute to their well-being. The thirteenth century theologian and philosopher Thomas Aquinas (cited in Harpham, 2000) observed that recognizing the many people who contribute to one's positive outcomes was essential to gratitude:

The nature of a debt to be paid must needs vary according to various causes giving rise to the debt, yet so that the greater always includes the lesser. Now the cause of debt is found primarily and chiefly in God, in that He is the first principle of all our goods: secondarily it is found in our father, because he is the proximate principle of our begetting and upbringing: thirdly it is found in the person that excels in dignity, from which general favors proceed; fourthly it is found in a benefactor, from whom we have received particular and private favors, on account of which we are under particular obligation to him. (Summa Theologica, Question 106, Article 1)

Consider two successful Olympic swimmers—one more and one less dispositionally grateful. The grateful swimmer would, no doubt, recognize her own effort in obtaining an Olympic gold medal. However, because of her grateful disposition, she may also recognize other people's benevolent contributions to her success in addition to her own effort. For example, she also might attribute her success to the effort of her coaches, her parents, teachers who tolerated her demanding workout schedule, and even teammates or competitors who challenged her to swim at her best. Clearly, some of these people had strong and direct influences on her success, whereas others' influences may have been more distal and subtle. Conversely, a less grateful Olympic swimmer might not consider the full range of people who contributed (albeit perhaps distally and subtly) to her success, and might therefore attribute her success solely to her own effort. Thus, the distinctive attributional quality of grateful people may not be that they have a more externalizing style of attributions for their positive outcomes, but rather, that they recognize the many people who contribute to their positive outcomes.

Personality Correlates of the Grateful Disposition: A Superordinate Traits Analysis

Given the preceding analysis, we suspect that the grateful disposition is linked to other personality traits, most notably (a) positive affective traits and well-being, (b) prosocial traits, and (c) religion/spirituality. To some extent, the correlations of the grateful disposition with these three clusters of individual differences might be explained in terms of the Big Five (John & Srivastava, 1999) or Five-Factor (McCrae & Costa, 1999) personality taxonomy.

The Emotions and Well-Being of Grateful People

Grateful people may be prone to positive emotions and subjective well-being. Several theorists and researchers (e.g., Lazarus & Lazarus, 1994; Mayer, Salovey, Gomberg-Kaufman, & Blainey, 1991; Ortony, Clore, & Collins, 1988; Weiner, 1986) have noted that gratitude typically has a positive emotional valence. From this fact, we surmise that the disposition toward gratitude is rooted in basic tendencies to experience positive emotions and subjective well-being. However, there are other reasons to expect that grateful people experience positive emotions and heightened well-being: Seeing oneself as the beneficiary of other people's gener-

osity may lead one to feel affirmed, esteemed, and valued, which may boost self-esteem and perceived social support. Moreover, highly grateful people may possess a worldview in which everything they have—and even life itself—is a gift. This level of appreciation for the good things in one's life may lead grateful people to avoid taking benefits for granted. As a result, they may be less prone to habituate to positive life circumstances, which might also help sustain their happiness and subjective well-being over time.

Invoking the Big Five taxonomy, we hypothesized that dispositionally grateful people have high levels of Extraversion/positive affectivity and low levels of Neuroticism/negative affectivity because these two superordinate personality dimensions are highly relevant to emotional experience. We also suspected that grateful people experience higher levels of other specific positive emotions such as happiness, vitality, optimism, and hope, as well as greater satisfaction with life. Conversely, we suspected that they tend to experience low levels of negative emotions such as anxiety, depression, and envy.

The Prosocial Traits of Grateful People

Gratitude has been called an "empathic emotion" (Lazarus & Lazarus, 1994) because it is predicated on the capacity for recognizing the beneficial actions of other people in one's life. McCullough et al. (2001) proposed that gratitude is relevant to the moral domain in the same way that affects such as guilt (Tangney, 1991), shame (Keltner & Buswell, 1996), empathy (Batson, 1991), and even contempt, anger, and disgust (Rozin, Lowery, Imada, & Haidt, 1999) are morally relevant. Specifically, gratitude might be considered a prosocial affect because it is a response to behaviors that other people enact to contribute to one's welfare, and may actually motivate such behaviors in turn (McCullough et al., 2001; McCullough & Tsang, in press).

The prosocial nature of gratitude suggests the possibility that the grateful disposition is rooted in the basic traits that orient people toward sensitivity and concern for others. Again invoking the Big Five taxonomy, we suggest that grateful people may tend to be higher in Agreeableness, which appears to facilitate prosocial and other-oriented behavior (Koole, Jager, van den Berg, Vlek, & Hofstee, 2001). Indeed, Saucier and Goldberg (1998) reported that a two-item personality measure consisting of the adjectives *grateful* and *thankful* was correlated $r = .31$ with Agreeableness. Moreover, one might expect the disposition toward gratitude to be related to other traits that emerge from Agreeableness such as a capacity for empathy, willingness to forgive, and a tendency to offer help and support to others. Grateful people probably are also disinclined to experience negative interpersonal emotions such as envy, which is not simply a negative affect, but rather a type of negative emotion (viz., resentment and disdain) that is directed specifically at other people (Smith, Parrott, Diener, Hoyle, & Kim, 1999). Relatedly, we expect that dispositionally grateful people are less concerned with materialistic pursuits, which would be somewhat incompatible with a focus on generosity and helpfulness.

The Spiritual Traits of Grateful People

Just as gratitude accompanies the recognition of the positive contributions of other people to one's well-being, dispositionally

grateful people may also be oriented toward recognition of non-human forces that might contribute to their well-being in a broader, more existential sense (viz., luck, chance, God, or some other conception of the divine). Stated another way, grateful people may tend to be spiritually inclined—a trait that is surprisingly distinct from the Big Five (Piedmont, 1999; Saucier & Goldberg, 1998).

Justification for this hypothesis comes from several sources. First, many world religions commend gratitude as a desirable human trait (see Carman & Streng, 1989; Emmons & Crumpler, 2000), which may cause spiritual or religious people to adopt a grateful outlook. Second, when confronted with a positive outcome that cannot be attributed to intentional human effort, such as a lovely sunset or the gift of sight, spiritually inclined people may still be able attribute these positive outcomes to a human or nonhuman agent (viz., God or a higher power) and thus, experience more gratitude. Third, spiritually inclined people also tend to attribute positive outcomes to God's intervention, but not negative ones (Lupfer, De Paola, Brock, & Clement, 1994; Lupfer, Tolliver, & Jackson, 1996). As a result, many positive life events that are not due to the actions of another person (e.g., pleasant weather, avoiding an automobile accident) may be perceived as occasions for gratitude to God, although negative events (e.g., a long winter, an automobile accident) would likely not be attributed to God.

It is possible that causal links between the grateful disposition and spirituality run in the other direction as well. Allport, Gillespie, and Young (1948) found that 37% of their college-student sample cited gratitude as a reason why they were religious. For these many reasons, we hypothesized that dispositionally grateful people score higher on measures of spirituality and religiousness.

Is the Grateful Disposition a Distinct Construct?

Thus far, we have posited that the grateful disposition is real, unique, and worthy of attention in its own right, even if also correlated with a host of better understood traits and characteristics. In this situation, it is prudent to anticipate the objection that the grateful disposition is no more than a repackaging of some other construct. This objection has prima facie merit for theoretical and practical reasons. Theoretically, if gratitude is simply a manifestation of more fundamental constructs (e.g., Extraversion/positive affectivity, Neuroticism/negative affectivity, or Agreeableness), then the grateful disposition might reveal little of enduring interest about human personality and social functioning. Practically, if gratitude is simply the product of such better understood traits, then examining gratitude on its own terms might only contribute to the explosion of traits (and measures) that has characterized psychology during the twentieth century.

To this objection, one might argue that even if gratitude were simply a linear combination of more basic constructs, the concept could still reveal important insights at a different level of analysis. For example, if gratitude could be reduced to a linear combination of the Big Five (which most likely it cannot; Saucier & Goldberg, 1998), then gratitude still could be of interest as a characteristic adaptation that more extraverted (or less neurotic or more agreeable) people use to navigate their worlds (see McCrae & Costa, 1999).

The objection could also be examined empirically. If the items used as indicators of the grateful disposition correlate as highly

with the items on a measure of some other lower order construct—say, hope, happiness, optimism, vitality, or satisfaction with life—as they do with each other, then the concept of gratitude would seem unnecessary for understanding the class of human behavior or experience in question. Also, if gratitude's associations with such lower order constructs can be explained in terms of their common associations with superordinate traits (e.g., Extraversion/positive affectivity, Neuroticism/negative affectivity, Agreeableness) one might safely conclude that the disposition toward gratitude is a basic adaptation emerging from more basic personality traits.

Overview of the Studies

In the studies described below, we addressed several objectives regarding the disposition toward gratitude. First, we developed self-report measures of the grateful disposition and examined their convergence with informant ratings. Second, we confirmed that the disposition toward gratitude is empirically distinct from constructs such as life satisfaction, vitality, happiness, hope, and optimism. Third, we tested the hypotheses that the disposition toward gratitude is correlated with lower order traits such as (a) emotions and well-being; (b) prosocial traits such as empathy, forgiveness, and willingness to help others; and (c) spirituality, religiousness, and nonmaterialistic attitudes. Fourth, we examined the relation of the disposition toward gratitude with the Big Five personality traits. Fifth, we explored whether the associations of gratitude with lower order traits occurred through their common associations with the superordinate traits of Extraversion/positive affectivity, Neuroticism/negative affectivity, and Agreeableness, as well as with social desirability.

Study 1

Study 1 was an initial investigation of the correlates of the grateful disposition using two methods for assessing gratitude. First, we constructed a self-report measure called the Gratitude Questionnaire-6 (GQ-6). We examined the convergence of the GQ-6 with informant ratings and confirmed that gratitude was empirically distinct from a host of other conceptually related constructs. Then, we examined the correlations of the self-ratings and informant ratings of the disposition toward gratitude with measures of positive affect/well-being, prosociality, spirituality/religiousness, and the Big Five.

Method

Participants

The participants in Study 1 were 238 undergraduate psychology students (174 women, 57 men, 7 unrecorded). Participants' mean age was 21 years (range = 19–44). Participants received course credit for participating.

Self-Report Measures of Gratitude

We administered 39 positively and negatively worded items that assess experiences and expressions of gratefulness and appreciation in daily life, as well as feelings about receiving from others. Items reflected the gratitude intensity facet (e.g., "I feel thankful for what I have received in life."), the gratitude frequency facet (e.g., "Long amounts of time can go by before I feel grateful to something or someone."), the gratitude span facet (e.g., "I

sometimes feel grateful for the smallest things."), and the gratitude density facet (e.g., "I am grateful to a wide variety of people."). Respondents endorsed each item on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Measures of Affectivity and Life Satisfaction

Life satisfaction. The five-item Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) assesses the cognitive component of subjective well-being. Items are rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The SWLS has a 2-month test-retest correlation coefficient of .82 and coefficient alpha of .87 (Diener et al., 1985). The SWLS is widely used and well-validated (Pavot & Diener, 1993).

Vitality. Subjective vitality is a feeling of aliveness, energy, and enthusiasm, representing the "nexus of physical and psychological well-being" (Ryan & Frederick, 1997). It was assessed with the seven-item Vitality Scale (a sample item is "I have energy and spirit"). The Vitality Scale is related to both physical and mental health outcomes and possesses good psychometric properties.

Subjective happiness. The Subjective Happiness Scale (Lyubomirsky & Lepper, 1999) is a four-item scale that measures global subjective happiness. The scale has high test-retest reliability, internal consistency, and self-peer correlations.

Optimism. The widely used Life Orientation Test (LOT; Scheier, Carver, & Bridges, 1994) is an eight-item scale for assessing dispositional optimism. Scheier et al. reported a coefficient alpha of .82 and test-retest stabilities ranging from .56 to .79 across four time periods.

Hope. The Adult Trait Hope Scale (Snyder, et al., 1991) is an eight-item measure that assesses two dimensions of hope: agency and pathways. The hope scale possesses favorable psychometric properties and predicts several measures of performance, health, and adjustment (Snyder, 2000).

Positive and negative affect. The Positive and Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988) measure general tendencies to experience positive (e.g., pride) and negative (e.g., guilt) affect. Participants used a 5-point Likert-type scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*) to indicate how well each of 20 adjectives described "how [they] generally feel." Coefficient alphas of the positive and negative scales range in the middle to upper .80s (Watson et al., 1988).

Psychological symptoms. We measured anxiety and depressive symptoms with the Anxiety and Depression scales of the Brief Symptom Inventory (Derogatis & Spencer, 1982). Participants rate the items on these subscales with a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). Items in the Anxiety scale describe symptoms characteristic of high levels of manifest anxiety and the cognitive and somatic correlates of anxiety. The Depression scale consists of items that characterize clinical depression including negative moods, low motivation, and social isolation. Derogatis and Spencer (1982) reported coefficient alphas of .81 for the Anxiety scale and .85 for the Depression scale.

Measures of Prosociality

Dispositional empathy. The disposition toward empathy was measured with the Empathic Concern and Perspective-Taking subscales of the Interpersonal Reactivity Index (Davis & Oathout, 1987). These subscales have adequate internal consistency ($\alpha = .73$ and $.71$, respectively, Davis & Oathout, 1987), and are frequently used to measure empathic disposition.

Social desirability. Social desirability was assessed with the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1998). This 40-item inventory assesses two self-favoring defensive tendencies: self-deceptive enhancement (SDE) and impression management (IM). Coefficient alphas range from .67 to .77 for SDE and .77 to .85 for IM (Paulhus, 1998).

Measures of Spirituality and Religiousness

Spiritual transcendence. The Spiritual Transcendence Scale (STS; Piedmont, 1999) is a 24-item scale consisting of subscales for assessing three dimensions of spirituality: Prayer fulfillment (e.g., "The desires of my body do not keep me from my prayers or meditations"), universality ("I believe there is a larger meaning to life"), and connectedness ("I am concerned about those who will come after me in life"). Coefficient alphas for these subscales range from .65 to .85. Subscale scores are moderately correlated with conventional indexes of religiousness and are relatively independent of the Big Five (Piedmont, 1999). In the present study, we used the total scale score as a measure of spirituality.

Self-transcendence. Fifteen items from the self-transcendence subscale of the Character and Temperament Inventory (Cloninger, Svrakic, & Przybeck, 1993) were used to assess three aspects of spirituality: self-forgetful versus self-conscious experience, transpersonal identification versus self-isolation, and spiritual acceptance versus rational materialism. Kirk, Eaves, and Martin (1999) developed a 15-item measure (sample item is "I have had personal experiences in which I felt in contact with a divine and wonderful spiritual power") from the full-length 33-item subscale. Cloninger et al. reported alphas in the low .70s for the 33-item version. Internal consistency of the 15-item version in the present study was $\alpha = .86$. Items were endorsed on a 4-point Likert-type scale ranging from 1 (*agree*) to 4 (*disagree*).

Other religious variables. Participants also completed several other items related to religiousness, including items assessing the importance of religion ("How important is religion in your life?"), the frequency with which they attend religious activities ("On average, how often do you attend religious services?"), the number of religious friends they have ("Are your friends involved in religious activities?" with *none*, *a few*, *most*, and *all* as response options), the amount of time they spent reading scripture ("How often do you read sacred scriptures?") and other religious literature ("How often do you read other religious literature?"), the frequency with which they pray ("How often do you pray?"), the extent to which they felt they had a personal relationship with God ("To what extent do you have a personal, unique, close relationship with God?"), and the extent to which they experience spiritual union with God ("Do you have experiences where you feel a union with God and gain spiritual truth?").

Measures of the Big Five

The Big Five Inventory (John, Donahue, & Kentle, 1991) consists of 44 brief descriptive phrases that are prototypical markers for five broad personality dimensions: Agreeableness, Conscientiousness, Extraversion, Neuroticism, and Openness. Alpha reliabilities and test-retest reliabilities for the five subscales range from .80 to .90 (John & Srivastava, 1999).

Informant Reports

The 238 participants were asked to identify four people (friends, relatives, or romantic partners) who knew them well. Participants asked these informants to complete an informant rating form that included several measures. Questionnaires were worded specifically for male and female targets. Two or more informant reports were returned for 168 individuals. Of the 639 total informants, 444 (69.5%) were friends or roommates, 54 (8.5%) were boyfriends or girlfriends, 49 (7.7%) were parents, 3 (< 1%) were spouses, 60 (9.4%) were other family members, and 29 (4.5%) were people who knew the participants in some other way.

Gratitude ratings. The informant form included 12 items from the gratitude item pool described above, with wording changed from the first person to the third. Informants rated the participants on the same 7-point scale that participants used in the self-ratings. Within informants, these 12 items had internal consistency reliabilities (α) of approximately .85. Interrater reliability was calculated using the formula for Case 1 in Shrout and

Fleiss (1979, p. 421), using an analysis of variance components (Hoyt & Melby, 1999). Using this formula, interrater reliability was .65.

Prosocial behavior. Informants were also asked to rate the frequency with which they were the recipients of prosocial actions performed by the target person (e.g. "[she/he] loaned me money," "[she/he] provided compassion or sympathy," "[she/he] made me feel good about myself") during "the last month or so." Informants rated these items on a 5-point Likert-type scale ranging from 1 (*not at all*) to 5 (*frequently*). We combined scores on these informant reports into a single five-item measure of perceived prosocial behavior in the last month.

Informants also completed several measures of their impressions of participants' general prosocial tendencies (e.g., "[She/he] tends to go out of [his/her] way to help others," "[She/he] has volunteered [his/her] time to help others," etc.). These items were rated on a 5-point scale ranging from 1 (*not at all characteristic of the participant*) to 5 (*extremely characteristic of the participant*).

Informants also rated participants with the Big Five Inventory (John et al., 1991).

Procedures

During a class period, participants received a packet containing the self-report scales and four envelopes and questionnaire packets containing the informant-report scales. Participants were instructed to give each envelope to an individual who knew them well with the instructions that the forms should be mailed directly back to the researcher within 1 week. They were instructed not to discuss the questionnaires or ratings with their informants. A total of 656 peer reports were returned. Participants for whom at least three reports were not returned were not included in aggregate informant reports described below.

Results

Scale Construction: Initial Analyses

First, we conducted correlational and exploratory factor analyses with the 39 items in our initial pool of items for measuring the grateful disposition. An exploratory factor analysis on the 39 items revealed one large factor that explained 27% of the total item variance. Although there were 10 other factors with eigenvalues exceeding unity, none of these factors accounted for more than 7% of the total item variance. A scree plot also suggested only one meaningful factor. From the item pool, we retained six items that (a) loaded strongly on the first factor and (b) assessed unique aspects of the grateful disposition. These six items constituted the initial version of the GQ-6.

Structural Equation Models

The validity of a one-factor solution for the six retained items was assessed with structural equation models with maximum-likelihood estimation in EQS Version 5.7b (Bentler, 1995). To assess goodness of fit, we examined the chi-square, comparative fit index (CFI) and standardized root-mean-square residual (SRMR; Bentler, 1995) statistics. Hu and Bentler (1998) noted that SRMR is less sensitive to distribution and sample size, and recommended its use in combination with CFI when using maximum-likelihood estimation. CFI values greater than .95 and SRMR values less than .05 are typically considered to indicate that a structural equation model is adequately parameterized (Hu & Bentler, 1998), although values as low as .90 and as high as .10, respectively, are acceptable.

First, we estimated a one-factor congeneric measurement model. This model yielded a large and significant chi-square, $\chi^2(9, N = 235) = 30.34, p < .001$. The CFI, which is less sensitive to sample size, was also large (.95), indicating that the one-factor model provided an adequate fit to the data. For our six-item scale, SRMR was .04. The internal consistency reliability of the six-item scale was $\alpha = .82$. The final version of the GQ-6 appears in the Appendix.

Discriminant Validity

We proceeded to distinguish our measure of the grateful disposition from several related but distinct constructs: satisfaction with life, vitality, subjective happiness, optimism, and hope. If the grateful disposition construct is distinct from the latter five constructs, then it should be necessary to specify two unique but correlated factors to account for the covariances among the items for the GQ-6 and any of the other five scales.

For each of these tests of discriminant validity, we used EQS 5.7b to estimate a one-factor solution specifying a single latent construct underlying the items on the GQ-6 and each of the other respective scales. Second, we estimated a two-factor solution specifying that the items on the GQ-6 and each of the other respective scales loaded on distinct but correlated latent variables. If the addition of a second latent variable to account for the covariances among both sets of items led to an improvement in model fit (i.e., if the two-factor model was superior to the one-factor model), we could conclude that both constructs are necessary for describing the two sets of items, and thus, that the two constructs are reasonably distinctive.

We evaluated the fit of these one-factor and two-factor models with the chi-square, CFI, and SRMR indices. We analyzed the relative improvements in goodness of fit associated with moving from a one-factor model to a two-factor model with a nested chi-square test. The nested chi-square test measures the difference in chi-square values between nested models that differ by one parameter. Differences in chi-square values themselves are chi-square distributed, and can be evaluated for statistical significance by evaluating them against the chi-square distribution with 1 degree of freedom. Statistically significant reductions in chi-square suggest that the additional parameter improved model specification (Hoyle & Panter, 1995).

Gratitude and life satisfaction. The one-factor model combining the gratitude items with SWLS items fit the data poorly, $\chi^2(44, N = 231) = 352.95, p < .001, CFI = .71, SRMR = .13$. In contrast, a model with gratitude and life satisfaction as two separate factors showed a better fit, $\chi^2(43, N = 231) = 74.89, p < .001, CFI = .97, SRMR = .04, \Delta\chi^2 = 278.06, p < .05$, demonstrating that the introduction of a second factor to account exclusively for the covariances among the items on the GQ-6 led to a significant improvement in model fit. The gratitude and life satisfaction latent factors were correlated at $r = .53, p < .05$.

Gratitude and vitality. The one-factor solution for gratitude and vitality did not fit the data well, $\chi^2(65, N = 234) = 481.26, p < .001, CFI = .68, SRMR = .14$, and the two-factor solution fit the data better, $\chi^2(64, N = 234) = 166.44, CFI = .92, SRMR = .06, \Delta\chi^2 = 314.82, p < .05$. The gratitude and vitality latent factors were correlated at $r = .46, p < .05$.

Gratitude and happiness. The one-factor model for describing the relations among the items on the GQ-6 and subjective happiness (Lyubomirsky & Lepper, 1999) scales did not fit the data well, $\chi^2(35, N = 234) = 355.54, p < .001, CFI = .66, SRMR = .12$, and the two-factor solution fit the data better, $\chi^2(34, N = 234) = 103.90, CFI = .93, SRMR = .05, \Delta\chi^2 = 251.64, p < .05$. The gratitude and happiness latent factors were correlated at $r = .50, p < .05$.

Gratitude and optimism. We also evaluated the relations among the items on the GQ-6 and the items on the LOT measure of optimism. A one-factor model yielded a poor fit on all three indices: $\chi^2(54, N = 233) = 275.42, p < .001, CFI = .74, SRMR = .11$. In comparison, a two-factor solution with gratitude and optimism as distinct factors fit the data more acceptably, $\chi^2(53, N = 233) = 103.16, p < .001, CFI = .94, SRMR = .05$. The difference in chi-square between the one-factor and two-factor models was significant, $\Delta\chi^2 = 171.86, p < .05$. The two latent factors were correlated at $r = .51, p < .05$.

Gratitude and hope. We conducted similar tests with Snyder et al.'s (1991) hope scale. We analyzed the relations between the GQ-6 items and the items on the agency and pathways subscales separately. The one-factor model combining gratitude and agency items was a poor fit to the data, $\chi^2(35, N = 232) = 192.70, p < .001, CFI = .82, SRMR = .08$. The two-factor model with separate factors for gratitude and agency appeared more adequate, $\chi^2(34, N = 232) = 81.79, p < .001, CFI = .94, SRMR = .05$. The change in chi-square was significant, $\Delta\chi^2 = 110.91, p < .05$, revealing the two-factor solution to be an improvement in fit over a one-factor model. The gratitude and agency latent factors were correlated at $r = .67, p < .05$.

Similar analyses were conducted comparing one-factor and two-factor models of the covariances among the GQ-6 items and the items on the pathways subscale of the hope scale. The one-factor model yielded a poor fit, $\chi^2(35, N = 233) = 273.79, p < .001, CFI = .69, SRMR = .13$. The two-factor model displayed a better fit, $\chi^2(34, N = 233) = 77.11, p < .001, CFI = .95, SRMR = .05$, and was a significant improvement in fit, $\Delta\chi^2 = 196.68, p < .05$. The gratitude and pathways latent factors were correlated at $r = .42, p < .05$.

Correlations With Informant Ratings of Gratitude

Because the GQ-6 appeared to be both psychometrically adequate and sufficiently distinct from several other positive constructs, we proceeded to examine the convergence of self-reports with informant reports of the grateful disposition. We computed a composite informant rating of the grateful disposition by averaging informants' ratings on the 12 gratitude items and then averaging across four informants. Participants' ratings on the GQ-6 ($M = 5.92, SD = 0.88$) were positively correlated with mean informant ratings on the 12-item gratitude scale ($M = 5.52, SD = 0.53$), $r = .33, p < .01$. Thus, people's perceptions of their own grateful disposition show a modest but significant correspondence with external observers' perceptions.

Correlations of Gratitude With Other Constructs

We correlated the GQ-6 and the mean informant ratings of the grateful disposition with the other measures of personality. These correlations appear in Table 1.

Table 1
Correlations of Two Measures of Gratitude With Measures of Affectivity and Well-Being, Prosociality, and Spirituality/Religiousness (Study 1)

Scale	GQ-6	M of 12-item informant ratings
Affectivity and well-being		
Life satisfaction (SWLS)	.53*** ^a	.34**
Vitality	.46*** ^a	.23**
Subjective happiness	.50*** ^a	.26**
Optimism (LOT)	.51*** ^a	.28**
Hope		
Agency	.67*** ^a	.21**
Pathways	.42*** ^a	.18*
Positive and negative affect		
Positive subscale	.31**	.32**
Negative subscale	-.31**	-.31**
Psychological symptoms (BSI)		
Anxiety	-.20**	-.11
Depression	-.30**	-.26**
Prosocial traits and behaviors		
Dispositional empathy		
Empathic concern	.28**	.17*
Perspective taking	.32**	.22**
M of 5 peer-reported prosocial behaviors in past month	.12	.40**
Peer-rated prosocial traits		
Goes out of way to do favors for others	.14	.47**
Has volunteered time to help others	.19*	.42**
Tends to be generous with time and resources	.22**	.50**
Expects other people to do him/her favors	-.20**	-.41**
Is helpful and unselfish with others	.18*	.54**
Spiritual and religious variables		
Spiritual transcendence (STS)	.28**	.30**
Self-transcendence (CTI)	.24**	.19*
Religious variables		
Importance of religion	.22**	.23**
Frequency of attendance	.23**	.31**
Religious friends	.29**	.20*
Reading scripture	.16*	.21**
Other religious reading	.14*	.24**
Prayer	.19**	.32**
Personal relationship with God	.25**	.22**
Union with God	.23**	.17*
Social desirability (BIDR)		
Self-deception	.19**	.17*
Impression management	.21**	.07
Big Five personality traits (self-ratings)		
Agreeableness	.39**	.28**
Conscientiousness	.27**	.12
Extraversion	.20**	.26**
Neuroticism	-.30**	-.28**
Openness	.23**	.13
Big Five personality traits (peer ratings)		
Agreeableness	.17*	.59**
Conscientiousness	.14†	.37**
Extraversion	.16*	.41**
Neuroticism	-.16*	-.49**
Openness	.18*	.45**

Note. GQ-6 = Gratitude Questionnaire-6; SWLS = Satisfaction With Life Scale; LOT = Life Orientation Test; BSI = Brief Symptom Inventory; STS = Spiritual Transcendence Scale; CTI = Character and Temperament Inventory; BIDR = Balanced Inventory of Desirable Responding.

† $p < .10$. * $p < .05$. ** $p < .01$.

^a Correlations between latent variables as estimated with maximum-likelihood structural equation models.

Affect and well-being. As predicted, both the self-report and informant-report measures of the grateful disposition were correlated positively with all of the measures of positive affect and well-being (e.g., life satisfaction, vitality, subjective happiness, optimism, hope, and positive affectivity), and negatively with all of the measures of negative affect (negative affectivity, anxiety, and depression).

Prosociality. As predicted, the self-report and informant-report measures of the grateful disposition were also correlated positively with the Empathic Concern and Perspective-Taking subscales of the empathy measure. In addition, the measures of the grateful disposition were correlated positively with informants' reports of participants' prosocial behaviors. Participants who were rated by themselves (and by their informants) as being more grateful were reported to perform more prosocial behaviors (e.g., providing favors, as well as emotional and tangible support) for their informants than were less grateful people. Moreover, informants rated grateful people as having more prosocial traits generally than did the informants of less grateful people.

Religiousness and spirituality. As predicted, the measures of the grateful disposition were positively correlated with nearly all of the measures of spirituality and religiousness, including spiritual transcendence, self-transcendence, and the single-item religious variables.

Social desirability. Gratitude was modestly correlated with the SDE ($r = .19, p < .01$) and IM ($r = .21, p < .01$) subscales of the social desirability scale. The mean of the informant ratings was also correlated significantly with SDE ($r = .17, p < .01$) but not with IM ($r = .07, ns.$).

The Big Five. The grateful disposition was related to several of the Big Five (see Table 1). Specifically, gratitude was correlated with Agreeableness (positively), Extraversion (positively), and Neuroticism (negatively) for both self-ratings (i.e., the GQ-6) and informant ratings. Perhaps most importantly, these correlations replicated not only within raters, but across raters as well. For example, self-ratings of Agreeableness were significantly correlated with both self-rated and peer-rated gratitude and vice versa.

Regressing gratitude on the Big Five in self-ratings. We regressed the GQ-6 on the Big Five self-ratings (see Table 2). The self-reports of the Big Five personality variables explained 21% of

Table 2
Multiple Regression of Two Measures of Gratitude on the Big Five (Study 1)

Predictor variable	B	SE	β	R ²
Gratitude Questionnaire-6				
Openness	.13	.09	.10	.21**
Conscientiousness	.11	.09	.08	
Extraversion	.08	.07	.08	
Agreeableness	.41	.10	.29**	
Neuroticism	-.14	.07	-.13†	
M of 12-item peer ratings				
Openness	.25	.08	.20**	.52**
Conscientiousness	-.05	.08	-.04	
Extraversion	.26	.06	.26**	
Agreeableness	.50	.08	.43**	
Neuroticism	-.19	.06	-.20**	

† $p < .10$. ** $p < .01$.

the variance in GQ-6 scores, $R^2(5, 223) = .21, p < .01$. Agreeableness predicted unique variance in GQ-6 scores ($\beta = .29, p < .01$), but the unique contribution of Neuroticism was only marginally significant ($\beta = -.13, p < .07$). Self-reported Openness, Conscientiousness, and Extraversion were not uniquely related to GQ-6 scores, all $ps > .10$.

Regressing gratitude and the Big Five in informant ratings. The aggregate informant rating of the disposition toward gratitude was also regressed on the informant ratings of the Big Five (see Table 2). The informant measures of the Big Five explained 52% of the variance in informant-rated gratitude, $R^2(5, 156) = .52, p < .01$. Informant ratings of Openness ($\beta = .20, p < .01$), Agreeableness ($\beta = .43, p < .01$), Extraversion ($\beta = .26, p < .01$), and Neuroticism ($\beta = -.20, p < .01$) predicted unique variance in informant-rated gratitude. Informant ratings of Conscientiousness did not predict unique variance in informant-rated gratitude, $p > .50$.

Discussion

In Study 1, we constructed a self-report measure of the grateful disposition (the GQ-6) that converged moderately with informant ratings. As we suspected, the items that we developed to assess the various facets of the grateful disposition were not factorially distinct, but rather seemed to reflect a single underlying factor. Although the self-ratings and informant ratings only shared about 10% common variance (i.e., their correlation was .33), such modest correlations are the rule rather than the exception in the convergence of self-ratings and informant ratings (Paulhus & Reynolds, 1995). The degree of convergence is actually impressive given the private nature of grateful cognitions and the fact that self-observer convergence is strongest for highly visible traits (Funder & Colvin, 1997). Ratings of the grateful disposition were correlated with measures of positive emotionality and well-being, including vitality, happiness, satisfaction with life, lack of depressive and anxious symptoms, hope, and optimism.

Also, people who rated themselves (or who were rated by others) as having a grateful disposition perceived themselves (and were perceived by others) as having prosocial characteristics. They were more empathic and were perceived as providing more concrete and emotional help to their peers, both within the last month and in general. This evidence is consistent with McCullough et al.'s (2001) hypothesis that gratitude motivates prosocial behavior. This conclusion must be tempered by the fact that the correlations between informant ratings of gratitude and prosocial behavior may have been due to halo error (Thorndike, 1920), although the amount of halo error in correlations of rated dimensions is less than was once believed to be the case (Murphy, Jako, & Anhalt, 1993).

The grateful disposition was also related to measures of spiritual and religious tendencies. Although these correlations were not large (i.e., few of them exceeded $r = .30$), they suggest that spiritually or religiously inclined people have a stronger disposition to experience gratitude than do their less spiritual/religious counterparts. Thus, spiritual and religious inclinations may facilitate gratitude, but it is also conceivable that gratitude facilitates the development of religious and spiritual interests (Allport et al., 1948) or that the association of gratitude and spirituality/religiousness is caused by extraneous variables yet to be identified. The fact

that the correlations of gratitude with these affective, prosocial, and spiritual variables were obtained using both self-reports and peer reports of the grateful disposition suggests that these associations are substantive and not simply the product of monomethod biases in measurement.

Confirmatory factor analyses revealed that gratitude is related to, but not equivalent to, happiness, vitality, satisfaction with life, optimism, and hope. Moreover, the Big Five accounted for approximately 21% of the variance in the GQ-6, suggesting that the grateful disposition is not reducible to a linear combination of the Big Five (see also Saucier & Goldberg, 1998).

Study 2

Study 2 was based on a survey that we conducted with nonstudents through the Internet. We cross-validated the measurement model for the GQ-6, examined the convergence of the GQ-6 with an alternative self-report measure of the grateful disposition (an adjective-based scale), and examined the correlations of both of these measures of the grateful disposition with positive and negative affect, the disposition to forgive, spirituality, and the Big Five.

Method

Participants

Participants were 1,228 adult volunteers (M age = 44.6, $SD = 12.0$; Range = 18–75). The sample comprised mostly women (80% women, 15% men, 5% did not provide gender) who were predominantly White/Caucasian (91% White/Caucasian, 3% Hispanic/Latino, 2% Black/African American, 1% Asian, 3% other). All participants were either visitors to the web site for the magazine *Spirituality and Health* (www.spiritualityhealth.com) or visitors to one of two other nationally known web sites dealing with issues related to spirituality, religion, and health, who then linked to the *Spirituality and Health* web site.

Measures

Gratitude. Participants completed the GQ-6. They also used a 9-point Likert-type scale ranging from 1 (*inaccurate*) to 9 (*accurate*) to indicate how accurately three gratitude-related adjectives (*grateful*, *thankful*, and *appreciative*) described them. Internal consistency reliability for the gratitude adjectives scale was .87.

Measures from Study 1. As in Study 1, participants completed the PANAS (Watson et al., 1988), the SWLS (Diener et al., 1985), and Piedmont's (1999) STS (with items endorsed on 7-point rather than 5-point scales).

The Big Five. We measured the Big Five with Saucier's (1994) Big Five Mini-Markers scale. This scale consists of 40 adjectives that participants rate on a 9-point Likert type scale ranging from 1 (*extremely inaccurate*) to 9 (*extremely accurate*) to indicate how well each of the adjectives describes their personalities. The scale demonstrates adequate reliability and validity as a measure of the Big Five (Saucier, 1994).

Disposition to forgive. To measure a novel aspect of prosociality, we had participants complete 10 items developed for the present study that assessed their disposition to forgive. Items were based on McCullough Worthington, and Rachal's (1997) theorizing regarding forgiveness (i.e., that forgiveness involves prosocial changes in avoidance, revenge, and conciliatory motivations). Participants indicated the extent to which they engaged in 10 different responses when people anger or hurt them, including positively worded items (e.g., "I don't hold it against him/her for long") and negatively worded items (e.g., "I will find a way to even the score"),

the latter of which we reverse scored. These 10 items had an internal consistency of $\alpha = .81$.

Procedure

After participants read an informed consent form and indicated that they understood and consented to the terms of the study, they completed the survey. Participants indicated their age, gender, and ethnicity and then completed the items on the scales mentioned above. Once participants had completed the surveys, their anonymous responses were sent from the *Spirituality and Health* web server to Michael E. McCullough by e-mail.

Results

Confirmatory Factor Analysis

First, we sought to replicate the single-factor measurement model for the GQ-6. Using the large sample size in this study to our advantage, we split participants into two roughly equal samples on the basis of the day of the month on which they were born ($N = 609$ for people born before the 16th of the month and $N = 619$ for people born after the 15th of the month) and conducted two independent tests of the one-factor measurement model. Although the first sample showed a large chi-square, $\chi^2(9, N = 609) = 55.41, p < .001$, other indices indicated good fit, CFI = .94, SRMR = .04. The second sample had similarly good fit, $\chi^2(9, N = 619) = 56.83, p < .001$, CFI = .93, SRMR = .05. Therefore, we concluded that a one-factor model provided good fit in this sample.

Correlations of the Grateful Disposition With Other Constructs

The GQ-6 ($M = 6.15, SD = .82$) and the three-item gratitude adjectives scale ($M = 7.67, SD = 1.22$) were correlated at $r(1182) = .65, p < .05$. Using EQS 5.7b, we estimated that the correlation of the two latent variables (i.e., corrected for measurement error) was $r = .75$.

Table 3 shows the relationship of the GQ-6 and the gratitude adjectives scale with other constructs. Both measures of the grateful disposition were positively and moderately related to positive affect, life satisfaction, spiritual transcendence, forgiveness,

Agreeableness, Conscientiousness, Extraversion, and Openness. Both measures were negatively and moderately related to negative affect and Neuroticism.

Regression of the Grateful Disposition on the Big Five

As in Study 1, we were interested in the extent to which each of the Big Five predicted unique variance in the grateful disposition. Table 4 shows the results of simultaneous multiple regression analyses in which the two measures of the grateful disposition were regressed on the Big Five. The Big Five variables predicted 28% of the variance in the GQ-6, $R^2(5, 1175) = .28, p < .01$, with all five predictors accounting for unique variance. Results were similar for the gratitude adjectives scale, in which the Big Five predicted 33% of the variance, $R^2(5, 1175) = .33, p < .01$, with all five predictors accounting for unique variance. The strongest unique Big Five predictors for the GQ-6 were Neuroticism ($\beta = -.26$) and Agreeableness ($\beta = .19$), whereas the strongest unique Big Five predictors of the adjective scale were Agreeableness ($\beta = .39$) and Openness ($\beta = .17$). Despite these differences, both analyses revealed that the disposition toward gratitude is not reducible to a linear combination of the Big Five, although, because of high statistical power, it was correlated significantly and uniquely with all of the Big Five.

Discussion

Study 2 yielded more evidence for the internal consistency and one-factor structure of the GQ-6. As in Study 1, people who indicated that they tended to experience gratitude—as measured with both the GQ-6 and the gratitude adjectives scale—were considerably higher in positive affectivity and well-being. Moreover, they reported being more forgiving when other people anger or hurt them and more spiritually minded than did their less grateful counterparts. Study 2 is particularly noteworthy because it demonstrates that the correlates of the grateful disposition are essentially the same in adults as in university students.

The consistent findings from Studies 1 and 2 led us to consider two other potential correlates of the grateful disposition: materialism and envy. We expected that the disposition toward gratitude would be negatively related to materialism because grateful people probably do not focus on acquiring and maintaining possessions and wealth; rather, they would be expected to focus on savoring the positive experiences and outcomes—both material and non-material—that they have already experienced. Thus, we expect that people could be both dispositionally grateful and strongly materialistic only with great difficulty. Moreover, a focus on the acquisition and consumption of material goods as a source of happiness is to some extent incompatible with the strong orientation to other people that grateful people manifest through their high levels of Agreeableness and other Agreeableness-related traits.

In a related vein, gratitude is probably somewhat incompatible with envy, which is a negative emotional state characterized by resentment, inferiority, longing, and frustration about other people's material and nonmaterial successes (Parrott & Smith, 1993). Grateful people, who tend to focus on the positive contributions of others to their well-being, probably devote less attention to comparing their outcomes with those of other people and experience

Table 3
Correlations Between Gratitude Scales
and Other Constructs (Study 2)

Scale	Gratitude Questionnaire-6	Gratitude Adjectives Scale
Positive affect	.53**	.57**
Negative affect	-.43**	-.23**
Life satisfaction	.53**	.38**
Forgiveness	.36**	.30**
Spiritual transcendence	.53**	.47**
Big Five personality traits		
Agreeableness	.41**	.52**
Conscientiousness	.26**	.28**
Extraversion	.32**	.27**
Neuroticism	-.42**	-.31**
Openness	.23**	.33**

** $p < .01$.

Table 4
Multiple Regression of Two Measures of Gratitude
on the Big Five (Study 2)

Predictor variable	<i>B</i>	<i>SE</i>	β	<i>R</i> ²
Gratitude Questionnaire-6				.28**
Openness	.08	.02	.11**	
Conscientiousness	.04	.02	.07*	
Extraversion	.09	.02	.16**	
Agreeableness	.16	.03	.19**	
Neuroticism	-.14	.02	-.26**	
Gratitude adjectives scale				.33**
Openness	.19	.03	.17**	
Conscientiousness	.08	.02	.09**	
Extraversion	.09	.02	.10**	
Agreeableness	.50	.04	.39**	
Neuroticism	-.05	.02	-.06*	

* $p < .05$. ** $p < .01$.

less envy as a result. In Study 3 we addressed these hypotheses and adduced further evidence regarding the emotional, prosocial, and spiritual correlates of the grateful disposition.

Study 3

Method

Participants

Participants were 156 undergraduate psychology students. They received a small amount of course credit for their participation.

Measures

Measures from Studies 1 and 2. Participants completed several measures that were administered in Studies 1 and 2. These included the Big Five Inventory (John et al., 1991), the BIDR (Paulhus, 1998), the Interpersonal Reactivity Index (Davis & Oathout, 1987), Scheier et al.'s (1994) LOT, Piedmont's (1999) STS, and the set of single-item religious measures.

Materialism. We measured materialism with two scales. The 18-item Values-Oriented Materialism Scale (Richins & Dawson, 1992) comprises three factorially distinct subscales. Acquisition centrality (i.e., the importance of material possessions) consists of seven items (e.g., "I enjoy spending money on things that aren't practical"). Happiness (i.e., viewing material goods as essential for happiness and life satisfaction) consists of five items (e.g., "I'd be happier if I could afford to buy more things"). Possession-defined success (i.e., judging one's own and others' success by number and quality of possessions accumulated) consists of seven items (e.g., "I like to own things that impress people"). Richins and Dawson reported test-retest reliabilities ranging from .82 to .87 and alpha reliabilities ranging from .71 to .88 for the subscales and the composite scale. High scorers place more emphasis on financial security and less emphasis on warm relationships with others compared with lower scorers. They also are more likely to spend on themselves rather than on others and are less likely to engage in voluntary simplicity behaviors (e.g., making items or buying used goods rather than new ones, relying on bicycles for transportation, recycling).

The 23-item Belk Materialism Scale (Ger & Belk, 1990) measures four factorially distinct dimensions of materialism. Possessiveness is measured with seven items (i.e., "I get very upset if something is stolen from me, even if it has little monetary value."), nongenerosity is measured with six items (e.g., "I don't like to lend things, even to good friends."), envy is

measured with five items ("I am bothered when I see people who buy anything they want."), and tangibilization (i.e., tendency to collect and retain material possessions) is measured with five items (e.g., "I tend to hang on to things I should probably throw out."). Ger and Belk reported internal consistency reliabilities ranging from $\alpha = .52$ –.67.

Envy. We measured envy with Smith et al.'s (1999) eight-item Dispositional Envy Scale. Items (e.g., "Frankly, the success of my neighbors makes me resent them") were rated on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Smith et al. reported internal consistency reliability estimates in the range of $\alpha = .83$ to .86 and 2-week test-retest stability of $r = .80$.

Procedures

The questionnaires were distributed during a class session. Participants were asked to complete the measures at home and to return them at the next class session (2 days later).

Results and Discussion

Confirmatory Factor Analysis

We evaluated the one-factor solution for the GQ-6 with EQS 5.7b to determine if the one-factor measurement model fit the present data. Although chi-square was large, $\chi^2(9, N = 155) = 24.02, p < .01$, the CFI and the SRMR suggested a good fit (CFI = .95, SRMR = .05).

Correlates of the Disposition Toward Gratitude

Participants in Study 3 showed levels of dispositional gratitude (GQ-6) similar to those found in Studies 1 and 2 ($M = 5.82, SD = .86$). Table 5 shows the correlations between the GQ-6 and the other measures. As in Studies 1 and 2, gratitude was related to measures of positive affect (e.g., optimism), prosociality (i.e., empathy), and spirituality/religiousness. As in Study 1, gratitude was positively correlated with SDE ($r = .34, p < .01$) and IM ($r = .29, p < .01$) subscales of the social desirability inventory.

Materialism and Envy

The correlations between the GQ-6 and the materialism subscales, as shown in Table 6, were uniformly negative. Grateful people report themselves as being less materialistic and less envious. In particular, grateful people report being more willing to part with their possessions, more generous with them, less envious of the material wealth of others, less committed to the idea that material wealth is linked with success in life, and less convinced of the idea that material wealth brings happiness. Apparently, material success is not a very important factor in the happiness of highly grateful people. Also, their lower scores on Smith et al.'s (1999) measure of dispositional envy suggests that grateful people experience less frustration and resentment over the achievements and possessions of other people ($r = -.39$). These results suggest that it may indeed be difficult for one to be grateful and materialistic or envious at the same time because these states require directing one's attention toward such divergent concerns.

The Big Five

Gratitude was significantly and positively correlated with Agreeableness, Extraversion, and Conscientiousness and nega-

Table 5
Correlations Between the Gratitude Questionnaire–6 (GQ-6)
and Other Constructs (Study 3)

Scale	Correlation with GQ-6
Optimism (LOT)	.43**
Dispositional empathy	
Empathic concern	.27**
Perspective taking	.36**
Spiritual transcendence (STS)	.30**
Religious variables	
Importance of religion	.22**
Frequency of attendance	.15†
Religious friends	.10
Reading scripture	.18*
Other religious reading	.09
Prayer	.25**
Personal relationship with God	.29**
Union with God	.29**
Materialism	
Success (Richins)	–.25**
Centrality (Richins)	–.07
Happiness (Richins)	–.38**
Possessiveness (Belk)	–.17*
Nongenerosity (Belk)	–.35**
Envy (Belk)	–.34**
Tangibilization (Belk)	–.11
Envy (DES)	–.39**
Social desirability	
Self-deception	.34**
Impression management	.29**
Big Five	
Agreeableness	.39**
Conscientiousness	.23**
Extraversion	.18*
Neuroticism	–.32**
Openness	.10

Note. LOT = Life Orientation Scale; STS = Spiritual Transcendence Scale; Richins = Richins Materialism Scale; Belk = Belk Materialism Scale; DES = Dispositional Envy Scale.
† $p < .10$. * $p < .05$. ** $p < .01$.

tively correlated with Neuroticism. Results of a simultaneous multiple regression analysis using the Big Five to predict gratitude are presented in Table 6. The Big Five predicted 23% of the variance in the GQ-6, $R^2(5, 149) = .23, p < .01$. As in Study 1, Agreeableness ($\beta = .30, p < .01$), Neuroticism ($\beta = -.19, p < .05$) and Extraversion ($\beta = .18, p < .05$) predicted significant amounts of unique variance in gratitude, whereas Openness and Conscientiousness did not.

Study 4

In Studies 1 through 3, we presented evidence that the disposition toward gratitude is associated with tendencies toward positive emotions and well-being, prosocial traits, and spirituality. However, given the consistent correlations of the disposition toward gratitude with Extraversion/positive affectivity, Neuroticism/negative affectivity, and Agreeableness, it would be useful to determine the extent to which the correlations of the GQ-6 with affective, prosocial, and spiritual constructs exist independently of their mutual associations with these three clusters of higher order traits. It would also be useful to know whether these associations exist independently of the effects of social desirability.

Method

To address these issues, we evaluated the extent of reduction in these associations when Extraversion/positive affectivity, Neuroticism/negative affectivity, Agreeableness, and social desirability are controlled. We meta-analytically combined the relevant zero-order and partial correlations from the data gathered for Studies 1 through 3. We combined coefficients with the DSTAT statistical software (Johnson, 1989). Using DSTAT, we performed Fisher's (1928) r -to- z transformations on the coefficients and weighted them by the inverse of their sampling error variance. Then, we calculated weighted mean effect sizes and converted these mean effect sizes back to the Pearson r metric.

Results and Discussion

Column 2 of Table 7 indicates the mean zero-order correlation of the GQ-6 with each of the measures denoted in the row headings using the data from Studies 1 through 3. For the sake of simplicity, we used sum scores of the religious variables measured in Studies 1 and 3 instead of the single-item measures of religiousness as individual criterion variables.

Mean Correlations With Extraversion/Positive Affectivity Held Constant

The coefficients in Column 3 of Table 7 are mean partial correlations of the GQ-6 with the measures denoted in the row headings while controlling for Extraversion and (in the case of data from Studies 1 and 2) positive affectivity. (Positive and negative affectivity were not measured in Study 3. For partial correlations from Study 3, we controlled Extraversion only.) Notably, the correlations with several of the affective and spiritual variables (e.g., life satisfaction, hope, self-transcendence, and spiritual transcendence) were substantially reduced in magnitude (i.e., 10 correlation points or more). With only one exception (the correlation with self-transcendence), all correlations maintained their valence and remained statistically significant. Thus, gratitude still accounts for variance in nearly all of these measures of affect/well-being, prosociality, and spirituality after controlling for Extraversion/positive affectivity.

Mean Correlations With Neuroticism/Negative Affectivity Held Constant

The coefficients in Column 4 of Table 7 represent the correlations of the GQ-6 with the measures denoted in the row headings after controlling for Neuroticism and (in the case of data from

Table 6
Multiple Regression of the Gratitude Questionnaire–6
on the Big Five (Study 3)

Predictor variable	<i>B</i>	<i>SE</i>	β
Openness	.02	.10	.01
Conscientiousness	.14	.11	.10
Extraversion	.20	.08	.18*
Agreeableness	.39	.11	.30**
Neuroticism	–.23	.09	–.19*

Note. $R^2 = .23, p < .01$.
* $p < .05$. ** $p < .01$.

Table 7

Correlations of the Gratitude Questionnaire-6 With Other Constructs Before and After Controlling for Extraversion/Positive Affectivity (E/PA), Neuroticism/Negative Affectivity (N/NA), Agreeableness, and Social Desirability (Studies 1-3)

Scale	Zero-order correlation	Controlling E/PA	Controlling N/NA	Controlling Agreeableness	Controlling social desirability
Measures of affect and well-being					
Life satisfaction	.51**a	.37**a	.37**a	.47**a	.38**b
Vitality	.38**b	.30**b	.32**b	.30**b	.34**b
Happiness	.41**b	.34**b	.33**b	.37**b	.37**b
Hope					
Agency	.53**b	.43**b	.44**b	.44**b	.49**b
Pathways	.32**b	.18**b	.21**b	.25**b	.26**b
Optimism	.41**c	.38**c	.30**c	.35**c	.36**c
Anxiety	-.20**b	-.18**b	-.07 ^b	-.19**b	-.18**b
Depression	-.30**b	-.22**b	-.15**b	-.26**b	-.26**b
Envy	-.39**d	-.36**d	-.27**d	-.30**d	-.21**d
Measures of prosociality					
Empathy					
Empathic concern	.28**c	.23**c	.31**c	.14**c	.25**c
Perspective-taking	.34**c	.28**c	.28**c	.13**c	.23**c
Forgiveness	.36**e	.25**e	.17**e	.25**e	
Materialism					
Possessiveness (Belk)	-.17 ^d	-.22**d	-.13 ^d	-.13 ^d	-.16 ^{†d}
Nongenerosity (Belk)	-.35**d	-.32**d	-.28**d	-.28**d	-.26**d
Envy (Belk)	-.34**d	-.32**d	-.26**d	-.18**d	-.18**d
Tangibilization (Belk)	-.11 ^d	-.11 ^d	.00 ^d	-.09 ^d	-.07 ^d
Success (Richins)	-.25**d	-.24**d	-.25**d	-.20**d	-.15 ^{†d}
Centrality (Richins)	-.07 ^d	-.09 ^d	-.07 ^d	-.09 ^d	-.07 ^d
Happiness (Richins)	-.38**d	-.34**d	-.34**d	-.28**d	-.27**d
Measures of spirituality/religiousness					
Self-transcendence	.24**b	.11 ^b	.20**b	.16**b	.20**b
Spiritual transcendence	.47**f	.36**f	.44**f	.39**f	.23**f
Religiousness ^g	.28**c	.27**c	.32**c	.25**c	.27**c

Note. Belk = Belk Materialism Scale; Richins = Richins Materialism Scale.

^a Correlations combined from Studies 1 and 2, total $N =$ approximately 1,372. ^b Correlation from Study 1 only, $N =$ approximately 205. ^c Correlations combined from Studies 1 and 3, total $N =$ approximately 340. ^d Correlation from Study 3 only, $N =$ approximately 135. ^e Correlation from Study 2 only, $N =$ approximately 1,167. ^f Correlations from Studies 1, 2, and 3, total $N =$ approximately 1,507. ^g Sum of the single-item measures of religiousness used in Studies 1-3.

[†] $p < .10$. * $p < .05$. ** $p < .01$.

Studies 1 and 2) negative affectivity. Notably, the correlations with several of the affective and spiritual variables (e.g., life satisfaction, hope, optimism, anxiety, depression, envy, forgiveness, and materialism) were substantially reduced (i.e., 10 correlation points or more). The only correlations that did not maintain their valence and statistical significance were the correlations with anxiety and the possessiveness subscale of the Belk Materialism Scale. Thus, gratitude still predicts significant variance in nearly all of these measures of affect/well-being, prosociality, and spirituality after controlling for Neuroticism/negative affectivity.

Mean Correlations With Agreeableness Held Constant

The coefficients in Column 5 of Table 7 represent the correlations of the GQ-6 with the measures denoted in the row headings after controlling for Agreeableness. Notably, correlations with several prosocial variables (empathy, forgiveness, several materialism subscales) were substantially reduced in magnitude (i.e., 10 correlation points or more). The only correlations that did not maintain their valence and statistical significance were with the

possessiveness and nongenerosity subscales of the Belk Materialism Scale. Thus, gratitude accounts for unique variance in nearly all of these criteria after controlling for Agreeableness.

Mean Correlations With Social Desirability Held Constant

Finally, the coefficients in Column 6 of Table 7 represent the correlations with the measures denoted in the row headings after controlling for social desirability. The correlations with measures of several affective, prosocial, and spiritual variables (life satisfaction, envy, perspective-taking, spiritual transcendence, the envy subscale of the Belk Materialism Scale, and the Success and Happiness subscales of the Richins Materialism Scale) were reduced substantially (i.e., 10 correlation points or more). However, only the correlation with the Success subscale failed to maintain statistical significance. Thus, although socially desirable responding may explain some of our obtained associations, the control of social desirability does not affect drastically our general conclusions about the correlates of gratitude.

General Discussion

The results from the present studies help to paint a portrait of the dispositionally grateful person. Consistent with our hypotheses, grateful people appear to be different from their less grateful counterparts in three interesting psychological domains: (a) emotionality/well-being, (b) prosociality, and (c) spirituality/religiousness. Compared with their less grateful counterparts, grateful people are higher in positive emotions and life satisfaction and also lower in negative emotions such as depression, anxiety, and envy. They also appear to be more prosocially oriented in that they are more empathic, forgiving, helpful, and supportive than are their less grateful counterparts. Relatedly, grateful people are less focused on the pursuit of materialistic goals. Finally, people with stronger dispositions toward gratitude tend to be more spiritually and religiously minded. Not only do they score higher on measures of traditional religiousness, but they also score higher on nonsecular measures of spirituality that assess spiritual experiences (e.g., sense of contact with a divine power) and sentiments (e.g., belief that all living things are interconnected) independent of specific theological orientation.

We attempted to account for the emotional, prosocial, and spiritual traits of grateful people by appealing to the Big Five personality taxonomy as an explanatory framework. Dispositionally grateful people were consistently more extraverted, more agreeable, and less neurotic than their less grateful counterparts. When these three superordinate traits were controlled, many of the correlations between the disposition toward gratitude and measures of emotions/well-being, prosociality, and spirituality became smaller in magnitude.

However, none of these three superordinate traits could completely account for the correlations of the Big Five with lower order personality variables. Moreover, although the correlations with the Big Five were robust, the Big Five only accounted for approximately 30% of the variance in the disposition toward gratitude. Even if one were to correct the obtained associations for measurement error, the Big Five still would account for no more than 40% to 45% of the variance in the disposition toward gratitude, so the disposition toward gratitude is by no means reducible to a linear combination of them (see also Saucier & Goldberg, 1998). Nevertheless, the present findings regarding the correlations with the Big Five could be useful in formulating a broader theory of gratitude that accounts for its roots in basic personality traits. Specifically, it might be fruitful to conceptualize the disposition toward gratitude in part as a characteristic adaptation that is preferentially deployed by highly extraverted, minimally neurotic, and highly agreeable people for navigating their worlds (see McCrae & Costa, 1999).

Measuring the Grateful Disposition

The grateful disposition can be measured dependably through self-report and informant report. We developed a six-item self-report measure that assesses individual differences in gratitude. It converges well with observer reports and an adjective rating scale of gratitude like the one used by Saucier and Goldberg (1998). The GQ-6 has excellent psychometric properties, including a robust one-factor structure and high internal consistency, especially in light of its brevity. Moreover, it correlates in theoretically expected

ways with a variety of affective, prosocial, and spiritual constructs. Therefore, the GQ-6 and its observer form (which we intend to continue developing) may be of use in future research on gratitude.

Directions for Future Research

McCullough et al. (2001) recently proposed several directions for future research on gratitude, including research on psychometrics, the role of gratitude in motivating reciprocity, the relations between gratitude and well-being, and the relations between gratitude and spirituality. The present studies addressed several of these issues, but also suggested ways that these questions could be refined. The present findings raised several new issues as well.

Is Gratitude a Unique Emotion?

The present results indicate that gratitude as an affective trait is related but distinct from other traitlike measures of specific emotions (e.g., dispositional happiness, vitality, optimism, hope, depression, anxiety, and envy), but is gratitude distinct at the level of discrete emotional experience? Some research suggests that it is (Ellsworth & Smith, 1988; Schimmack & Reizenzein, 1997). For example, Ellsworth and Smith found that the adjectives *loving*, *grateful*, *friendly*, and *admiring* formed a cluster orthogonal to a happiness/elation/contentment cluster. Gratitude also possesses a unique pattern of attributions that distinguish it from positive emotions such as happiness and contentment (e.g., Weiner, Russell, & Lerman, 1979).

However, questions remain regarding the distinctiveness of gratitude. Although theorists have suggested that gratitude may have unique functions—particularly in the realm of reciprocal altruism and prosocial behavior (de Waal, 2000; Fredrickson, 2000; McCullough et al., 2001; Nesse, 1990; Trivers, 1971)—researchers have not investigated thoroughly whether gratitude motivates prosocial behavior in such contexts over and above the effects of positive emotions generally (see Carlson, Charlin, & Miller, 1988). In addition, no evidence indicates that discrete episodes of gratitude are accompanied by particular patterns of physiological arousal or a unique facial display. Examining whether gratitude possesses a unique pattern of action tendencies, physiological arousal, or facial displays would help in assessing the uniqueness of gratitude.

The Grateful Emotions and Attributions of Dispositionally Grateful People

Following Rosenberg's (1998) hierarchical model of affective phenomena, we speculated that people with a strong disposition toward gratitude possess a low threshold for the experience of grateful emotions in daily life. This lowered threshold for gratitude might consist of several facets: (a) more intense experiences of gratitude, (b) more frequent experiences of gratitude, (c) wider gratitude spans (i.e., feeling grateful for a greater number of specific circumstances in one's life), and (d) denser gratitude episodes (i.e., attributing each positive outcome to a greater number of people). Relatedly, we have speculated about the general attributional styles of highly grateful people: Their attributional styles may be characterized not by a tendency to attribute their positive outcomes to external sources, but rather by a tendency to

incorporate a wide variety of people who contribute to their positive outcomes. Exploring these notions about the emotional experience and attributions of dispositionally grateful people could help to elucidate the affective and cognitive mechanisms that constitute the grateful personality.

Health, Well-Being, and Coping

Finally, given the consistent connections of gratitude to affective traits and well-being, it might be useful to explore whether gratitude actually promotes well-being. Pondering the circumstances in one's life for which one is grateful appears to be a common way of coping with both acute and chronic stressful life events (e.g., Barusch, 1997; Coffman, 1996), perhaps in a manner akin to the "benefit-finding" described by Affleck and Tennen (1996). Moreover, experimental research suggests that discrete experiences of gratitude and appreciation may cause increases in parasympathetic myocardial control (McCarty, Atkinson, Tiller, Rein, & Watkins, 1995), as well as improvements in more molar aspects of health (Emmons & McCullough, 2000). These preliminary findings may provide the impetus for more detailed investigations of the possibility that gratitude plays a role in health and well-being, perhaps even as a mediator of the robust association between religiousness and physical health (for review see McCullough, Hoyt, Larson, Koenig, & Thoresen, 2000).

Conclusion

From the age of Seneca to the present day, scholars in the humanities have grappled with the nature of gratitude as a human disposition and affective state. However, gratitude has escaped systematic attention by psychologists almost completely (Emmons & Crumpler, 2000; McCullough et al., 2001). The goal of the present article was to present and test some basic propositions about the nature of the disposition toward gratitude and its relationships to affect and well-being, prosociality, spirituality, and the Big Five. Our findings, though intriguing, are but an initial look at the disposition toward gratitude. Hopefully, future researchers can make use of the insights and measurement tools described in the present article to extend psychology's understanding of gratitude and its roles in individual and interpersonal functioning.

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Appendix

The Gratitude Questionnaire-6 (GQ-6)

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

- 1 = **strongly disagree**
 2 = **disagree**
 3 = **slightly disagree**
 4 = **neutral**
 5 = **slightly agree**
 6 = **agree**
 7 = **strongly agree**

___1. I have so much in life to be thankful for.

___2. If I had to list everything that I felt grateful for, it would be a very long list.

___3. When I look at the world, I don't see much to be grateful for.

___4. I am grateful to a wide variety of people.

___5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.

___6. Long amounts of time can go by before I feel grateful to something or someone.

Items 3 and 6 are reverse scored.

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