Development and initial validation of an implicit measure of humility relative to arrogance

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Abstract

Data from two studies describe the development of an implicit measure of humility and support the idea that dispositional humility is a positive quality with possible benefits. In Study 1, 135 college students completed Humility and Self-Esteem Implicit Association Tests (IATs) and several self-report measures of personality self-concept. Fifty-four participants also completed the Humility IAT again approximately 2 weeks later and their humility was rated by close acquaintances. The Humility IAT was found to be internally and temporally consistent. Implicit humility correlated with self-reported humility relative to arrogance, implicit self-esteem, and narcissism (inversely). Humility was not associated with self-reported low self-esteem, pessimism, or depression. In fact, self-reported humility relative to arrogance correlated positively with self-reported self-esteem, gratitude, forgiveness, spirituality, and general health. In addition, self-reported humility and acquaintance-rated humility correlated positively; however, implicit humility and acquaintance-rated humility were not strongly associated. In Study 2, to examine the idea that humility might be associated with increased academic performance, we examined actual course grades of 55 college students who completed Humility and Self-Esteem IATs. Implicit humility correlated positively with higher actual course grades when narcissism, conscientiousness, and implicit self-esteem were simultaneously controlled. Implications and future research directions are discussed.

Keywords: *Humility, Implicit Association Test, character strength*

Introduction

Despite rich theories about probable benefits of humility (Emmons, 2000; Exline et al., 2004; Myers, 1998; Tangney, 2000; Vera & Rodriguez-Lopez, 2004), efforts to study this quality are being hindered by the lack of a quantitative measure. After substantive reviews, some researchers concluded that, "there is an urgent need for tools to measure humility" (Emmons & Paloutzian, 2003, p. 390) and "the present bottom line is that the measurement of humility remains an unsolved challenge in psychology" (Tangney, 2002, p. 415). In this paper we review various conceptualizations of humility, discuss measurement challenges posed by the construct, and describe the development and initial validation of an implicit measure of humility that could circumvent some barriers to self-report assessment of this construct. An implicit measure of humility could offer promise for future scientific investigations into the nature, development, and possible benefits of humility.

Defining humility as a virtue or character strength

The etymological roots of *humility* were traced to the Latin terms *humilis* (i.e., lowly, humble, or literally "on the ground") and *humus* (i.e., earth). From these lexical roots, humility could be construed as a somewhat negative characteristic synonymous with lowliness, weakness, or humiliation. However, many have observed that humility has some positive connotations, such as being down-to-earth and intellectually open (Richards, 1992). People who are genuinely humble usually display respectfulness, willingness to admit imperfections, and a lack of self-focus or self-serving biases (Emmons, 2000; Exline et al., 2004; Myers, 1995; Peterson & Seligman, 2004; Rowatt, Ottenbreit, Nesselroade Jr, & Cunningham, 2002; Tangney, 2002). Most humble people also display *modesty* in their appearance, social behavior (Exline et al., 2004, p. 463), and estimation of abilities (Tice, Butler, Muraven, & Stillwell, 1995). For the purposes of this investigation, dispositional humility was defined as a psychological

quality characterized by being more humble, modest, down-to-earth, open-minded, and respectful of others (and less arrogant, immodest, conceited, closed-minded, or egotistical; cf. Exline et al., 2004; Exline & Geyer, 2004; Tangney, 2000, 2002).

Although only a handful of empirical studies have been conducted on humility, many seem to support the construal of humility as a positive quality. College students reported liking characteristics of humble people (Landrum, 2004), admiring people who give modest accounts for success (Hareli & Weiner, 2000), and perceiving humility to be a psychological strength (Exline & Geyer, 2004). Humility was not seen by college students to be similar to low self-esteem or humiliation (Exline & Geyer, 2004). Antonyms of humility (egotistical, self-centered, conceited, and narrow-minded) are often disliked (Anderson, 1968).

In contrast to narcissism or arrogance, there could be several benefits afforded to those who exhibit humility. Collins (2001) found that Chief Executive Officers who possessed a rare combination of extreme humility and strong professional will were catalysts for transforming a good company into a great one. Humility could also open the door to intellectual growth and scientific progress (Templeton, 1995). It is possible that persons who approach a new intellectual challenge with humility perform better than those who approach the endeavor with a sense of know-it-all arrogance (see Study 2). Genuine humility likely engenders flourishing in other domains as well. However, until a quality measure of humility is developed, further empirical research on this understudied character strength will likely be delayed.

Existing self-report measures and measurement challenges posed by the construct of humility

Existing self-report measures tap humility along with modesty (Costa & McCrae, 1992; Peterson & Seligman, 2004) and honesty (Ashton, Lee, & Goldberg, 2004). Costa and McCrae's 8-item measure of modesty within the Agreeableness dimension of the NEO-PI-R inlcudes the item ''I try to be humble'' and reversed-keyed items about bragging and superiority to others. Peterson and Seligman's (2004) 10-item measure of *humility–modesty* was theorized to fit with other character strengths of temperance (e.g., forgiveness, prudence, self-regulation). Specific items focus on not wanting to appear special, not bragging, and not wanting to appear arrogant. Ashton, Lee, and their colleagues found that humility-related words in several languages loaded on a sixth personality factor interpreted to be *honesty–humility* (Ashton et al., 2004;

Ashton, Lee, Perugini, et al., 2004). Facets of the honesty–humility dimension include sincerity, fairness, greed avoidance, and modesty (Lee & Ashton, 2004).

Although self-report measures of humility offer promise, the construct poses some challenges to self-report measurement. For example, if humility truly involves forgetting the self or being less attentive to the self, as some scholars suggest (e.g., Myers, 1995; Tangney, 2000), then the genuinely humble person might not attend to, focus on, or report his or her humble qualities. On the other hand, people who want to be perceived by others as desirable or virtuous may deliberately control responses or behaviors to make it appear that they possess more humility than they actually do. As Schimmel (1992, p. 39) puts it, ''in a society which rewards humility with social esteem, some people may mimic behaviors typical of authentic humility.'' Further complicating matters, people diagnosed with narcissistic personality disorder (display a pattern of grandiosity, need for admiration, lack of empathy, and enduring arrogance) may attempt to create an *appearance of humility* to mask their narcissism (see American Psychiatric Association, 1994, p. 659; Schwartz & Smith, 2002). Based on these and other possible threats to the construct validity of self-report assessments of humility, Tangney (2002, p. 415) concluded that, ''humility may represent a rare personality construct that is simply unamenable to direct self-report methods.''

Development of the Humility–Arrogance Implicit Association Test

One potential way around self-report measurement challenges posed by the construct of humility is to use an implicit measure along with self-reports and informant reports. Some implicit measures (see Fazio & Olson, 2003) are based on reaction times to associate target persons (e.g., self or other) with certain evaluative attributes (e.g., good or bad). The Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) assesses the strength of automatic associations between stimuli that represent two distinct target groups and evaluative attributes or trait terms. An important underlying assumption of the IAT is that more closely related attributes of the self or others (e.g., self and good; others and bad) are more quickly processed than less related concepts and attributes (e.g., self and bad; others and good). In essence, the faster a person correctly sorts words into a combined category (e.g., self + good; others + bad), the stronger the implicit association between the person and attribute.

The Humility–Arrogance IAT used in Studies 1 and 2 (see Table I) was patterned after existing validated measures of implicit self-esteem (Greenwald & Farnham, 2000) and implicit shyness (Asendorpf, Banse, & Mucke, 2002), and was grounded in the same theory as other established measures of implicit social cognition (Fazio & Olson, 2003; Greenwald & Banaji, 1995). Like other IATs, the Humility IAT relies on an individual's reaction times to associate attributes (e.g., humble, arrogant) with the self or others. Just as individuals with high implicit self-esteem more quickly associate positive than negative qualities with the self (Greenwald & Farnham, 2000), people who possess humility are expected to associate humility-related concepts with the self more quickly than arrogant-related concepts. The IAT's difficulty to fake (cf. Banse, Seise, & Zerbes, 2001) or deliberately control is a reported advantage versus self-reports.

Project overview and rationale

The purposes of this research were to develop and validate an implicit measure of humility (Study 1), to investigate associations between humility and known positive psychological constructs (Study 1), and to explore whether humility is associated with observable benefits (e.g., academic achievement; Study 2). In Study 1, we investigated (a) the reliability and validity of the Humility IAT, (b) whether implicit and explicit measures of humility correlated with positive and negative personal qualities, and (c) agreement between self and informant ratings of participant humility. Both internal consistency and 2-week test–retest reliability of the Humility IAT were examined in Study 1.

In addition, to establish convergent validity of the Humility IAT we included existing measures of agreeableness (Saucier, 1994), modesty (Costa & McRae, 1992), humility–modesty (Peterson & Seligman, 2004), and narcissism (Raskin & Terry, 1988). To establish discriminant validity of the Humility IAT we included measures of extraversion, conscientiousness, and impression management. A person who possesses humility should score higher than an arrogant person on measures of agreeableness, modesty, and humility–modesty. A humble person should score lower than a conceited person on narcissism facets of exhibitionism, exploitation, vanity, and entitlement. People who possess humility should not necessarily score differently than egotistical persons on measures of extraversion, conscientiousness, or desirable responding.

Most researchers have construed humility–modesty as a character strength or virtue (Exline & Geyer, 2004; Peterson & Seligman, 2004). To test this idea further we included measures of some positive qualities (e.g., self-esteem, satisfaction with life, optimism) and negative qualities (e.g., depression, neuroticism, and poor health). Positive correlations between measures of humility–modesty and self-esteem, optimism, life satisfaction, and perhaps even impression management, would further support the idea that humility is a positive quality. Negative or minimal correlations between measures of humility–modesty and depression, neuroticism, or poor health would also support the interpretation of humility as a positive psychological quality.

We also turned to Peterson and Seligman's (2004) classification of strengths for theoretical guidance about where humility–modesty fits in relation to other psychological virtues. In their system, humility–modesty and forgiveness are both included as strengths of *temperance* that protect against excess. Gratitude and spirituality are both included as strengths of *transcendence* that forge connections to the larger universe and provide meaning (Peterson & Seligman, 2004). Love of learning and curiosity are included as strengths of *wisdom and knowledge* that entail the acquisition and use of information. Measures of forgiveness, gratitude,

Table I. Sequence of trial blocks in the humility–arrogance IAT.

Block	No. of trials	Task function	Items assigned to left-key response	Items assigned to right-key response
1	24	Practice	Humility words	Arrogant words
2	24	Practice	Self words	Other words
3	24	Practice	Self + humility	Other + arrogant
4	40	Test	Self + humility	Other + arrogant
5	24	Practice	Humility words	Arrogant words
6	24	Practice	Self + arrogant	Other + humility
7	40	Test	Self + arrogant	Other + humility

Note: For half the participants the positions of Blocks 1, 3, and 4 are switched with Blocks 5, 6, and 7. The stimulus words used in the Humility IAT are as follows: *self* (I, me, my, mine, self); *others* (they, them, their, it, other); *humility* (humble, modest, tolerant, down-to-earth, respectful, open-minded); *arrogant* (arrogant, immodest, egotistical, high-and-mighty, closed-minded, conceited).

and spiritual transcendence were included in Study 1. An indicator of knowledge (i.e., academic performance in a psychological science class) was investigated in Study 2. Positive correlations between measures of humility–modesty and other known character strengths or academic performance would constitute further support for the positive psychological nature of humility.

Method

Participants

One hundred and thirty-five undergraduate college students participated from June to December 2004 (33 men, 101 women, one person did not specify gender; *mean age* = 20 years; *ethnicity*: 67% Caucasian, 12% Asian, 9% Hispanic, 8% African American, 4% another ethnicity; *religious affiliation*: 63% Protestant, 19% Catholic, 7% "none," 4.5% other religious affiliation, 3% Hindu, 2% Muslim, 1.5% Buddhist).

Self-report measures

Each participant was asked to complete the following self-report measures of personality, self-concept, and general well-being. Cronbach alphas for these measures are reported in Tables II and III.

(A) A 1-item self-report *Humility Thermometer* was created to assess degree of humility relative to arrogance (0° = very arrogant, 100° = very humble).

(B) Participants rated seven *Humility Semantic Differential* items on a 7-point scale between the following end-labels: humble/arrogant, modest/immodest, respectful/disrespectful, egotistical/not self-centered, conceited/not conceited, intolerant/tolerant, closed-minded/open-minded.

(C) The *Modesty* subscale of the NEO-PI-R (Costa & McCrae, 1992) was administered with permission from Psychological Assessment Resources. According to Costa and McCrae (1992), high scorers on this subscale tend to be humble and self-effacing though not necessarily lacking in self-esteem or self-confidence; whereas, low scorers believe they are superior to others and may be considered by others to be conceited or arrogant. The eight items were rated using a 5-point scale (1 = strongly disagree; 5 = strongly agree).

(D) The *Humility–Modesty Subscale* of the Values in Action Inventory of Strengths (VIA-IS) is a 10-item unpublished measure of modest self-presentation and low self-focus (see Peterson & Seligman, 2004). Items were rated on a 5-point scale (1 = very much unlike me, 2 = unlike me, 3 = neutral, 4 = like me, 5 = very much like me; example items: "I am always humble about the good things that have happened to me; I rarely call attention to myself").

(E) The *Narcissism Personality Inventory* (Raskin & Terry, 1988; 40-items) measured tendencies toward grandiose ideas, exhibitionism, defensiveness in response to criticism, feelings of entitlement, exploitiveness, and lack of empathy using a 9-point rating scale (1 = extremely inaccurate; 9 = extremely accurate).

(F) Rosenberg's (1965) 10-item *Self-Esteem Scale* assessed the degree to which a person perceived himself to be a person of worth using a 7-point rating scale (1 = disagree strongly; 7 = agree strongly).

(G) The *Satisfaction With Life Scale* (Diener, Emmons, Larsen, & Griffin, 1985) is a 5-item measure of subjective well-being and happiness (1 = strongly disagree; 7 = strongly agree).

(H) The *Life Orientation Test* (Scheier, Carver, & Bridges, 1994) is a 10-item measure of optimism

Table II. Descriptive statistics and correlations between self-reported humility and implicit humility variables.

Humility measures	1	2	3	4	5	6	7	M	SD	α
1. Humility thermometer (single-item)	–	0.58***	0.41**	0.39***	0.23*	0.30*	0.32**	64.34	17.71	–
2. Humility–arrogance semantic differentials	0.54***	–	0.57***	0.44***	0.26**	0.17	0.30**	5.47	0.72	0.72
3. VIA-IS humility–modesty subscale[a]	0.36**	0.53***	–	0.51***	0.06	0.21	0.25+	3.33	0.68	0.84
4. NEO-PI-R modesty subscale	0.32**	0.39***	0.47***	–	0.11	0.08	0.30**	3.35	0.53	0.64
5. Implicit humility (Time 1, n = 135)	0.23*	0.26**	0.05	0.10	–	0.45**	0.05	0.42	0.35	0.87
6. Implicit humility (Time 2, n = 55)	0.28*	0.14	0.18	0.04	0.44***	–	0.14	0.39	0.40	0.89
7. BIDR-Impression management	–	–	–	–	–	–	–	0.29	0.17	0.70

Note: Zero-order correlation coefficients appear above the diagonal. Partial correlation coefficients (controlling for BIDR-Impression Management) appear below the diagonal. VIA-IS = Values in Action Inventory of Strengths. [a]Only the last 55 participants were asked to complete the VIA-IS humility–modesty subscale. +$p < 0.1$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

(e.g., I'm always optimistic about my future; 1 = strongly disagree; 5 = strongly agree).

(I) The 6-item *Grateful Questionnaire* (McCullough, Emmons, & Tsang, 2002) measured how dispositionally thankful people reported being (1 = strongly disagree; 7 = strongly agree).

(J) The *Forgiveness Short-Form* (Fetzer Institute, 1999) included three items that assessed forgiveness of self, others, and forgiveness by God (0 = never; 3 = always or almost always).

(K) The *Spiritual Transcendence Scale* (Piedmont, 1999) assessed broad aspects of spirituality with three 3-item subscales (1 = strongly agree; 5 = strongly disagree). One *prayer fulfillment* item was, "In the quiet of my prayers and/or meditations, I find a sense of wholeness." A *universality* item read, "I feel that on a higher level all of us share a common bond." A *connectedness* item was, "I do not have any strong emotional ties to someone who has died (reverse-keyed)."

(L) A 40-item measure of the *Five-Factor Model of Personality* (Saucier, 1994) assessed extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (1 = extremely inaccurate; 9 = extremely accurate).

(M) The *Balanced Inventory of Desirable Responding* (Paulhus & Reid, 1991) tapped the degree to which people engage in self-deceptive enhancement (20 items) and impression management (20 items) using a 7-point rating scale (1 = not true; 7 = very true). Participants received one point for each 6 or 7 and 0 for each response ≤ 5.

(N) The *Center for Epidemiologic Studies—Depression Scale* (CES-D; Radloff, 1977) included 20 items that assessed frequency of depressive symptoms during the past week, with emphasis on depressed affect or mood, for example: "I felt sad"; 0 = rarely or none of the time (less than 1 day), 1 = some or a little of the time (1–2 days), 2 = occasionally or a moderate amount of time (3–4 days), 3 = most or all of the time (5–7 days).

(O) A *Brief General Health Index* was created for this study to assess self-perceptions of overall mental and physical health using 5-point rating scales (e.g., How would you rate your overall mental health; 1 = poor; 5 = excellent). Participants also reported the number of times they went to a doctor for an illness or physical problem in the past year and the number of times they went to a counselor for mental or emotional problems during the past year. A single variable interpreted

Table III. Zero-order correlations between implicit and explicit measures of humility and social–personality variables.

Social–personality variables	α	Implicit humility (Time 1)	Humility semantic differentials	Humility thermometer	Modesty (NEO-PI-R)	Humility–modesty (VIA-IS)
Positive psychological dimensions						
Implicit self-esteem	0.92	0.32**	0.24**	0.25**	0.06	−0.06
Rosenberg self-esteem	0.83	−0.03	0.28**	0.20*	0.03	0.10
Satisfaction with life	0.85	−0.06	0.28**	0.17	0.00	0.21
Forgiveness	0.58	0.00	0.19*	0.20*	0.10	0.02
Gratitude	0.76	−0.01	0.26**	0.20*	0.17	0.14
Spiritual transcendence	0.71	0.06	0.23*	0.30**	0.12	0.08
Optimism	0.75	−0.05	0.08	0.12	−0.06	−0.07
Agreeableness	0.80	0.07	0.47**	0.27**	0.24*	0.22
Neutral psychological dimensions						
Extraversion	0.89	−0.05	−0.06	−0.08	−0.14	−0.46**
Conscientiousness	0.79	−0.07	0.10	0.05	0.04	0.23
Openness	0.76	0.10	0.21*	0.05	−0.12	−0.12
Negative psychological dimensions						
Narcissism (40-item total)	0.89	−0.19*	−0.16	−0.10	−0.52**	−0.44**
Authority	0.87	−0.04	−0.02	−0.02	−0.23**	−0.29*
Self-sufficiency	0.69	0.04	0.22*	0.09	−0.15	0.10
Superiority	0.61	−0.13	0.00	0.17	−0.27**	−0.24
Exhibitionism	0.83	−0.24**	−0.35**	−0.21*	−0.49**	−0.53**
Exploitative	0.79	−0.05	−0.19*	−0.25**	−0.33**	−0.38**
Vanity	0.87	−0.18*	−0.31**	−0.12	−0.47**	−0.33*
Entitlement	0.69	−0.18*	−0.06	−0.07	−0.34**	−0.15
Depression	0.89	0.01	−0.08	−0.05	0.07	0.09
Unhealthy	0.52	−0.05	−0.21*	−0.22*	0.07	−0.19
Neuroticism	0.83	−0.13	−0.52**	−0.35**	−0.22*	−0.26*

Note: VIA-IS = Values in Action Inventory of Strengths. *$p < 0.05$; **$p < 0.01$.

to be "unhealthy" was computed by reverse-keying the first two items, transforming the four variables into z-scores and summing the four z-scores (self-rated mental health, self-rated physical health, number of visits to counselor, number of visits to doctor) into a single aggregate variable ($\alpha = 0.52$).

Implicit Association Tests

All participants were asked to complete two IATs at Time 1, one designed to assess humility relative to arrogance (see Table I) and another that assessed self-esteem relative to other-esteem (see Greenwald & Farnham, 2000). About 40% of the participants ($n = 54$) returned 2 weeks later and completed the Humility IAT again. To take an IAT, a participant was situated at a PC and instructed to follow on-screen instructions. The following stimulus words were used in the Humility IAT: *self* (I, me, my, mine, self); *others* (they, them, their, it, other); *humility* (humble, modest, tolerant, down-to-earth, respectful, open-minded); *arrogant* (arrogant, immodest, egotistical, high-and-mighty, closed-minded, conceited). Participants were required to make a correct categorization response before the next stimulus word would appear. This created a built-in error penalty. The improved IAT scoring algorithm was used to compute the D_1 measure with built-in error penalties described by Greenwald, Nosek and Banaji (2003, pp. 208, 214). Among other steps, the algorithm we used to compute D measures used data from both practice and test blocks and eliminated trials $> 10,000\,ms$. The resulting D_1 measures in this study were used as indicators of implicit humility (relative to arrogance) and implicit self-esteem (relative to others). Below we refer to these constructs simply as implicit humility and implicit self-esteem.

Other ratings of humility

The humility–arrogance of 53 participants who completed the Humility IAT a second time was also rated by one to three informants (e.g., close friends, romantic partner, and/or a family member). After completing the Humility IAT at Time 2, participants were asked to list the names and phone numbers of people who knew them well. A research assistant contacted one acquaintance ($n = 53$), two acquaintances ($n = 39$), or three acquaintances ($n = 23$) of each participant by phone and asked how long they had known the participant, their primary relationship to the participant, how close they were to this person (1 = not at all close; 7 = very close), how well they liked this person (1 = not at all;

7 = very much), and their own sex, age, and ethnicity. The informant was then asked to rate the participant's humility using the humility thermometer, humility semantic differentials, and VIA-IS humility–modesty subscale described above. First-person items on the VIA-IS humility–modesty subscale were reworded to refer to a second person (e.g., "I do not like to stand out in a crowd," was reworded "S/he does not like to stand out in a crowd"). The informant ratings of the participants' humility were internally consistent. Cronbach α's were 0.76, 0.73, and 0.79 for the semantic differential scale items rated by 53, 39, and 23 informants respectively. Cronbach α's were 0.91, 0.76, and 0.83 for the 10 items on the VIA-IS humility–modesty scale rated by 53, 39, and 23 informants.

Results

IAT effects

Humility–Arrogance IAT effect. A repeated-measures ANOVA revealed that in the Humility IAT "test" conditions participants more quickly categorized terms in the congruent condition (self + humility, other + arrogant; $M = 831.98\,ms$, $SD = 211.81$, $n = 75$) than in the incongruent condition (self - arrogant, other + humility; $M = 944.71\,ms$, $SD = 268.33$), $F(1, 73) = 38.22$, $p < 0.001$. The "practice" conditions revealed the same pattern. That is, participants more quickly categorized terms in the congruent condition (self + humility, other + arrogant; $M = 984.41\,ms$, $SD = 304.39$) than in the incongruent condition (self + arrogant, other + humility; $M = 1149.57\,ms$, $SD = 355.19$, $n = 75$), $F(1, 73) = 31.00$, $p < 0.001$. The order of the conditions (i.e., congruent first, incongruent second; congruent second, incongruent first) did not affect response latencies in the test or practice conditions, $Fs(1, 73) < 1$.

No gender difference was found on implicit humility relative to arrogance. The implicit humility scores were very similar for men ($M = 0.41$, $SD = 0.38$) and women ($M = 0.43$, $SD = 0.34$), $F(1, 134) < 1$. Likewise, no difference in *self-reported* humility relative to arrogance was found between men ($M = 5.33$, $SD = 0.65$) and women ($M = 5.13$, $SD = 0.69$), $F(1, 130) = 1.01$, $p = 0.13$. Women scored higher on the NEO-PI-R Modesty than men [$Ms = 3.55$ vs. 3.10, $F(1, 132) = 9.21$, $p < 0.01$].

Self-esteem IAT effect replicated. A repeated-measures ANOVA revealed that in the Self-Esteem IAT "test" conditions participants more quickly categorized terms in the congruent condition (self + good; other + bad; $M = 717.14\,ms$, $SD = 224.12$, $n = 87$)

than in the incongruent condition (self + bad; other + good; $M = 838.90\,ms$, $SD = 230.06$), $F(1, 85) = 53.76$, $p < 0.001$. The same pattern was found in the "practice" conditions. That is, participants more quickly categorized terms in the congruent condition (self + good; other + bad; $M = 816.98\,ms$, $SD = 281.50$) than in the incongruent condition (self + bad; other + good; $M = 1042.46\,ms$, $SD = 357.12$, $n = 87$), $F(1, 85) = 80.25$, $p < 0.001$. As in the Humility IAT, the order of the conditions (congruent first, incongruent second; congruent second, incongruent first) did not effect response latencies in the Self-Esteem IAT test or practice conditions, $Fs(1, 85) < 1$.

Matters of reliability

IAT internal consistency. To examine the internal consistency of the IATs we followed procedures outlined by Egloff, Schwerdtfeger and Schmukle (2005). For each administration of the IAT, we subtracted each trial's log-transformed response latency in the self + humility block from the response latency of the corresponding trial in the self-arrogant block (i.e., first reaction time in Block 4 minus the first latency in Block 7, second reaction time in Block 4 minus the second latency in Block 7, etc.). Internal consistency analyses were computed using the difference scores. The Humility IATs (Time 1 $\alpha = 0.87$; Time 2 $\alpha = 0.89$) and Self-Esteem IAT (Time 1 $\alpha = 0.92$) were internally consistent. Spearman-Brown split-half correlations were also computed and were as follows: Humility IAT Time 1: $r = 0.77$; Time 2: $r = 0.77$; Self-Esteem IAT: $r = 0.85$.

Humility IAT test–retest reliability. Moderate positive correlations were found between implicit humility assessed in the practice and test IAT blocks at Time 1 ($r = 0.51$, $p < 0.001$, $n = 135$) and at Time 2 ($r = 0.64$, $p < 0.001$, $n = 55$). A moderate positive correlation was also found between implicit humility measured at Times 1 and 2 (2-week interval), $r = 0.45$, $p < 0.001$, $n = 54$. Taken together, these coefficients demonstrate some evidence for the temporal consistency of peoples' millisecond reaction times to associate "humility" and "arrogant" terms with the self relative to others.

Reliability of self-report measures. As shown in Table III, most of the self-report measures had adequate internal consistency (αs > 0.70). However, readers should interpret with caution results involving the less internally consistent 3-item measure of

forgiveness ($\alpha = 0.58$) and 4-item measure of mental and physical unhealth ($\alpha = 0.52$).

Matters of validity

Convergent validity. As shown in Table II, implicit and explicit measures of humility *relative* to arrogance correlated positively. However, implicit measures of humility relative to arrogance did not correlate with measures designed to assess humility–modesty *independently* from other constructs (like arrogance). That is, moderate positive correlations were found between Time 1 measures of implicit humility, the self-report semantic differential measure of humility relative to arrogance, and the single-item humility–arrogance thermometer. Implicit humility did not correlate with the NEO-PI-R Modesty subscale or the VIA-IS humility–modesty subscale (see Table II).

In general, measures of humility–modesty correlated in the expected direction with measures of related constructs (e.g., self-esteem, narcissism, and agreeableness). For example, implicit humility relative to arrogance correlated positively with implicit self-esteem ($r = 0.32$) and negatively with narcissism (see Table III). Measures of self-reported humility relative to arrogance also correlated positively with implicit and explicit measures of self-esteem and with self-reported agreeableness. Moderate to strong negative correlations were found between NEO-PI-R modesty, VIA-IS humility–modesty, and narcissism (see Table III).

In light of Peterson and Seligman's (2004) model of character strengths, one might expect to find that humility correlates positively with strengths of temperance and transcendence. Some support for these ideas were found. Self-reported humility relative to arrogance correlated positively with self-reported forgiveness, gratitude, and spiritual transcendence; implicit humility did not.

Discriminant validity. It was important to test whether implicit and explicit measures of humility correlated with theoretically unrelated characteristics (e.g., introversion–extraversion, conscientiousness, optimism–pessimism, or depression). Reasonable evidence of discriminant validity was found for the measures of humility. For example, implicit and explicit measures of humility did not correlate with extraversion, conscientiousness, openness, optimism, or depression. In addition, implicit humility did not correlate with self-reported impression management (see Table II).

Humility appears to be a positive component of the self. Several bits of evidence were found to support the notion that humility is a positive quality of the self. First, as previously mentioned, implicit humility and implicit self-esteem were positively related. Second, even when controlling for the impression management component of desirable responding, self-reported humility relative to arrogance (semantic differentials) correlated positively with self-reported satisfaction with life (partial $r = 0.29$, $p < 0.05$), Rosenberg self-esteem (partial $r = 0.25$, $p < 0.05$), gratitude (partial $r = 0.25$, $p < 0.05$), agreeableness (partial $r = 0.44$, $p < 0.05$), and negatively with self-reported neuroticism (partial $r = -0.47$, $p < 0.05$), narcissistic exhibitionism (partial $r = -0.31$, $p < 0.01$), and poor health (partial $r = -0.18$, $p < 0.05$). As shown in Table III, implicit humility was not associated with negative qualities like self-reported low self-esteem, neuroticism, pessimism, depression, or poor health.

Analyses of informant-ratings of participant humility–arrogance

To examine whether the informants had *consensus* about the humility of a participant we selected participants for whom there were at least three raters ($n = 23$ participants) and computed correlations between informants' estimates of participant humility. Some evidence of consensus was found. The average correlations between informants' assessments of the participants' humility were as follows: VIA humility–modesty (average $r = 0.40$), semantic differentials (average $r = 0.34$), thermometer (average $r = 0.10$).

To reduce the informant data and increase statistical power we averaged all the informant ratings of each participant to create three variables: other-rated humility thermometer, other-rated humility–arrogance semantic differentials, and other-rated VIA-IS humility–modesty. Two data-analytic approaches (i.e., comparison of means and correlations) were then used to investigate *agreement* between assessments of participant humility made by participant and the informants. As shown in

Table IV, paired-samples *t*-tests revealed that informants rated the participant significantly higher on each measure of humility than the participant rated himself. Moderate positive correlations were also found between self-reported and informant-rated humility on the multiple-item humility measures (rs = 0.36 to 0.43; see Table IV). Small negative correlations were found between participants' scores on the narcissism scale and informants' ratings of the participant's humility.

Minimal associations were found between informant ratings and the 53 participants' implicit humility (see Table Va). However, some positive correlations were found between participants' implicit humility and informant ratings of participant humility when data were used from participants ($n = 23$) who were rated by three informants (see Table Vb). For example, the participants' implicit humility relative to arrogance and informant-rated explicit humility relative to arrogance correlated positively ($r = 0.48$) when humility–arrogance was rated using a single-item thermometer and when humility was rated using semantic differentials ($r = 0.22$), but not when humility–modesty was rated independently from arrogance ($r = 0.07$).

Discussion

Humility is an understudied character strength that may be important for intellectual growth, inspirational leadership, optimal interpersonal relations, and other positive psychological processes. By definition, people who possess humility are less arrogant and more fair-minded and greed-avoidant (Lee & Ashton, 2004) than people who do not possess humility. Although some promising self-report measures of humility–modesty exist, genuinely humble people might not report themselves as being humble and narcissists could easily control their responses on a self-report humility scale to create the appearance of humility. In light of these and other possible threats to the validity of self-reported humility, we sought to develop an IAT to assess humility relative to arrogance.

Table IV. Mean differences in self-rated and informant-rated humility–arrogance.

Humility variables	Ratings by participant M (SD)	Summed ratings by informants M (SD)	n	t	r
Humility thermometer (1-item)	65.83 (16.86)	79.18 (13.58)	48	−4.41**	0.07
Humility–arrogance semantic differential (7-items)	5.55 (0.75)	5.94 (0.65)	52	−3.50**	0.36*
VIA-IS humility–modesty subscale (10-items)	3.30 (0.65)	3.84 (0.69)	49	−5.26**	0.43*

Note: VIA-IS = Values in Action Inventory of Strengths. r = paired-samples correlation. *$p < 0.01$; **$p < 0.001$.

IAT reliability and validity. Similar to other IATs designed to assess implicit attitudes (Cunningham, Preacher, & Banaji, 2001) or traits (cf. Egloff et al., 2005), the Humility–Arrogance IAT appears to be internally and temporally consistent (i.e., Cronbach α's > 0.80). However, the 2-week Humility IAT retest correlation ($r = 0.45$) was slightly lower than the average of 11 (unweighted) retest coefficients ($r = 0.54$) reported in 11 different studies across 10-minute to 1-year intervals (see Tables I and III in Egloff et al., 2005). The 2-week retest correlation we found was similar to correlations found after 10 minutes ($r = 0.52$; Banse et al., 2001) and 1 year ($r = 0.49$; Egloff et al., 2005). However, it may not be appropriate to compare retest correlations across IATs designed to assess different implicit constructs such as sexual orientation attitudes (Banse et al., 2001), anxiety–calmness (Egloff et al., 2005), and humility–arrogance.

Considerable evidence for the validity of these implicit and explicit measures of humility was also found. Implicit and explicit measures of humility relative to arrogance correlate positively. The implicit–explicit humility correspondence is similar in magnitude to the meta-analytic effect-sizes found between other implicit–explicit self-concept measures ($\rho = 0.24$; Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). Measures of implicit and explicit humility also correlate negatively with self-reported narcissism, particularly with tendencies like exhibitionism, entitlement, and vanity. As such, people who possess humility are unlikely to desire to be the center of attention, demand undue respect or benefits, or engage in ostentatious behavior.

The positive aspects of humility. Substantial evidence supports positive connotations of humility. For example, increases in implicit humility associate with viewing the self as a person of worth, and not with automatically associating negative attributes with the self. Although the etymological roots of humility are in terms that denote lowliness, implicit humility did not appear to correlate with self-reported pessimism, poor health, or depressive symptoms reported during the past week. Implicit humility did not correlate with satisfaction or dissatisfaction with life (cf. Park, Peterson, & Seligman, 2004). Self-reported humility and neuroticism did inversely associate; further evidence that humility–modesty may be intertwined with emotional stability and a positive sense of self.

Informant ratings of humility. We find that informants who are family members or friends of the participant

Table Va. Correlations between participants self-assessed humility and informant ratings.

Humility measures completed by participants	Informant ratings of participants humility		
	Humility thermometer	Humility–arrogance semantic-differentials	VIA-IS humility–modesty
Humility thermometer (1-item)	0.07	0.24+	0.20
Humility–arrogance semantic differential (7-items)	0.19	0.36*	0.14
VIA-IS humility–modesty (10-items)	0.45**	0.51**	0.43*
Implicit humility (Time 1)	0.18	0.09	−0.03
Narcissism (40-items)	−0.16	−0.13	−0.20

Note: VIA-IS = Values in Action Inventory of Strengths. $+p < 0.1$; $*p < 0.01$; $**p < 0.001$.

Table Vb. Correlations between participants ($n = 23$) self-assessed humility and averaged ratings of participants humility by three informants.

Humility measures completed by participants	Averaged ratings (by three informants) of participants' humility		
	Humility thermometer	Humility–arrogance semantic-differentials	VIA-IS humility–modesty
Humility thermometer (1-item)	0.00	0.29	0.02
Humility–arrogance semantic differential (7-items)	0.21	0.40*	0.03
VIA-IS humility–modesty (10-items)	0.45*	0.50*	0.36+
Implicit humility (Time 1)	0.48*	0.22	0.07

Note: For the analyses reported in Table Vb we only selected the 23 participants who were rated by three informants. Data from participants who were rated by one or two informants were not included in this particular analysis. VIA-IS = Values in Action Inventory of Strengths. $+p < 0.1$; $*p < 0.05$.

rate participants to be more humble than the participant rates themselves. The high other-ratings of humility, relative to self-reported humility, fit with the tendency for romantic partners to rate their partner more positively than the partner rates him or herself (Murray, Holmes, & Griffin, 1996). This pattern could also indicate that other people value humility and rate their family member/friend highly on this quality, that college students underestimate their own humility on self-report measures, or that "informants" give more positive evaluations by phone than they would on a printed survey completed privately. A future study could clarify the accuracy of these measures by comparing implicit and explicit measures of humility–modesty with spontaneous and controlled modest or arrogant behaviors.

We also found evidence of some *consensus* between informants about participant humility and some informant–participant *agreement* about participant humility. For example, the average correlation between informants' ratings of the participants' self-reported humility–modesty (VIA-IS) was 0.40. Informant ratings correlated 0.43 with participants' self-report of humility–modesty (VIA-IS). For comparison, Costa and McCrae (1992, p. 50) reported slightly lower correlations between (a) two peers' ratings of a third person's modesty ($r = 0.21$), (b) peer-report and self-report of modesty ($r = 0.28$), and (c) spouse and self-report of modesty ($r = 0.38$).

Our finding that implicit humility did not correlate strongly with informant ratings of humility made by a friend, partner, or family member is somewhat puzzling. It could be that implicit humility and other-rated humility truly do not correlate or that the different level/method of measurement (implicit vs. explicit) obscures an underlying relationship. However, within a smaller sample of participants ($n = 23$) who were rated by three informants, the participants' implicit humility scores did correlate positively with the informants' ratings of humility–arrogance made using a single-item thermometer ($r = 0.48$). Alternative validation strategies could be (a) to correlate implicit measures of participant humility completed by the participant and his partner (cf. Zayas & Shoda, 2005), (b) to gather informant data via an anonymous survey, or (c) to train two or three judges to recognize behavioral indicators of humility and arrogance (e.g., modest dress, bragging), then correlate objective judges' ratings of humility–arrogance with participants' implicit humility scores. Toward this end, future research should investigate whether people who score higher on the implicit humility measure display humility–modesty in various situations and whether individuals known to possess humility score higher on the implicit humility measure.

Linking measures of humility to observable behavior. In addition to known-groups validation, it is also important for future research to examine whether measures of humility predict other meaningful behaviors or outcomes. For example, do people who report being humble spontaneously display modest behavior or admit faults? Are humble people more open to new intellectual ideas than conceited persons are? Is humility an important virtue for educational or corporate success (cf. Collins, 2001)?

As a first preliminary test for a link between humility and a positive outcome, we studied academic performance. If humility opens the door to intellectual discovery (Templeton, 1995), then one might expect a positive association between humility and academic achievement. On the other hand, if humility is more of a weakness akin to humiliation or failure, then one might predict a negative association between humility and academic performance.

Study 2

Implicit humility and academic performance

> ...no matter how much we know, it is only a minute amount compared to all of which we are ignorant (Schimmel, 1992, p. 41).

Templeton (1995) posited that positive facets of humility are a gateway to understanding and intellectual progress. Humility could be important for continued academic achievement, openness to different perspectives, and even scientific discovery. Resistance to new information, ignorance of one's own limits, or arrogance about what one claims to know could hinder problem solving or academic performance. In light of one's mistakes, finiteness, or lack of knowledge, humility could fuel cognitive exploration and lead to demonstrated learning and quality performance.

In an educational context, students who approach a new discipline with humility may achieve more learning than students who approach the new area with arrogance or conceit. A pattern of know-it-all thinking could be inversely related to academic performance. In a study of Israeli undergraduates, for example, overconfident students earned significantly lower grades on a multiple-choice psychology test than students who were not overconfident (Zakay & Glicksohn, 1992).

Overview

To validate further the implicit measure of humility, we investigated whether implicit humility associates with actual academic performance in a college introductory psychology course. Our general

hypothesis was that implicit humility and academic performance correlate positively. A positive association between implicit humility and academic performance would be further evidence for the positive nature of humility. However, it is possible that a negative association exists between implicit humility and academic performance. If this is the case, it would be the first piece of evidence for a negative connotation of humility. That is, poor academic performance could engender humiliation or a lack of pride akin to a sense of being "humbled."

If there is a positive association between humility and academic performance, there could be several reasons or alternative explanations for such a pattern. As such, we also explored whether a few other personality and cognitive dimensions (i.e., narcissism, conscientiousness, or implicit cognitive skill) influenced the expected humility–academic performance association.

Narcissism is important to control statistically for a few reasons. Narcissists are known to overestimate their academic achievement (Farwell & Wohlwend-Llody, 1998), which could impede actual academic performance relative to people who are less narcissistic. Also, as shown in Study 1, narcissism correlates negatively with implicit humility. As such, variation in academic performance due to implicit humility might be an artifact of narcissism.

Conscientiousness and academic performance in psychology correlated positively in a sample of US college students ($r = 0.31$; Conard, 2006). Although implicit humility and a general measure of conscientiousness did not correlate in Study 1, a broader measure of conscientiousness (see Lee & Ashton, 2004) that taps facets like diligence (a tendency to work hard) and prudence (a tendency to deliberate carefully and inhibit impulses) could be intertwined with implicit humility and academic performance.

Cognitive skill could also account for variation in both IAT performance and academic performance. To account for this possibility we used the IAT scoring algorithm documented to reduce/eliminate cognitive skill artifacts in IAT performance (Cai, Sriram, Greenwald, & McFarland, 2004). We also assessed two implicit self-concept constructs (i.e., humility and self-esteem) to explore whether something about the IAT (e.g., general IAT performance) might still account for variation in academic performance or if a unique quality assessed by IATs (i.e., humility or self-esteem) accounted for variability in academic performance. Findings that implicit humility positively correlates with academic performance even when controlling for narcissism, conscientiousness, or another implicit construct would be additional evidence for the validity of the Humility IAT.

Method

Participants

Sixty-seven college students in an introductory psychology course at a private university in the south-central USA participated to fulfill a course research participation requirement ($n = 65$) or for monetary payment (US\$12; $n = 2$). Only data from 55 participants (16 men, 39 women; M age $= 19$ years, $SD = 0.80$) were analyzed and reported because some did not consent for their course grade to be used ($n = 6$), a few did not provide a valid number necessary to match personality variables and course grades ($n = 3$), two experienced excessive noise during IAT administration, and one person experienced difficulty reading words printed in English.

Materials and procedure

Participants completed a survey that contained the same self-report measures of narcissism ($\alpha = 0.91$) and impression management ($\alpha = 0.82$) used in Study 1. Participants also completed a broad self-report measure of conscientiousness ($\alpha = 0.91$; Lee & Ashton, 2004), answered some demographic questions, and were asked for their permission to contact their psychology course instructor to request exam scores in a list sorted by the last four to five digits of a non-confidential university identification number. Participants then completed the same Humility and Self-Esteem IATs described in Study 1. At the end of the Spring 2005 semester, Introductory Psychology course instructors provided the first author with exam scores. The percent of total points earned by each participant on the multiple-choice exams was computed (0–59% = F; 60–69% = D; 70–76% = C; 77–79% = C+; 80–86% = B; 87–89% = B+; 90–100% = A). Actual course grades were also coded (F = 0, D = 1, C = 2, C+ = 2.5, B = 3, B+ = 3.5, A = 4).

Results and discussion

As in Study 1, the improved IAT scoring algorithm (Greenwald et al., 2003) was used to generate implicit humility and implicit self-esteem scores. Both Humility and Self-Esteem IAT effects were replicated. Participants more quickly categorized terms in the Humility IAT *congruent* practice and test blocks (self + humility, other + arrogant; $M = 904.87\,ms$, $SD = 231.11$, $n = 55$) than *incongruent* practice and test blocks (self + arrogant, other + humility; $M = 1070.15\,ms$, $SD = 304.60$), $F(1, 108) = 59.49$, $p < 0.001$. Likewise, a repeated-measures ANOVA revealed that participants more

quickly categorized terms in the Self-Esteem IAT *congruent* practice and test blocks (self + good; other + bad; $M = 749.93\,ms$, $SD = 160.29$, $n = 54$) than *incongruent* practice and test blocks (self + bad; other + good; $M = 914.82\,ms$, $SD = 224.21$), $F(1, 106) = 88.82$, $p < 0.001$. No order effects were found. Using the method described in Study 1, we found good evidence for internal consistency of the Humility IAT ($\alpha = 0.90$; Spearman-Brown split-half $r = 0.77$) and Self-Esteem IAT ($\alpha = 0.91$; Spearman-Brown split-half $r = 0.80$). Implicit humility measures computed from the practice and test blocks were correlated ($r = 0.51$, $p < 0.001$).

Zero-order and partial correlations were computed between implicit humility, implicit self-esteem, narcissism, conscientiousness, and the indicators of academic performance (see Table VI). As hypothesized, implicit humility correlated positively with the course grade and points earned. That is, implicitly humble students earned more points and higher course grades in an introductory psychology course than students who were less implicitly humble. Furthermore, implicit self-esteem did not correlate with actual grade or percent of points earned. That implicit humility correlated positively with academic performance, but that implicit self-esteem did not, helps partially rule out a cognitive skill interpretation. If both implicit humility and implicit self-esteem had correlated positively with academic performance, a cognitive skill interpretation would be more tenable.

To explore further the implicit humility–academic performance link, eight multiple regression analyses were conducted. Across the regressions, implicit humility was positively correlated with academic performance. As shown in Table VII (Model 1), implicit humility continued to account for variability in the percent of total points earned ($\beta = 0.32$) and the corresponding letter grade earned ($\beta = 0.33$), when implicit self-esteem was statistically controlled. When implicit self-esteem and self-reported narcissism were statistically controlled (in Model 2), implicit humility still accounted for unique variation in the percent of points earned ($\beta = 0.33$) and in the letter grade earned ($\beta = 0.34$). The strength of associations between implicit humility and academic performance weakened a bit ($\beta s = 0.25$, $p s = 0.07$) when self-reported conscientiousness was included in the regression equations (see Models 3 and 4 in Table VII); however, the moderate positive associations between implicit humility and academic performance remained. Data from a few more participants would have increased statistical power to detect this expected association. It is also important to note that increases in self-reported conscientiousness were associated with increases in academic performance when other personality and self-concept dimensions were statistically controlled (see Table VII), a finding consistent with previous research (Conard, 2006). Taken together, these correlation patterns support the idea that implicit humility and actual academic

Table VII. Multiple regression analyses of implicit humility on measures of actual academic performance.

Self-concept measures	Actual grade	Actual points
Model 1		
Implicit humility	0.33★	0.32★
Implicit self-esteem	−0.06	−0.09
Model 2		
Implicit humility	0.34★	0.33★
Implicit self-esteem	−0.04	−0.07
Narcissism	0.11	0.12
Model 3		
Implicit humility	0.25+	0.25+
Implicit self-esteem	−0.02	−0.06
Conscientiousness	0.30★	0.24+
Model 4		
Implicit humility	0.25+	0.25+
Implicit self-esteem	0.00	−0.04
Narcissism	0.16	0.16
Conscientiousness	0.33★	0.27+

Note: $n = 55$. ★$p < 0.05$, +$p < 0.1$.

Table VI. Study 2: Descriptive statistics and correlations between implicit humility, personality/self-concept measures and actual academic performance.

Measures	1	2	3	4	5	6	7	M	SD
1. Implicit humility	–	0.18	−0.11	0.27★	0.32★	0.30★	0.20	0.41	0.36
2. Implicit self-esteem	0.17	–	−0.13	−0.08	0.00	−0.03	0.04	0.50	0.30
3. Narcissism	−0.08	−0.12	–	−0.16	0.08	0.09	−0.31★	5.23	0.99
4. Conscientiousness	0.11	−0.13	−0.12	–	0.37★★	0.31★	0.30	3.37	0.57
5. Actual course letter grade	0.28★	−0.01	0.11	0.31★	–	0.97★★	0.25+	2.97	0.98
6. Actual course points earned	0.26+	−0.04	0.12	0.24+	0.97★	–	0.20	83.00	9.16
7. Participant's sex (1 = man, 2 = woman)	0.12	0.03	−0.29★	0.17	0.20	0.15	–		

Note: Zero-order correlations are shown above the diagonal. Partial correlations (controlling for impression management) are shown below the diagonal. ★★$p < 0.01$, ★$p < 0.05$, +$p < 0.1$.

performance in an introductory psychology class are statistically intertwined.

Although the correspondence between implicit humility and academic performance is intriguing, it is inappropriate at this point to conclude that the quality of humility *causes* academic achievement in psychology or in other areas. It could be that past academic success or failure engenders some humility. However, it is important to note that this measure of implicit humility correlated positively with academic performance, not negatively. This pattern further supports positive connotations of humility, not the construal of humility as a negative quality of being humbled or humiliated. Furthermore, the positive implicit humility–academic performance association did not appear to be due only to a degree of narcissistic personality, conscientiousness, or general implicit test-taking ability. As such, there might be something unique about the quality of implicit humility that leads to academic achievement and perhaps even to other forms of intellectual, scientific, or creative progress.

Conclusions

The current studies are a small step toward accurate, reliable measurement of humility; however, they barely scratch the surface of what could be known about the assessment, development, and functions of this potential character strength. Future research is needed to validate further this and perhaps other implicit or explicit measures of humility. Particularly important will be quantitative studies that continue to examine implicit–explicit humility correspondence, whether measures of humility predict spontaneous behaviors and observable outcomes (e.g., modest self-presentation, leadership, or volunteerism), and how humility develops across the life span and world cultures. At this time, we conclude from these studies of college students in the USA that humility appears to be a positive component of the self that can be reliably assessed and appears to be associated with several positive psychological qualities.

Acknowledgements

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