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Gratitude predicts psychological well-being above the Big Five facets

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ABSTRACT

This study tests whether gratitude predicts psychological well-being above both the domains and facets of the five factor model. Participants ($N = 201$) completed the NEO PI-R measure of the 30 facets of the Big Five, the GQ-6 measure of trait gratitude, and the scales of psychological well-being. Gratitude had small correlations with autonomy ($r = .17$), and medium to large correlations with environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance (r s ranged from .28 to .61). After controlling for the 30 facets of the Big Five, gratitude explained a substantial amount of a unique variance in most aspects of psychological well-being ($r_{\text{equivalent}} = .14$ to .25). Gratitude is concluded to be uniquely important to psychological well-being, beyond the effect of the Big Five facets.

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1. Introduction

Throughout history, religious, theological, and philosophical treatise have viewed gratitude as integral to well-being (Emmons & Crumpler, 2000; Harpman, 2004). The systematic study of individual differences in gratitude has traditionally been neglected in psychology (McCullough, Kilpatrick, Emmons, & Larson, 2001), probably due to a more general neglect of research into positive emotions (Duckworth, Steen, & Seligman, 2005; Linley, Joseph, Harrington, & Wood, 2006).

Conceptually, gratitude should be expected to be strongly related to well-being. Gratitude represents the quintessential positive personality trait, being an indicator of a worldview orientated towards noticing and appreciating the positive in life (Wood, Maltby, Stewart, & Joseph, 2008). Grateful people feel more frequent and intense grateful affect (McCullough, Emmons, & Tsang, 2002; McCullough, Tsang, & Emmons, 2004), have more positive views of their social environments (Wood, Maltby, Stewart, Linley, & Joseph, 2008), utilize productive coping strategies (Wood, Joseph, & Linley, 2007a), have more positive traits (McCullough et al., 2002; Wood, Joseph, & Maltby, 2008; Wood, Linley, Maltby,

Baliousis, & Joseph, 2008), better sleep (Wood, Joseph, Lloyd, & Atkins, in press), and continually focus on the positive in their environments, with a greater appreciation of their life and their possessions (Wood et al., 2008). Such a life orientation towards the positive can be contrasted with a depressive worldview which typically involves a focus on the negative aspects of the self, world, and future (Beck, 1976). From a slightly different perspective, Lyubomirsky, Sheldon, and Schkade (2005) see gratitude as integral to well-being, as it offers an alternative to the “hedonistic treadmill”, where ever more possessions need to be purchased in order to maintain short term gains in happiness. In contrast, gratitude may help to avoid the hedonistic treadmill by ensuring a daily appreciation of events. This perspective has achieved early support from the studies showing that “counting your blessings” has a causal effect on well-being (Emmons & McCullough, 2003).

Considerable recent empirical work has focused on showing empirically that gratitude is related to well-being (e.g., Emmons & McCullough, 2003; Kashdan, Uswatte, & Julian, 2006; McCullough et al., 2002, 2004, Park, Peterson, & Seligman, 2004; Wood et al., 2007a). This research has suggested that gratitude is as strongly correlated with well-being as are other positive traits (Park et al., 2004), and has suggested that this relationship is causal (Emmons & McCullough, 2003; Wood, Maltby, Gillett, Linley, & Joseph, 2008). However, with one exception (Kashdan et al., 2006), research has focused on subjective well-being (SWB) and has ignored the potential relationship between gratitude and psychological well-being (PWB).

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The distinction between subjective and psychological well-being was first discussed by Aristotle (see Ryan & Deci, 2001). In the Aristotelian view, well-being can be dissociated into *hedonistic* and *eudemonic* components. Hedonistic well-being involves the experience of momentary pleasure, whereas eudemonic well-being involves acting in a way which is constructive, socially beneficial, and leads to personal growth. In more recent conceptions, hedonism is operationalized as SWB, and involves the frequent experience of positive affect, a rare experience of negative affect, and a feeling of satisfaction with life (Diener, 1984). In contrast, PWB is normally operationalized as involving self-acceptance, positive relationships with others, personal growth, purpose in life, environmental mastery, and autonomy (Ryff, 1989; Ryff & Keyes, 1995). A large number of factor analytic studies have shown that PWB and SWB are correlated but distinct aspects of well-being (e.g., Keyes, Shmotkin, & Ryff, (2002), McGregor & Little (1998), which have different patterns of correlates (Waterman, 1993). Conceptually, SWB measures an emotionally pleasant life, whereas PWB measures a life full of meaning, constructive activity, and growth.

In contrast to the large number of studies into gratitude and SWB, only one previous study has shown that gratitude is related to any aspect of PWB. Kashdan et al. (2006) showed that trait gratitude is related to daily self-regard, rewarding social activity, and the pursuit of intrinsically motivating activity. These relationships were shown to exist after removing the effects of dispositional positive and negative affect, suggesting that gratitude is not simply related to these PWB variables due to affective valiance. We expand on this study by examining whether gratitude is related to the full range of PWB variables, and by testing whether gratitude has a unique relationship with PWB, or whether gratitude is only related to PWB due to the confounding effect of the Big Five personality facets.

In the recent years, there has been a consensus that the Big Five traits of extraversion, neuroticism, conscientiousness, openness, and agreeableness represent most of personality at the highest level of abstraction (Goldberg, 1993; John & Srivastava, 1999). These variables cover the breadth of personality, including such variables as pro-sociality (under agreeableness); positive emotions, social-outgoingness, and energy (under extraversion); and negative emotions, depression, and anxiety (under neuroticism) (Costa & McCrae, 1995). As may be expected from a well-being variable, gratitude is positively correlated with extraversion, agreeableness, openness, and conscientiousness, and negatively correlated with neuroticism (e.g., McCullough et al., 2004, Wood, Joseph, et al., 2008; Wood, Maltby, Gillett et al., 2008; Wood, Maltby, Stewart et al., 2008); together the Big Five variables explain between 21% and 28% of the variance in gratitude (McCullough et al., 2002). The Big Five variables are correlated with PWB (Schmutte & Ryff, 1997), raising the possibility that gratitude is only linked to PWB because of the third variable effects of the Big Five. The Big Five traits represent some of the most studied variables over the last 50 years (Goldberg, 1993; John & Srivastava, 1999). McCullough et al. (2002) argued that for gratitude research to have an impact on personality psychology it is necessary to show that the variable has incremental validity above the effects of the Big Five personality traits.

This paper reports on a test of whether gratitude is linked to PWB after removing the effects of the facets of the Big Five. Several previous studies have shown that gratitude is related to social and well-being variables after controlling for the domains of the Big Five (e.g., McCullough et al., 2002, 2004; Wood, Maltby, Gillett et al., 2008; Wood, Maltby, Stewart et al., 2008). However, in the five factor model personality is assumed to be hierarchically organized, with other personality traits existing underneath each of the Big Five (McCrae & Costa, 1999). In the NEO PI-R operationalization

(Costa & McCrae, 1992), six personality facets are measured for each of the five domains, with a total of 30 personality measures assessing the facet level of personality. For example, the domain “agreeableness” has the six facets of trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness. As gratitude is expected to be at the facet not the domain level of personality, a stronger test of the incremental validity of gratitude would control for the 30 NEO PI-R facets, rather than just the five domains. A large literature is developing which shows that a variety of outcomes can be better predicted by measuring each of the 30 facets rather than just using global measures of the Big Five domains (e.g., Ekehammar and Akrami (2007), Paunonen, Haddock, Forsterling, and Keinonen (2003), Reynolds and Clark, 2001). Showing that gratitude is related to well-being above the effects of the domains may simply be a result of including a facet level variable in the regression equation.

In the only previous study to show that gratitude is related to any variable above the effects of the Big Five facets, Wood et al. (2008) showed that gratitude has a unique relationship with satisfaction with life. To show an incremental validity above the effects of the Big Five facets, it is necessary to select outcome variables which are not confounded with the facets (for example depression would not be an appropriate outcome variable as it is one of the facets of neuroticism). Satisfaction with life is one such variable (Schimmack, Oishi, Furr, & Funder, 2004), and Wood et al. (2008) identified PWB as a similarly appropriate variable for future research. Thus, in addition to testing whether gratitude is uniquely related to PWB, the current paper provides one of the first tests of whether gratitude can predict any outcome above the effects of the facets of the Big Five. If gratitude was only linked to outcome variables because of shared variance with the Big Five facets, then the study of gratitude may still be valuable in understanding how people with particular Big Five facet configurations view the world (cf., McCullough et al., 2002). However, for gratitude to have a unique impact on personality psychology, it is necessary to show that gratitude can explain variance in outcome variables above the Big Five facets.

2. Methods

2.1. Participants and procedure

Participants were 201 undergraduate students (128 female and 73 male). Ages ranged from 18 to 26 and ethnicity was predominantly white (75%) or Indian (13%). After agreeing to complete the study, participants were directed to a secure university website where all measures were completed in a single sitting.

2.2. Measures

Gratitude was assessed with the gratitude questionnaire-6 (GQ-6; McCullough et al., 2002). Six items assess the frequency and intensity of gratitude, as well as the range of events which cause the emotion. Items are rated on a 1 (“strongly disagree”) to 7 (“strongly agree”) scale. The GQ-6 has a unifactorial structure (shown through three confirmatory factor analyses), non-significant correlations with social desirability, good convergent validity with well-being and peer-ratings, and high test-retest reliability (McCullough et al., 2002; Wood, Maltby, Gillett, Linley, and Joseph, 2008).

PWB was measured with the 18-item scales of psychological well-being (Ryff & Keyes, 1995). Items assess self-acceptance, positive relationships with others, personal growth, purpose in life, environmental mastery, and autonomy. Items are rated on a 1 (“strongly disagree”) to 7 (“strongly agree”) scale. These scales have been used extensively in the previous research, which has

shown their independence from the measures of SWB (Keyes et al., 2002; Ryff & Keyes, 1995).

The domains and facets of the Big Five were measured with the NEO-PI-R (Costa & McCrae, 1992). The 240-item measure provides domain scores for extraversion, agreeableness, neuroticism, openness, and conscientiousness. Additionally, six facet level sub-scales are provided for each domain (see Table 1), resulting in 30 facet scores which cover the entire Big Five domain (Costa & McCrae, 1995). Participants rate items on a 0 (“strongly disagree”) to 4 (“strongly agree”) scale. The NEO-PI-R is one of the most widely used measures of the Big Five. The measure has six-year test-retest reliability ranging from .63 to .83, strong consensual validity between, self, peer, and spouse reports, and has good convergent validity with other personality and well-being measures (Costa & McCrae, 1992).

2.3. Statistical analysis

We first computed zero-order correlations between gratitude, PWB, and the Big Five. Incremental validity was then tested with six two-step hierarchical multiple regressions, respectively predicting each of the PWB variables. For each of these regressions, in the first step the 30 Big Five facets were entered. In the second step, gratitude was entered in addition to the 30 facets. As the inclusion of gratitude represents the only change between the steps, any changes in the prediction of the outcome can only be due to the effect of gratitude.

2.4. Power analysis

Power was calculated with the GPOWER software (Erdfelder, Faul, & Buchner, 1996). Power calculations are discussed in Cohen,

1988; 1992, and the power issues in multiple regressions are discussed by Green (1991). In McCullough et al. (2002, Study 4) analysis, in 20 of 22 cases gratitude correlated with well-being at $r > .20$. With 201 participants we had power $>.89$ to detect effects of this size. Regarding the overall significance of the multiple regressions predicting PWB from the Big Five facets, we had power $>.95$ to detect a multiple $R^2 > .17$. Previous research has shown that the Big Five predict more than double this amount of variance in PWB (Schmutte & Ryff, 1997). In the only previous test investigating the incremental validity of gratitude above the facets of the Big Five, Wood et al. (2008) showed that (a) the Big Five facets predicted 34% of the variance in life satisfaction, and (b) that gratitude increased prediction by $\Delta R^2 = .08$. The present study, respectively had a power of 1.00 and $>.98$ to detect these effects.

3. Results

3.1. Correlations between gratitude and the Big Five

Correlations between the Big Five facets, gratitude, and PWB are presented in Table 1. Overall, gratitude was positively correlated with certain facets from the extraversion, openness, agreeableness, and conscientiousness domains, and negatively correlated with certain neuroticism facets. In line with Wood et al. (2008), gratitude appeared to show a distinctive pattern of correlations with the Big Five facets, correlating most strongly with the facets which represented subjective well-being and social life (absolute correlations were strongest with positive emotions, depression, warmth, and altruism). The Big Five facets were also strongly correlated with PWB, highlighting the importance of covarying the facets when examining the relationship between gratitude and PWB

Table 1
Correlations between the facets of the Big Five and gratitude and PWB.

| | Gratitude | Autonomy | Environmental mastery | Personal growth | Positive relationships with others | Purpose in life | Self-acceptance |
|--------------------------|-------------------|-------------------|-----------------------|-------------------|------------------------------------|-------------------|-------------------|
| N1: Anxiety | -.03 | -.16 ^a | -.53 ^c | -.15 ^a | -.13 | .09 | -.21 ^b |
| N2: Anger hostility | -.20 ^b | .07 | -.31 ^c | -.23 ^b | -.27 ^c | -.03 | -.21 ^b |
| N3: Depression | -.31 ^c | -.10 | -.64 ^c | -.20 ^b | -.35 ^c | -.06 | -.56 ^c |
| N4: Self-consciousness | -.12 | -.13 | -.54 ^c | -.16 ^a | -.25 ^c | -.09 | -.42 ^c |
| N5: Impulsiveness | .02 | .14 ^a | -.13 | -.01 | -.06 | -.08 | -.02 |
| N6: Vulnerability | -.27 ^c | -.22 ^b | -.61 ^c | -.40 ^c | -.29 ^c | -.26 ^c | -.44 ^c |
| E1: Warmth | .44 ^c | .09 | .22 ^b | .36 ^c | .47 ^c | .18 ^a | .39 ^c |
| E2: Gregariousness | .26 ^c | -.12 | .20 ^b | .14 ^a | .34 ^c | .14 | .25 ^c |
| E3: Assertiveness | .16 ^a | .24 ^b | .35 ^c | .22 ^b | .17 ^a | .30 ^c | .36 ^c |
| E4: Activity | .24 ^c | .13 | .26 ^c | .27 ^c | .22 ^b | .18 ^a | .39 ^c |
| E5: Excitement seeking | .12 | .07 | .16 ^a | .15 ^a | .18 ^a | .04 | .23 ^b |
| E6: Positive emotions | .51 ^c | .17 ^a | .43 ^c | .37 ^c | .45 ^c | .09 | .62 ^c |
| O1: Fantasy | .13 | .24 ^b | -.08 | .01 | .08 | .00 | .03 |
| O2: Aesthetics | .01 | .20 ^b | -.13 | .29 ^c | .05 | .03 | .00 |
| O3: Feelings | .33 ^c | .20 ^b | .05 | .36 ^c | .34 ^c | .21 ^b | .24 ^b |
| O4: Actions | .03 | .12 | .13 | .25 ^c | .09 | .04 | .02 |
| O5: Ideas | .15 ^a | .40 ^c | .04 | .41 ^c | .04 | .21 ^b | .09 |
| O6: Values | .18 ^a | .29 ^c | .04 | .29 ^c | .17 ^a | .07 | .13 |
| A1: Trust | .26 ^c | -.11 | .23 ^b | .10 | .38 ^c | -.17 ^a | -.20 ^b |
| A2: Straightforwardness | .17 ^a | -.06 | -.07 | .11 | .26 ^c | -.02 | -.10 |
| A3: Altruism | .40 ^c | .14 | .12 | .40 ^c | .55 ^c | .27 ^c | .27 ^c |
| A4: Compliance | .06 | -.20 ^b | -.08 | .09 | .19 ^b | -.05 | -.04 |
| A5: Modesty | .02 | -.01 | -.20 ^b | .02 | .01 | -.06 | -.29 ^c |
| A6: Tender-mindedness | .18 ^a | .00 | -.12 | .14 ^a | .20 ^b | -.06 | -.11 |
| C1: Competence | .24 ^b | .22 ^b | .35 ^c | .40 ^c | .21 ^b | .48 ^c | .34 ^c |
| C2: Order | .055 | .01 | .046 | -.010 | .054 | .23 ^c | .061 |
| C3: Dutifulness | .28 ^c | .09 | .16 ^a | .29 ^c | .27 ^b | .34 ^c | .15 ^a |
| C4: Achievement striving | .20 ^b | .10 | .22 ^b | .32 ^c | .20 ^b | .51 ^c | .24 ^b |
| C5: Self-discipline | .27 ^c | .09 | .29 ^c | .22 ^c | .29 ^c | .39 ^c | .29 ^c |
| C6: Deliberation | -.038 | -.06 | -.11 | .10 | .04 | .25 ^c | -.06 |

^a Note: $p < 0.05$.

^b $p < 0.01$.

^c $p < 0.001$.

Table 2
Summary of six hierarchical multiple regressions to test the incremental validity of gratitude.

| Outcome variable | Step 1 | | Step 2 | | Change statistics | | |
|------------------------------------|----------------|-------------------|----------------|--------------------|-------------------|--------------------|-------------------------|
| | R ² | F(30, 170) | R ² | F(31, 169) | ΔR ² | F(1, 169) | r _{equivalent} |
| Autonomy | .40 | 3.72 ^c | .40 | 3.60 ^c | .00 | 0.287 | .03 |
| Environmental mastery | .62 | 9.08 ^c | .62 | 9.04 ^c | .01 | 3.655 | .09 |
| Personal growth | .54 | 6.55 ^c | .60 | 8.18 ^c | .06 | 27.06 ^c | .25 |
| Positive relationships with others | .54 | 6.70 ^c | .56 | 7.06 ^c | .02 | 8.82 ^b | .15 |
| Purpose in life | .46 | 4.80 ^c | .48 | 5.01 ^c | .02 | 6.55 ^a | .14 |
| Self-acceptance | .62 | 9.31 ^c | .68 | 11.72 ^c | .06 | 32.45 ^c | .25 |

Note: In Step 1 the outcome variable is regressed on the 30 Big Five facets, in Step 2 the outcome variable is regressed both onto the 30 Big Five facets and gratitude.

^a $p < .05$

^b $p < .01$

^c $p < .001$.

(for example, vulnerability was correlated with both gratitude and each of the PWB variables at between $r = .|27|$ and $|.61|$).

3.2. Correlations between gratitude and PWB

Cohen, 1988; 1992 defined effect sizes as small at $r = .10$, medium at $r = .30$, and large at $r = .50$. Adopting these definitions, gratitude had a small zero-order correlation with autonomy ($r = .17$, $p < .05$), medium correlations with environmental mastery ($r = .38$, $p < .001$) and purpose in life ($r = .28$, $p < .001$), and large correlations with personal growth ($r = .50$, $p < .001$), positive relationships with others ($r = .54$, $p < .001$), and self-acceptance ($r = .61$, $p < .001$). These correlations suggest that gratitude is an important predictor of PWB.

3.3 Incremental validity of gratitude in predicting PWB

Table 2 shows the result of six hierarchical multiple regressions testing whether gratitude can improve the prediction of PWB beyond what can be predicted by the 30 Big Five facets. Gratitude improved the prediction of personal growth, positive relationships with others, purpose in life, and self-acceptance (R^2 increased by between .02 and .08, equivalent to an incremental increase of between $r = .14$ and $.25$). Such values are conventionally interpreted as substantial incremental validities (Hunsley & Meyer, 2003). However, gratitude did not uniquely predict autonomy or environmental mastery.

4. Discussion

The study provided the first indication that gratitude is related to a full range of PWB variables, supporting theoretical positions that gratitude is related to a life that is meaningful rather than simply hedonistically pleasant (Emmons & Crumpler, 2000). The relationship between gratitude and several PWB variables (i.e., personal growth, positive relationships, purpose in life, and self-acceptance) was independent of the effects of the 30 facets of the five factor model, suggesting that gratitude may be uniquely important to PWB.

The size of the correlations between gratitude and PWB was notable. Zero-order correlations ranged from $r = .17$ to $.61$. Adopting conventional definitions (Cohen, 1988; 1992), gratitude had small correlations with autonomy ($r = .17$), and medium to large correlations with environmental mastery, personal growth, positive relationship, purpose in life, and self-acceptance (r s ranged from $.28$ to $.61$). Correlations of this size suggest that gratitude is an important predictor of PWB. Additionally, the incremental

validity after controlling for the 30 Big Five facets was reasonably substantial. Gratitude explained between 2% and 6% additional variance in PWB (equivalent to r s between $.14$ and $.25$). Whilst these would be considered small to medium zero-order correlations, Hunsley and Meyer (2003) argue that incremental validities of $.15$ should be considered “a reasonable contribution” (p. 451) as they represent estimates of the unique contribution of a variable, whereas conventional definitions of effect size assume that correlation includes both unique contribution and the contribution due to third variables. Adopting these definitions, gratitude made a reasonable incremental contribution to both purpose in life and positive relationships with others, and a contribution to self-acceptance and personal growth of a magnitude almost twice what Hunter and Murray would consider reasonable.

4.1. The nature of the relationship between gratitude and well-being

It is increasingly becoming clear that gratitude is strongly correlated with various aspects of well-being (e.g., McCullough et al. (2002, 2004), Wood, Joseph, and Linley (2007a), Wood, Joseph, and Maltby (2008)). This leads to the question whether gratitude is a predictor of well-being or actually a fundamental aspect of well-being in itself. Thus, the present research could be used to conclude (a) that gratitude is a personality trait that is related to well-being above the effect of 30 other personality traits, or (b) that gratitude is a specific aspect of well-being that is related to other aspects of well-being above the effects of 30 other personality traits. Investigating incremental validity would be important regardless of the conceptualization of gratitude. The 30 Big Five personality facets are as likely an explanation of the relationship (a) between two aspects of well-being, as (b) between another personality trait and well-being. In either case, incremental validity would need to be demonstrated to show the value of studying gratitude, given that such a vast literature already exists based on the Big Five. However, the question of whether gratitude is a predictor or aspect of well-being has wider importance for the interpretation of gratitude research. This issue is complex, as the definition of what does and does not constitute well-being is in part a social construction based on the wider views of society (Joseph & Linley, 2006; Ryan & Deci, 2001). Further, the demarcation between personality and stable aspects of well-being is perhaps more due to convention than the inherent nature of the variables (for example, neuroticism would be conventionally considered a personality trait, whereas stable levels of depression would not). However, irrespective of the definition of gratitude, the recent research has suggested that gratitude does act as a predictor of well-being. For example, gratitude leads to lower levels of stress and depression over time, controlling for prior levels of both variables (Wood, Maltby, Gillett, Linley, and Joseph, 2008). The present research contributes to this line of research by suggesting that the relationship between gratitude and well-being, however defined, is not simply due to the Big Five traits.

4.2. Limitations and conclusions

The study had some limitations, particularly the reliance on self report. Future research should examine whether the findings persist when using peer-reports (cf., Schimmack et al., 2004) or behavioral ratings of gratitude (cf., Tsang, 2006). The sample consisted purely of students and the findings may not generalize to other samples. With positive psychology constructs increasingly being considered in clinical settings (Duckworth et al., 2005), we encourage tests of whether gratitude contributes unique variance to PWB in diverse populations. Finally, the methodology can only show incremental validity with regard to the particular variables included in the study. The 30 facets of the Big Five seemed the opti-

mal selection of variables to use as covariates as the five factor model has become an integrative force in personality psychology (Watson, Clark, & Harkness, 1994), and these variables represent some of the most studied variables in the last 50 years of personality psychology (McCrae & Costa, 1999). Given this, any other selection of variables would have been somewhat arbitrary, and different researchers would always have compiled different lists of variables to be included. However, future research should develop a theory as to which other variables should be studied alongside gratitude, to see whether gratitude has a direct, confounded, or mediated relationship with PWB and other variables.

The current study suggests that gratitude is strongly related to the aspects of PWB, and that this relationship is at least partially independent of the 30 facets of the five factor model. The study of gratitude is still in its infancy (Wood, Joseph, & Linley, 2007b), and future research should concentrate on the direction of the relationship between gratitude and PWB, the conditions under which both constructs develop, and how gratitude and PWB operate in diverse life contexts.

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