

Unique Associations Between Big Five Personality Aspects and Multiple Dimensions of Well-Being

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## PERSONALITY ASPECTS AND WELL-BEING

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## Abstract

**Objective:** Personality traits are associated with well-being, but the precise correlates vary across well-being dimensions and within each Big Five domain. This study is the first to examine the unique associations between the Big Five aspects (rather than facets) and multiple well-being dimensions. **Method:** Two samples of U.S. participants (Total  $N = 706$ ,  $M_{age} = 36.17$ , 54% female) recruited via Amazon's Mechanical Turk completed measures of the Big Five aspects and subjective, psychological, and PERMA well-being. **Results:** One aspect within each domain was more strongly associated with well-being variables. Enthusiasm and Withdrawal were strongly associated with a broad range of well-being variables, but other aspects of personality also had idiosyncratic associations with distinct forms of positive functioning (e.g., Compassion with positive relationships, Industriousness with accomplishment, and Intellect with personal growth). **Conclusions:** An aspect-level analysis provides an optimal (i.e., parsimonious yet sufficiently comprehensive) framework for describing the relation between personality traits and multiple ways of thriving in life.

**Keywords:** personality; aspects; Big Five; subjective well-being; psychological well-being

## Unique Associations Between Big Five Personality Aspects and Multiple Dimensions of Well-Being

[W]hen multiple positive end states are examined, it becomes apparent that aspects of psychological well-being may be achieved by more people than just the nonneurotic, extraverted members of society. (Schmutte & Ryff, 1997, p. 558)

The large literature describing the associations between personality traits and well-being suggests that *extraversion* (the tendency to be bold, talkative, enthusiastic, and sociable) and *neuroticism* (the tendency to be emotionally unstable and prone to negative emotions) are especially strong predictors of well-being (e.g., Steel, Schmidt, & Shultz, 2008). But is well-being only accessible to the extraverted and non-neurotic? We propose that more nuanced insights can be revealed by examining the relation between narrower traits and a broader spectrum of well-being dimensions. The goal of the current study is to comprehensively describe the unique associations between personality aspects and dimensions of well-being across three well-being taxonomies.

### Personality Traits and Three Taxonomies of Well-Being

Personality traits and well-being dimensions can each be described at different levels of resolution. The Big Five domains provide a relatively comprehensive framework for organizing differential patterns of affect, behavior, and cognition (John, Naumann, & Soto, 2008). These broad traits can be further broken down into anywhere between 10 (DeYoung, Quilty, & Peterson, 2007) and 240 (Möttus, Kandler, Bleidorn, Riemann, & McCrae, 2016) narrower constituent traits that describe more precise subtleties of personality. Well-being can similarly be

conceptualized at different levels—as a single indicator (e.g., Disabato, Goodman, Kashdan, Short, & Jarden, 2016), two general “types” of well-being (Keyes, Shmotkin, & Ryff, 2002), or an array of distinct dimensions (e.g., Ryff, 1989; Seligman, 2011).

### **Aspects Balance the Goals of Parsimony and Comprehensiveness**

The personality–well-being relation could be parsimoniously described in terms of associations between the Big Five domains and global well-being. Alternatively, facet-level analyses may provide a more complete description of the associations that highly-specific personality traits have with well-being constructs (Anglim & Grant, 2016). However, as most facet models comprise at least 30 facets (Costa & McCrae, 1995; Hofstee, de Raad, & Goldberg, 1992; but see Soto & John, 2016), the potential for more comprehensive description is accompanied by a dramatic reduction in parsimony. In addition, because the number and content of facets within different taxonomies have been determined somewhat arbitrarily (DeYoung et al., 2007), a facet-level approach does not ensure comprehensiveness.

The recently-discovered *aspect* level of description (DeYoung et al., 2007) offers a potential balance between the goals of parsimony and comprehensiveness. Integrative papers that summarize the overlaps between facets across various models suggest that most of the information within each personality domain can be captured by two to four lower-level traits (DeYoung et al., 2007; John et al., 2008; Soto & John, 2016). Accordingly, DeYoung and colleagues (2007) developed a revised hierarchy in which each of the five domains divide into two distinct aspects (described in Table 1) that represent an intermediate level between facets and domains. The number of aspects was not determined arbitrarily, but motivated by evidence from a genetic model showing that two factors underlie the shared variance between facets within each Big Five domain (Jang, Livesley, Angleitner, Riemann, & Vernon, 2002). The 10

aspects may therefore offer more comprehensive description than the five domains, while being dramatically more parsimonious than 30 or more facets.

[Insert Table 1]

Studies across a range of areas have demonstrated the validity and utility of an aspect-level analysis. Such studies reveal the differential relations that aspects within a domain have with threat processing (Cunningham, Arbuckle, Jahn, Mowrer, & Abduljalil, 2010), political ideology (Hirsh, DeYoung, Xu, & Peterson, 2013), fairness preferences (Zhao, Ferguson, & Smillie, 2016), and creative achievement in the arts and sciences (Kaufman et al., 2015). The aspects may similarly capture the key within-domain divergences in predicting well-being.

### Three Taxonomies of Well-Being

Compared with the relative consensus surrounding the structure of personality, there is far less agreement about the structure and content of well-being, as reflected by the number of theories and models that exist (for a review, see Jayawickreme, Forgeard, & Seligman 2012). However, there is at least agreement that well-being is a complex, multidimensional construct.

In the current paper, we investigate the unique associations between personality aspects and well-being dimensions across three well-being taxonomies (summarized in Table 2). The first two influential models correspond to the theoretical distinction between *hedonic* and *eudaimonic* well-being (Keyes et al., 2002). Hedonic well-being is commonly operationalized using Diener's (1984) tripartite model of *subjective well-being* (SWB): life satisfaction, positive affect, and (low) negative affect. In contrast, eudaimonic perspectives, with roots in humanistic and Aristotelian traditions, emphasize human potential and existential concerns (Huta & Waterman, 2014; Maslow, 1968; Rogers, 1961). Arguing that the narrow focus of SWB on "happiness" neglects important aspects of positive functioning, Ryff (1989) developed scales of *psychological well-being* (PWB) that measure six broader, less affectively-based aspects of well-

being: autonomy, environmental mastery, personal growth, positive relations, self-acceptance, and purpose in life. Finally, the recently-developed *PERMA* model (Butler & Kern, 2016; Seligman, 2011) comprises the five “pillars” of positive emotion, engagement, relationships, meaning, and accomplishment, thereby incorporating both hedonic and eudaimonic perspectives.

[Insert Table 2]

Just as lower-level personality traits offer more comprehensive, precise description, a single well-being score may obscure meaningful variation across different dimensions of positive functioning (Butler & Kern, 2016; Kern, Waters, Adler, & White, 2015). Simply distinguishing between “hedonic” and “eudaimonic” constructs may not offer much more precision, as eudaimonia is often treated as a catch-all category for any well-being-like construct that seems different to SWB (Kashdan, Biswas-Diener, & King, 2008), and the hedonia–eudaimonia dichotomy may not accurately reflect the higher-order factor structure of self-reported well-being (Disabato et al., 2016). Instead, there is greater scientific precision and practical utility in assessing specific well-being constructs (Kashdan et al., 2008; Kern et al., 2015).

### **Personality Traits and Subjective Well-Being**

The robust links between personality and SWB were discovered decades ago (Costa & McCrae, 1980). A recent meta-analysis estimates that the Big Five domains explain 39–63% of the variance in SWB (Steel et al., 2008). This effect size is larger than that of demographic and contextual factors such as gender, age, education, and income (see Diener, Suh, Lucas, & Smith, 1999, for a review). At the level of broad traits, extraversion is most strongly and robustly associated with greater positive affect, neuroticism is linked with both greater negative affect and slightly lower positive affect, and both independently predict higher and lower levels of life satisfaction, respectively (Steel et al., 2008). However, aspect- and facet-level studies

(summarized in Table 1) suggest that specific lower-level traits may drive these domain-level associations: Enthusiasm and Withdrawal appear to be more strongly associated with SWB, relative to their complementary aspects of Assertiveness and Volatility.

### **Personality Traits and Psychological Well-Being**

Extraversion and neuroticism also predict most dimensions of PWB (Anglim & Grant, 2016). Conscientiousness, agreeableness, and openness/intellect also have links with PWB, despite being weaker predictors of SWB (see Table 1). However, domain-level relations may again be driven by lower-level traits. Notable trends (see Table 1) include incremental associations (over domains) between facets of Enthusiasm and positive relations, environmental mastery, and self-acceptance, between facets of Withdrawal and most PWB dimensions, between Industriousness and purpose in life, and between Compassion and positive relations as well as personal growth. Intellect (relative to Openness) may also be more strongly associated with PWB overall. This suggests that the Enthusiasm, Withdrawal, Industriousness, Compassion, and Intellect aspects may have idiosyncratic associations with specific PWB dimensions.

### **Personality Traits and (P)ERMA Well-Being**

As the PERMA taxonomy (Seligman, 2011) and its corresponding measure (Butler & Kern, 2016) have only recently been developed, no research to our knowledge has examined its personality correlates. Having discussed the correlates of positive emotions, and noting that Enthusiasm and Withdrawal are associated with most well-being variables, we now consider additional potential aspect correlates of the remaining four “(P)ERMA” dimensions.

The PERMA-Profiler operationalizes the engagement dimension in terms of absorption, feeling excited and interested in things, and losing track of time while doing things you enjoy. Industriousness (partialling Orderliness), Openness, and Intellect appear to be robust predictors

of components of work engagement (vigor, dedication, and absorption; Bakker, Schaufeli, Leiter, & Taris, 2008; Douglas, Bore, & Munro, 2016; Woods & Sofat, 2013). Intellect (distinct from Openness) also predicts more effortful cognitive engagement during a difficult cognitive task (Smillie, Varsavsky, Avery, & Perry, 2016), whereas Openness (distinct from Intellect) has been linked with deeper engagement in abstract art (Fayn, Tiliopoulos, & MacCann, 2015).

The remaining dimensions each have some conceptual overlap with Ryff's (1989) PWB dimensions: positive relationships is similar to positive relations, meaning is similar to purpose in life, and accomplishment overlaps with both purpose in life and environmental mastery. The personality correlates of these (P)ERMA dimensions may therefore be similar to those of their corresponding PWB dimensions: Enthusiasm and Compassion with positive relationships, and Industriousness with meaning and accomplishment.

### Summary

To summarize, personality and well-being can each be described at different levels of resolution that offer more or less nuanced descriptions of the personality–well-being interface. At the broadest, most parsimonious level of description, extraversion and neuroticism are strongly correlated with a range of well-being constructs. A closer examination of distinct well-being dimensions reveals that the extraversion–neuroticism monopoly holds for SWB, but breaks down when examining PWB and (P)ERMA well-being dimensions, which have idiosyncratic correlates across all Big Five domains. Finally, the picture becomes even more nuanced when examining narrower personality traits. Although several studies have employed a facet-level analysis, we suggest that an aspect-level analysis would be dramatically more parsimonious while being sufficiently comprehensive. To this end, aspect- and facet-level studies suggest that



one aspect from each domain (Enthusiasm, Withdrawal, Industriousness, Compassion, Intellect) is more strongly associated with well-being than the other.

### **The Present Study**

In this study, we consolidate emerging trends by comprehensively modeling the unique associations between the Big Five aspects and distinct dimensions of well-being. Across two samples, we first examine whether each aspect in a given domain is independently and equally-strongly associated with well-being variables, partialling the complementary aspect. We then compare path models to test whether the personality–well-being relation is best-modelled at the level of distinct personality aspects and dimensions of well-being. Finally, we present an exploratory path model that describes these unique aspect–well-being associations.

Although our goals were exploratory, we expected our findings to align with the literature reviewed above. This suggests that, partialling their complementary aspects, (1) Enthusiasm and low Withdrawal will have unique positive associations with most well-being variables, whereas (2) Industriousness, Compassion, and Intellect will have unique positive associations with specific dimensions of PWB and (P)ERMA well-being (e.g., Industriousness with purpose in life, environmental mastery, and accomplishment; Compassion with positive relationships; and Intellect with personal growth and engagement). In contrast, Assertiveness, Volatility, Orderliness, Politeness, and Openness may have more modest associations with well-being.

### **Method**

#### **Participants and Procedure**

We recruited two samples of U.S. residents via Amazon’s Mechanical Turk (MTurk; see Buhrmester, Kwang, & Gosling, 2011).

**Sample 1.** Data collection for our exploratory sample (Sample 1) occurred in two waves. To obtain more precise and stable estimates of the effects, we added 59 observations after running preliminary analyses on the first 142 (of 152) valid responses. Our conclusions are robust whether we include or exclude the “top-up” participants. Data collection for the two waves ended automatically when all allocated MTurk assignments were completed. Six participants were excluded due to highly inconsistent responses between an original and repeated item (i.e., differing by  $2 \leq$  scale points) used as an attention check. Due to multiple waves of data collection, we had 7 duplicate participants (based on WorkerIDs), but as we did not link WorkerIDs to survey responses, we could not exclude them. The final analyzed Sample 1 comprised 205 participants (98 female) aged 18–66 years ( $M_{\text{age}} = 34.89$ ,  $SD_{\text{age}} = 10.04$ ).

Participants identified as White/Caucasian ( $n = 155$ ), Asian ( $n = 18$ ), Black/African American ( $n = 13$ ), Hispanic/Latino ( $n = 13$ ), Native American/Alaskan Eskimo ( $n = 5$ ), and Other ( $n = 1$ ). Half of the sample held a Bachelors degree or higher (52%), most were full- or part-time employees (75%), and 45.8% disclosed household incomes above \$40,000.

**Sample 2.** Sample 2 initially comprised 520 participants, again recruited via MTurk, who completed at least one of our key measures as part of a larger survey administered by the Quiet Revolution (<http://www.quietrev.com>). After excluding 19 participants with missing data on one or more measures, the final analyzed Sample 2 comprised 501 participants (286 female) aged 18–71 ( $M_{\text{age}} = 36.77$ ,  $SD_{\text{age}} = 12.11$ ). Participants identified as White ( $n = 381$ ), Multiracial ( $n = 39$ ), Black or African American ( $n = 29$ ), Hispanic/Latino/Spanish ( $n = 21$ ), Asian ( $n = 20$ ), Indian ( $n = 4$ ), Native American/Alaskan ( $n = 1$ ), or did not disclose their origin ( $n = 6$ ). Half of the sample held a Bachelors degree or higher (51%), most were engaged in full-time, part-time,

military, or self-employment (73.1%), and 57% had household incomes greater than \$40,000.

There was no participant overlap between the two MTurk samples (based on WorkerID lists).

**Procedure.** Participants completed a battery of trait questionnaires as part of two broader projects on personality and well-being. Both questionnaire batteries included the following measures, administered via online survey software. Data collection for Sample 1 received ethical approval at the University of Melbourne, and the University of Pennsylvania's Institutional Review Board (IRB) determined that oversight was not required for analysis of Sample 2 data.

### Measures

**Big Five Aspects.** Participants completed the 100-item Big Five Aspect Scales (DeYoung et al., 2007), which measures each of the 10 aspects using 10-item subscales. Domain scores were computed by taking the means of their two constituent aspects. Participants indicated how much they agreed that each statement (e.g. "Carry out my plans"; "Like to solve complex problems") described them (1 = *strongly disagree*, 5 = *strongly agree*).

**Subjective Well-Being.** Participants completed the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), indicating their level of agreement with five statements (e.g., "I am satisfied with my life") on 7-point (Sample 1) or 5-point (Sample 2) scales anchored by *Strongly Disagree* and *Strongly Agree*. To measure affect, participants completed the positive emotions and negative emotions subscales from the 23-item PERMA-Profilier (Butler & Kern, 2016), rating how often they generally feel *joyful*, *positive*, *contented*, *anxious*, *angry*, and *sad*, on 11-point (Sample 1) or 5-point (Sample 2) scales anchored by *Never* and *Always*.

**Psychological Well-being.** Sample 1 participants completed the 54-item version of the Scales of Psychological Well-Being (Ryff, 1989), whereas Sample 2 participants completed the 42-item version. The Scales of Psychological Well-Being measure six dimensions of well-being:

autonomy (e.g., “My decisions are not usually influenced by what everyone else is doing”), environmental mastery (e.g., “I am quite good at managing the many responsibilities of my daily life”), personal growth (e.g., “For me, life has been a continuous process of learning, changing, and growth”), positive relations (e.g., “I know that I can trust my friends, and they know they can trust me”), purpose in life (e.g., “I have a sense of direction and Purpose in Life”), and self-acceptance (e.g., “In general, I feel confident and positive about myself”). Participants rated the extent to which they agreed with statements on a 6-point (Sample 1) or 5-point (Sample 2) scale anchored by *Strongly Disagree* and *Strongly Agree*.

**(P)ERMA Well-Being.** Along with the positive and negative emotions subscales described above, the PERMA Profiler (Butler & Kern, 2016) includes 3-item measures of engagement (e.g., “How often do you become absorbed in what you are doing?”), positive relationships (e.g., “To what extent do you feel loved?”), meaning (e.g., “In general, to what extent do you lead a purposeful and meaningful life?”), and accomplishment (e.g., “How often do you achieve the important goals you have set for yourself?”). Participants rated items on 11-point (Sample 1) or 5-point (Sample 2) scales anchored by *Not at All* and *Completely* or *Never* and *Always*, depending on item wordings.

### Data Analyses

Descriptive statistics and correlations were computed using SPSS Version 23, omega ( $\omega$ ) reliability coefficients (McDonald, 1999; see Dunn, Baguley, & Brunnsden, 2014) were computed using R Version 3.3.1 (R Core Team, 2016), and path analyses were deployed via Mplus Version 7 (Muthén & Muthén, 1998–2012). Average correlations were computed by transforming raw correlations using Fisher’s *r*-to-*z* formula, averaging these *z* values, and converting them back to *r*s (using the inverse of Fisher’s formula). For the path analyses, having obtained highly similar

preliminary results across both samples, we combined the samples ( $N = 706$ ) after transforming well-being variables to the Proportion of Maximum Scaling (POMS) metric (Cohen, Cohen, Aiken, & West, 1999), where 0 and 1 represent the lowest or highest possible scale scores.

## Results

### Descriptive Statistics and Correlations

Means, standard deviations, and omega reliability estimates are shown in Table 3. All measures except for engagement ( $\omega_s \leq .67$ ) showed good internal consistency ( $\omega_s \geq .77$ ).

Aspects within each domain were moderately to highly correlated ( $r_s .45-.72$ ; see Table 4), and all well-being variables were moderately to highly intercorrelated ( $r_s .21-.82$ ; see Table 5).

[Insert Table 3]

[Insert Table 4]

[Insert Table 5]

Zero-order cross-correlations between personality and well-being variables for Samples 1 and 2 appear in Tables S1 and S2, respectively. Despite slight differences in scale points and number of items, the results were highly consistent. This suggested that these observed correlations were robust and replicable, and that pooled correlations, weighted by sample size, would be appropriate. The mean zero-order correlations (see Table 6) show that extraversion and its aspects were most-strongly positively correlated with well-being, whereas neuroticism and its aspects had the strongest negative correlations with well-being. Conscientiousness, agreeableness, and openness/intellect also had moderate positive correlations with well-being. Notably, even the zero-order correlations begin to reveal discrepancies in effect sizes within domains: Enthusiasm, Withdrawal, Industriousness, Compassion, and Intellect had somewhat stronger mean correlations with well-being dimensions than their complementary aspects.

[Insert Table 6]

We next computed pooled semipartial correlations that controlled for the complementary aspect in each domain. These appear in parentheses below each of the zero-order correlations in Table 6 (see Tables S1 and S2 for Sample 1 and 2 results), and reveal an even sharper divergence within each pair of aspects in terms of their relations with wellbeing. For simplicity, we will focus only on relatively substantial semipartial correlations greater than  $|.30|$ .

In the extraversion domain, Enthusiasm (partialling Assertiveness) was substantially positively correlated with all indicators of well-being, except for autonomy. In contrast, Assertiveness (partialling Enthusiasm) only had a substantial semipartial correlation with autonomy, and much weaker associations with all other well-being variables. Overall, the average semipartial correlation for Enthusiasm (mean  $sr = .41$ ) was nearly three times the magnitude of the average semipartial correlation for Assertiveness (mean  $sr = .14$ ).

In the domain of neuroticism, Withdrawal (partialling Volatility) had substantial negative semipartial correlations with nearly all well-being variables, with a similar absolute magnitude of association with well-being variables (mean  $sr = -.42$ ) as Enthusiasm. In contrast, the average effect size for Volatility (partialling Withdrawal) was close to zero (mean  $sr = -.03$ ).

For the conscientiousness domain, Industriousness was substantially, positively associated with all indicators of positive well-being, and had the largest average semipartial correlation out of all 10 aspects (mean  $sr = .55$ ). In contrast, Orderliness was only weakly—and negatively—associated with well-being variables overall (mean  $sr = -.14$ ).

Turning to the agreeableness and openness/intellect domains, we can see that Compassion (partialling Politeness; mean  $sr = .34$ ) and Intellect (partialling Openness; mean  $sr = .31$ ) generally had moderate and similar positive semipartial correlations with well-being

variables, whereas their sister aspects of Politeness (mean  $sr = -.02$ ) and Openness (mean  $sr = .03$ ) had essentially no notable unique associations with well-being variables.

In sum, Enthusiasm, Withdrawal, Industriousness, Compassion, and Intellect (controlling for their complementary aspects) had strong unique associations with well-being variables. In contrast, their counterpart aspects generally had weak positive (Assertiveness), negligible (Volatility, Politeness, and Openness), or even weak negative (Orderliness) unique associations with well-being variables. Therefore, even though the extraversion, low neuroticism, conscientiousness, agreeableness, and openness/intellect domains were generally associated with greater well-being, these associations were largely driven by one aspect in each domain.

### **How Specific is the Relation Between Personality and Well-Being?**

Although the semipartial correlations presented above partialled out variance explained by the other aspect in the focal domain, aspects *across* domains are also correlated (see Table 4). To clarify the unique profile of aspect–well-being associations, we therefore conducted path analysis, using the combined sample, to simultaneously model the associations between all personality aspects and well-being variables.

We first examined the utility of modeling the personality–well-being relation in terms of associations between specific personality aspects (vs. domains) and distinct (vs. global) well-being variables. The results of the semipartial correlations (see Table 6) strongly suggest that the model will fit substantially better when the personality–well-being relation is modelled at the level of distinct personality aspects. The somewhat distinct profile of semipartial correlations across the 13 well-being variables also suggests at least some utility to distinguishing between different well-being variables when modeling the personality–well-being relation. To formally assess whether the relation between personality and well-being is substantially better-described

at a fine-grained level, we compared the fit of four candidate models that varied whether (1) the two aspects within each domain were free to have different associations with well-being variables, and whether (2) each well-being variable was free to have different associations with personality traits (see Grant, Langan-Fox, & Anglim, 2009).

In Model 1, we allowed personality–well-being associations to vary between personality domains, but constrained personality–well-being associations to be equivalent for the two aspects within each domain, and for all well-being variables. This model assumes that the personality–well-being relation differs across the trait domains, but does not vary appreciably between the two aspects within each domain, or across different well-being variables (with negative emotions reverse-scored). Unsurprisingly, this model fit poorly, with Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) values nowhere near traditional  $> .95$ ,  $< .06$ , and  $< .08$  cut-offs values (Hu & Bentler, 1999; see Table 7). However, the purpose of Model 1 was only to provide a frame of reference for the relative improvement in three subsequent models that freed some of these constraints.

[Insert Table 7]

In Model 2, we allowed personality–well-being associations to vary between the two aspects within each domain, but not across the 13 well-being variables. This model assumes that the personality–well-being relation will differ across the 10 personality aspects, but will not vary appreciably across different well-being variables (again with negative emotions reverse-scored). As Model 1 was nested within Model 2, we conducted a  $\chi^2$  difference test, which revealed that Model 2 had significantly better fit than Model 1,  $\chi^2(5) = 86.413$ ,  $p < .001$ . Despite this improvement, Model 2 still had unsatisfactory fit on all other indices (see Table 7). Therefore,



modeling the personality–well-being relation at the level of distinct personality aspects (but not well-being variables) did not provide a good fit to the data.

In Model 3, we once again constrained the personality–well-being associations within each domain, but this time, allowed these associations to vary across the 13 well-being variables. This model assumes that the relation between personality and well-being differs across the five trait domains and different well-being dimensions, but will not vary appreciably between aspects within each domain. A  $\chi^2$  difference test revealed that Model 3 had substantially better fit than Model 1,  $\chi^2(56) = 789.453, p < .001$ . However, Model 3 still had unsatisfactory fit on all other fit indices (see Table 7). Thus, modeling the personality–well-being relation at the level of distinct well-being variables (but not personality aspects) also did not adequately describe the data.

Finally, in Model 4, we allowed the model to freely estimate most of the aspect–well-being associations. We needed to constrain at least a few parameters to allow the model to be overidentified, so that we could obtain model fit statistics. We therefore constrained 24 paths where the semipartial correlations were nonsignificant in both Samples 1 and 2 (see Tables S1 and S2) to zero. For example, as the relation between Volatility (partialling Withdrawal) and Autonomy was near zero in both samples, these associations were constrained to zero in Model 4. In stark contrast to the previous models, Model 4 showed excellent fit on the CFI and the SRMR, whereas the RMSEA approached the standard .06 cutoff (see Table 7). This suggests that the personality–well-being relation is best described as associations between distinct personality aspects and distinct well-being variables. Given the exploratory nature of this final model (see Table 8), we focus on interpreting coefficients that meet a conservative  $p < .001$  significance threshold.

[Insert Table 8]

### Unique Associations Between Personality Aspects and Dimensions of Well-Being

The  $R^2$  values (see Table 8) reveal that aspects of personality explained an average of 56% of the variance across a broad range of well-being variables. Overall, with few exceptions, Enthusiasm and Withdrawal were consistently the two strongest predictors of each well-being variable. Industriousness and Compassion also had several notable unique well-being associations. The remaining aspects had fewer and weaker (Assertiveness, Volatility, Openness) or no notable associations with well-being variables (Orderliness, Politeness).

**Predictors of Subjective Well-Being.** As shown in Table 8, SWB variables were most strongly associated with Enthusiasm and Withdrawal. Withdrawal had substantial relations with all three variables, whereas Enthusiasm was more strongly associated with positive emotions and life satisfaction than negative emotions. Volatility also independently predicted increased negative emotions, but the effect of Withdrawal was twice as strong. The remaining associations between other personality aspects and SWB variables did not meet the  $p < .001$  threshold.

**Predictors of Psychological and (P)ERMA Well-Being.** As shown in Table 8, the effects of Enthusiasm and Withdrawal extended to the PWB and (P)ERMA dimensions of well-being. Enthusiasm had particularly notable relations with both measures of positive relationships, whereas Withdrawal had particularly strong negative associations with environmental mastery and self-acceptance. In contrast, Assertiveness and Volatility only had unique associations with greater autonomy and worse positive relations, respectively.

Beyond the extraversion and neuroticism domains, Industriousness, Compassion, and Intellect were uniquely associated with a range of PWB and (P)ERMA dimensions (see Table 8). Controlling for other significant predictors, Industriousness had notable positive associations with environmental mastery, positive relations, purpose in life, accomplishment, and meaning. In

contrast, Orderliness had negligible associations with all well-being dimensions. Compassion was one of the strongest predictors of personal growth and both measures of positive relationships, and also had notable positive associations with purpose in life and meaning. Finally, there was less of a divergence between Openness and Intellect, which both predicted greater personal growth and engagement. However, Intellect (relative to Openness) had a stronger effect on personal growth, and also independently predicted greater autonomy.

Overall, the final path model presents a parsimonious yet relatively comprehensive picture of the unique associations between personality aspects and a breadth of well-being variables. By modeling the simultaneous effects of all 10 aspects, this model bolsters and expands on the semipartial correlational finding that one aspect within each personality domain is more strongly associated with overall well-being. Together, these findings demonstrate that although Enthusiasm and Withdrawal have the strongest unique associations with nearly all well-being variables, other aspects (especially Industriousness, Compassion, and Intellect) also have notable idiosyncratic associations with specific PWB and (P)ERMA well-being variables.

## Discussion

The present research provided the first aspect-level analysis of the associations between personality traits and well-being variables featured in three taxonomies of well-being. Given that two to four lower-level traits capture most of the personality information within each domain (DeYoung et al., 2007; Soto & John, 2016), we proposed that ten personality aspects would similarly capture the major within-domain divergences in predicting well-being, while offering dramatically greater parsimony than a facet-level analysis (e.g., Anglim & Grant, 2016). In light of calls for multidimensional well-being assessment (Butler & Kern, 2016; Kern et al., 2015), we examined associations with specific well-being constructs. We showed that one aspect within

each domain (Enthusiasm, Withdrawal, Industriousness, Compassion, Intellect) was generally more strongly associated with well-being variables, relative to its complementary aspect (Assertiveness, Volatility, Orderliness, Politeness, Openness). Model comparisons then confirmed that the personality–well-being association varies substantially not only across personality aspects within each domain but also for specific well-being variables. Finally, a path model revealed idiosyncratic associations between personality aspects and well-being variables.

### **Specificity in the Personality–Well-Being Relation**

By measuring constructs at high resolution, we can describe broad patterns as well as the nuances. Although zero-order correlations revealed that all five personality domains were associated with well-being, semipartial correlations revealed that one aspect within each domain drove these associations. Enthusiasm (partialling Assertiveness), Withdrawal (partialling Volatility), Industriousness (partialling Orderliness), Compassion (partialling Politeness), and Intellect (partialling Openness) each had moderate to strong average semipartial correlations with well-being, whereas their complementary aspects had smaller or even inverse semipartial correlations with well-being. This illustrates how domain-level analyses can obscure important details about the specific traits that may underlie overall associations with well-being. This qualifies previous conclusions about the roles of extraversion and neuroticism in well-being: well-being is indeed higher for the extraverted and non-neurotic, but only to the extent that they possess the enthusiastic, non-withdrawn aspects of these traits. These findings also parsimoniously summarize trends emerging from facet-level analyses (summarized in Table 1).

Model comparisons, which assessed the value of modeling specific personality–well-being relations, revealed that models fit poorly when (1) the two aspects within a domain were assumed to have equal associations with well-being variables, or (2) all well-being variables

were assumed to have equal associations with personality traits. The only model that fit well was one where personality–well-being associations were free to vary across all 10 aspects and 13 well-being variables. This implies that both personality and well-being need to be described in sufficient detail to enable an adequate description of the associations between the two.

### **Idiosyncratic Links between Aspects and Well-Being Variables**

By simultaneously modeling all personality aspects and well-being variables, our exploratory path model sheds more light on the idiosyncratic links that remain. Consistent with previous research (Anglim & Grant, 2016), aspects of extraversion and neuroticism were associated with nearly all well-being variables. However, for the less affectively-based PWB and (P)ERMA dimensions, aspects of conscientiousness, agreeableness, and openness/intellect emerged from the shadows—sometimes even out-predicting aspects of extraversion and neuroticism. This supports Schmutte and Ryff's (1997) argument that when well-being is conceptualized in terms of multiple end states, there is more than one personality profile that predicts greater well-being.

For SWB dimensions, Enthusiasm and low Withdrawal were the strongest unique predictors of high life satisfaction and positive emotions. Withdrawal was the strongest predictor of negative emotions, whereas Volatility had an effect size that was about half the magnitude. Interestingly, Enthusiasm and Assertiveness had divergent associations with negative emotions, which may explain why the extraversion domain tends to not be uniquely associated with negative emotions.

For dimensions of PWB and (P)ERMA well-being, Enthusiasm and Withdrawal were again unique and strong predictors of nearly all well-being dimensions (see Table 8), whereas Assertiveness and Volatility had negligible roles. One notable exception was that Enthusiasm

predicted lower autonomy, whereas Assertiveness had a positive effect. This suggests that a previous domain-level analysis, which revealed that extraversion (controlling for the other Big Five domains) did not significantly predict autonomy (Anglim & Grant, 2016), may have masked the divergent effects of lower-level traits. This divergence makes sense in light of the theoretical distinction between Enthusiasm (social warmth and enjoyment of interpersonal bonds) and Assertiveness (social dominance and behaviors oriented towards attaining rewards; DeYoung, Weisberg, Quilty, & Peterson, 2013). To this end, Enthusiastic people may be less likely to go against social consensus if this makes social interactions less enjoyable, whereas Assertive individuals may be comfortable with boldly voicing their opinions if this helps them to attain rewards such as status, even to the possible detriment of other forms of adjustment.

Consistent with trends that emerged from Anglim and Grant's (2016) facet-level analysis, Industriousness had notable associations with environmental mastery, purpose in life, meaning, and accomplishment. In other words, those who are self-disciplined and hard-working are more likely to report feeling competent, purposeful, and accomplished. In contrast, Orderliness was essentially unrelated to these dimensions, and even predicted lower levels of personal growth. Also as expected, Compassion was associated with both measures of positive relationships (although the effect of Enthusiasm was two to three times greater in magnitude). Compassion was also uniquely associated with greater levels of personal growth, meaning, and purpose in life. These diverse correlates align with the perspective that prosocial behavior may be one route to well-being (e.g., Nelson, Layous, Cole, & Lyubomirsky, 2016). In contrast, Politeness (partialling Compassion) was the only aspect to have no significant independent associations with any well-being dimensions. This suggests that the tendency to be fair and considerate, in and of itself, may be largely unrelated to well-being. Finally, Intellect and Openness showed less

divergence in their prediction of well-being: both aspects had independent associations with personal growth and engagement. Intellect only had a slightly stronger association with personal growth, as well as a unique association with increased autonomy. For the latter finding, it is plausible that intellectual individuals are more confident in their beliefs because they have engaged more deeply and thoughtfully with their ideas.

### **Limitations, Strengths, and Future Directions**

There were several limitations to the current study. First, given the exploratory nature of our final path model, it needs to be replicated. Second, our use of MTurk samples potentially limits generalizability; however, our well-being intercorrelations (see Table 5) were very similar to previous studies that used a range of samples (Anglim & Grant, 2016; Butler & Kern, 2016; Schmutte & Ryff, 1997). Third, as we only obtained self-reports, personality–well-being associations may have been inflated by item content overlap. Informants may also be more accurate judges of evaluative traits (e.g., Intellect; Vazire, 2010), and could provide useful external perspectives on well-being dimensions that have an objective or interpersonal component (e.g., accomplishment, positive relationships; Jayawickreme et al., 2012). Finally, although we conceptualized personality as the predictor, causal direction is of course ambiguous in cross-sectional data, and personality and well-being may influence each other (Soto, 2015).

This study is nevertheless the first to describe the associations between the Big Five aspects and a comprehensive range of well-being variables across hedonic (Diener, 1984) and existential–humanistic conceptions of well-being (Ryff, 1989). As the Big Five aspects and PERMA are both relatively new taxonomies, we lay a necessary descriptive foundation to guide future investigations. We further suggest that an aspect-level analysis provides an optimal (i.e., parsimonious yet relatively comprehensive) framework for describing how personality traits

relate to well-being. From an applied perspective, improving “well-being” is a vague goal; instead, interventions that target specific well-being dimensions may be more useful (Kern et al., 2015). Our model homes in on patterns of affects, behaviors, and cognitions that may be most relevant for enhancing positive emotions, meaning, and other specific elements of well-being. For example, hard work (Industriousness) may be a more effective route to accomplishment than following rules (Orderliness), and practicing kindness (Compassion), not Politeness, may strengthen relationships. Personality trait (Hudson & Fraley, 2016) or state change (Blackie, Roepke, Forgeard, Jayawickreme, & Fleeson, 2014) interventions could test these possibilities.

In this study, we chose to analyze the 13 well-being variables as presented in their respective measures to enable comparisons with other studies that employ these measures and to examine the consistency of personality correlates across different measures of conceptually-similar constructs. However, as there is considerable conceptual and empirical overlap between many of these measures (see Table 5), the number of dimensions could certainly be reduced. Despite several psychometric efforts (e.g., Chen, Jing, Hayes, & Lee, 2013; Gallagher, Lopez, & Preacher, 2009), there is still little consensus about the structure of well-being, perhaps in part due to normative and theoretical debates about what constitutes the “good life”. Yet, from the perspective that the Big Five aspects represent variation in basic cybernetic (i.e., goal-directed, self-regulating) mechanisms that support or disrupt psychological functioning (DeYoung, 2015), the structure of self-reported well-being may not be fundamentally different to the structure of personality. Supporting this possibility, psychopathological traits and symptoms have already been successfully integrated with the Big Five model (Krueger & Markon, 2014; Markon, 2010).

As the Big Five taxonomy represents the major dimensions of covariation among all traits, the current study also has implications beyond traits explicitly named within Big Five



hierarchies (e.g., DeYoung et al., 2007). For example, findings relating to Enthusiasm have implications for related traits such as zest (Park, Peterson, & Seligman, 2004), and likewise for traits related to Withdrawal (e.g., experiential avoidance; Hayes et al., 2004), Industriousness (e.g., grit; Credé, Tynan, & Harms, 2016), Compassion (e.g. empathic concern; Habashi, Graziano, & Hoover, 2016), and Intellect (e.g., need for cognition; Cacioppo, Petty, Feinstein, & Jarvis, 1996). Yet, although our findings have broad trait-level implications, we also recognize that personality and its relations with well-being extend beyond the Big Five (e.g., Sheldon, Cheng, & Hilpert, 2011). Thus, investigations featuring additional frameworks such as personal projects (Little, 2015) and narrative identity (Bauer, McAdams, & Sakaeda, 2005) would provide a more holistic understanding of the ways that various levels of personality and interactions between these levels (e.g., McGregor, McAdams, & Little, 2006) contribute to well-being.

### **Conclusions**

Extraverted and non-neurotic individuals experience higher well-being—but this headline is imprecise and incomplete. Instead, the personality–well-being relation varies appreciably across personality aspects and distinct dimensions of well-being. Not all aspects of extraversion and neuroticism are equally predictive, and aspects of conscientiousness, agreeableness, and openness/intellect also have idiosyncratic, meaningful associations with distinct forms of positive functioning. This study therefore extends current knowledge on the breadth of associations between personality traits and multiple ways of thriving in life.

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## Declaration of Conflicting Interests

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Table 1

*Description of Big Five Aspects and Constituent Facets and Summary of Unique Associations with Subjective and Psychological Well-Being*

Personality Trait	Description of Aspect (Example Constituent Facets)	Subjective Well-Being	Psychological Well-Being
Extraversion		Positive affect, life satisfaction <sup>3,6,8</sup>	Positive relations, environmental mastery, purpose in life, self-acceptance, personal growth <sup>8</sup>
Enthusiasm	Friendly, sociable, enjoys rewards (Friendliness <sup>1</sup> , Warmth <sup>2</sup> , Poise <sup>1</sup> , Gregariousness <sup>2</sup> , Positive Emotions <sup>2</sup> )	Pleasant affect, subjective happiness (partialling Assertiveness) <sup>4</sup> Facets consistently related to positive affect, life satisfaction <sup>5-8</sup>	Facets predicted positive relations, mastery, self-acceptance (partialling Extraversion) <sup>8</sup>
Assertiveness	Socially dominant, motivated to attain rewards (Leadership <sup>1</sup> , Assertiveness <sup>1,2</sup> , Provocativeness <sup>1</sup> )		One facet predicted autonomy (partialling Extraversion) <sup>8</sup>
Neuroticism		(-) Positive affect, negative affect, (-) life satisfaction <sup>3,6,8</sup>	(-) Self-acceptance, (-) autonomy, (-) environmental mastery, (-) positive relations, (-) purpose in life <sup>8</sup>
Withdrawal	Susceptible to depression and anxiety, easily discouraged and overwhelmed (Depression <sup>2</sup> , Vulnerability <sup>2</sup> , Anxiety <sup>2</sup> , Self-Consciousness <sup>2</sup> )	(-) Subjective happiness (partialling Volatility) <sup>4</sup> Facets are stronger predictors of (-) positive affect, negative affect, (-) life satisfaction than Volatility facet <sup>5-7</sup>	Facets predicted (-) all dimensions (partialling Neuroticism) <sup>8</sup>
Volatility	Susceptible to anger and irritability, emotionally unstable (Calmness <sup>1</sup> , Angry hostility <sup>2</sup> , Tranquility <sup>1</sup> , Impulse control <sup>1</sup> )		One facet predicted autonomy, self-acceptance (partialling Neuroticism) <sup>8</sup>
Conscientiousness		Positive affect <sup>3,6,8</sup>	Purpose in life, environmental mastery, personal growth, self-acceptance <sup>8</sup>
Industriousness	Achievement-oriented, self-disciplined, efficient (Purposefulness <sup>1</sup> , Efficiency <sup>1</sup> ,	Facets consistently related to positive affect <sup>5,6,8</sup>	One facet predicted purpose in life (partialling Conscientiousness) <sup>8</sup>

## PERSONALITY ASPECTS AND WELL-BEING

Orderliness	Self-discipline <sup>2</sup> , Competence <sup>2</sup> Preference for tidiness and routine (Orderliness <sup>1</sup> , Perfectionism <sup>1</sup> )	One facet predicted (–) purpose in life (partialling Conscientiousness) <sup>8</sup>
Agreeableness Compassion	Feels and cares about others' emotions and well-being (Warmth <sup>1</sup> , Sympathy <sup>1</sup> , Understanding <sup>1</sup> , Empathy <sup>1</sup> )	Positive relations, (–) autonomy <sup>8</sup> One facet had larger zero-order correlations with positive relations, personal growth <sup>8</sup>
Politeness	Respects others' needs and wants (Cooperation <sup>1</sup> , Compliance <sup>2</sup> , Morality <sup>1</sup> , Straightforwardness <sup>2</sup> )	One facet predicted (–) autonomy (partialling Agreeableness) <sup>8</sup>
Openness/Intellect		Personal growth, autonomy, purpose in life <sup>8</sup>
Openness	Needs creative outlets, appreciates beauty, daydreams (Aesthetics <sup>2</sup> , Imagination <sup>1</sup> , Reflection <sup>1</sup> , Fantasy <sup>2</sup> , Feelings <sup>2</sup> )	
Intellect	Intellectual engagement and ability (Quickness <sup>1</sup> , Creativity <sup>1</sup> , Intellect <sup>1</sup> , Ideas <sup>2</sup> , Ingenuity <sup>1</sup> , Competence <sup>1</sup> )	One facet had stronger zero-order correlations with all dimensions than two Openness facets <sup>8</sup>

*Note.* Example facets are those that DeYoung et al. (2007) found to load more strongly on one aspect than the other. <sup>1</sup>Facets from the Abridged Big Five Circumplex Scales from the International Personality Item Pool, <sup>2</sup>Facets from the NEO-PI-R. <sup>3</sup>Steel et al. (2008), <sup>4</sup>Kirkland, Gruber, & Cunningham (2015), <sup>5</sup>Albuquerque, de Lima, Matos, & Figueiredo (2012), <sup>6</sup>Quevedo & Abella (2011), <sup>7</sup>Schimmack, Oishi, Furr, & Funder (2004), <sup>8</sup>Anglim & Grant (2016).

## PERSONALITY ASPECTS AND WELL-BEING

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Table 2

*Description of Subjective, Psychological, and PERMA Well-Being Taxonomies*

Taxonomy and Dimension	High Levels of Well-Being Involve...
<b>Subjective Well-Being</b>	
Positive Emotions	High frequency and intensity of positive moods and emotions
(Low) Negative Emotions	Low frequency and intensity of negative moods and emotions
Life Satisfaction	A positive subjective evaluation of one's life, using any information the person considers relevant
<b>Psychological Well-Being</b>	
Autonomy	Being independent and able to resist social pressures
Environmental Mastery	Ability to shape environments to suit one's needs and desires
Personal Growth	Continuing to develop, rather than achieving a fixed state
Positive Relations	Having warm and trusting interpersonal relationships
Self-Acceptance	Positive attitudes toward oneself
Purpose in Life	A clear sense of direction and meaning in one's efforts
<b>PERMA</b>	
Positive Emotions	Pleasant feelings, including contentment and joy
Engagement	Being absorbed, interested, and involved in activities and life
Relationships	Feeling loved, supported, and satisfied with one's relationships
Meaning	Having a sense of direction and purpose in life, or a connection to something greater than oneself
Accomplishment	Goal progress and attainment, and feelings of mastery, efficacy, and competence

## PERSONALITY ASPECTS AND WELL-BEING

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Table 3

*Means, Standard Deviations, and Omega Reliability Coefficients*

	Sample 1 (N = 205)			Sample 2 (N = 501)		
	<i>M</i> (POMS)	<i>SD</i> (POMS)	$\omega$	<i>M</i> (POMS)	<i>SD</i> (POMS)	$\omega$
Extraversion	3.28	0.71	.92	3.24	0.74	.92
Enthusiasm	3.32	0.79	.89	3.35	0.84	.89
Assertiveness	3.23	0.84	.92	3.13	0.85	.90
Neuroticism	2.66	0.81	.94	2.49	0.82	.94
Withdrawal	2.69	0.82	.87	2.62	0.90	.90
Volatility	2.63	0.93	.93	2.37	0.87	.92
Conscientiousness	3.51	0.64	.90	3.62	0.64	.89
Industriousness	3.56	0.77	.90	3.72	0.73	.88
Orderliness	3.46	0.69	.82	3.52	0.76	.85
Agreeableness	3.75	0.61	.90	3.99	0.61	.90
Compassion	3.70	0.78	.92	3.98	0.80	.93
Politeness	3.79	0.62	.80	4.01	0.62	.80
Openness/Intellect	3.73	0.60	.88	3.85	0.61	.88
Openness	3.68	0.69	.84	3.79	0.73	.84
Intellect	3.78	0.72	.87	3.90	0.70	.87
<b>SWB</b>						
Life Satisfaction	4.44 (.57)	1.65 (.27)	.94	3.17 (.54)	1.09 (.27)	.92
Positive Emotions	6.59 (.66)	2.24 (.22)	.90	3.55 (.64)	1.07 (.27)	.90
Negative Emotions	3.76 (.38)	2.22 (.22)	.80	2.33 (.33)	1.01 (.25)	.77
<b>PWB</b>						
Autonomy	4.41 (.68)	0.86 (.17)	.85	3.64 (.66)	0.74 (.19)	.78
Environmental Mastery	4.11 (.62)	0.99 (.20)	.89	3.55 (.64)	0.90 (.23)	.89
Personal Growth	4.41 (.68)	0.83 (.17)	.82	3.89 (.72)	0.72 (.18)	.79
Positive Relations	4.10 (.62)	1.06 (.21)	.90	3.72 (.68)	0.84 (.21)	.84
Self-Acceptance	3.85 (.57)	1.12 (.22)	.93	3.40 (.60)	1.02 (.25)	.92
Purpose in Life	4.24 (.65)	0.99 (.20)	.88	3.64 (.66)	0.79 (.20)	.82
<b>(P)ERMA</b>						
Engagement	7.03 (.70)	1.76 (.18)	.67	3.89 (.72)	0.74 (.18)	.60
Relationships	7.32 (.73)	2.34 (.23)	.91	3.69 (.67)	1.03 (.26)	.86
Meaning	6.83 (.68)	2.47 (.25)	.91	3.60 (.65)	1.08 (.27)	.91
Accomplishment	6.81 (.68)	1.96 (.20)	.85	3.83 (.71)	0.83 (.21)	.80

*Note.* SWB = Subjective Well-Being; PWB = Psychological Well-Being; POMS = Proportion of Maximum Scale (0 = lowest possible score, 1 = highest possible score).

## PERSONALITY ASPECTS AND WELL-BEING

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Table 4

*Zero-Order Correlations Among Big Five Domains and Aspects for Sample 1 (below the diagonal) and Sample 2 (above the diagonal)*

	E	E-E	E-A	N	N-W	N-V	C	C-I	C-O	A	A-C	A-P	O	O-O	O-I
Extraversion (E)		.87	.87	-.51	-.61	-.34	.31	.51	.03	.27	.47	-.07	.48	.32	.50
Enthusiasm (E-E)	.85		.52	-.54	-.59	-.40	.27	.46	.01	.48	.59	.18	.38	.31	.33
Assertiveness (E-A)	.87	.49		-.36	-.47	-.20	.28	.44	.05	.00	.23	-.29	.46	.25	.54
Neuroticism (N)	-.57	-.53	-.45		.93	.93	-.36	-.62	-.02	-.30	-.28	-.24	-.27	-.08	-.39
Withdrawal (N-W)	-.65	-.57	-.55	.92		.72	-.40	-.65	-.04	-.23	-.26	-.11	-.28	-.07	-.40
Volatility (N-V)	-.42	-.42	-.30	.94	.72		-.28	-.50	.01	-.34	-.27	-.33	-.22	-.07	-.31
Conscientiousness (C)	.48	.42	.41	-.47	-.50	-.38		.86	.87	.30	.28	.23	.22	.07	.31
Industriousness (C-I)	.59	.51	.51	-.65	-.68	-.54	.89		.48	.34	.34	.23	.34	.11	.48
Orderliness (C-O)	.23	.21	.19	-.14	-.16	-.10	.86	.53		.17	.14	.17	.04	.00	.06
Agreeableness (A)	.28	.48	.01	-.37	-.27	-.40	.45	.42	.37		.90	.83	.41	.43	.26
Compassion (A-C)	.45	.60	.20	-.35	-.29	-.35	.42	.42	.30	.90		.50	.50	.49	.36
Politeness (A-P)	-.03	.19	-.23	-.28	-.17	-.35	.36	.29	.34	.83	.51		.17	.22	.07
Openness/Intellect (O)	.35	.30	.31	-.29	-.30	-.25	.27	.32	.14	.45	.55	.19		.86	.85
Openness (O-O)	.19	.21	.12	-.08	-.10	-.05	.08	.09	.05	.40	.49	.17	.85		.46
Intellect (O-I)	.40	.29	.39	-.42	-.40	-.37	.37	.44	.19	.37	.45	.15	.86	.45	

*Note.* Correlations  $\geq .13$  for Sample 1 or  $\geq .11$  for Sample 2 are significant at  $p < .05$ .



## PERSONALITY ASPECTS AND WELL-BEING

Table 5

*Zero-Order Correlations Among Well-Being Variables for Sample 1 (below the diagonal) and Sample 2 (above the diagonal)*

	Subjective Well-Being			Psychological Well-Being						(P)ERMA				Mean <i>r</i> Sample 2
	SWL	PE	NE	AU	EM	PG	PR	SA	PU	E	R	M	A	
Satisfaction with Life		.75	-.53	.25	.72	.40	.60	.79	.59	.37	.67	.69	.66	.61
Positive Emotions	.75		-.63	.38	.77	.49	.72	.81	.62	.52	.72	.77	.74	.68
Negative emotions	-.46	-.60		-.42	-.71	-.40	-.58	-.68	-.56	-.26	-.48	-.55	-.52	-.54
Autonomy	.21	.39	-.35		.52	.58	.45	.51	.48	.37	.31	.44	.46	.44
Environmental Mastery	.70	.76	-.68	.46		.56	.73	.86	.74	.39	.66	.74	.75	.70
Personal Growth	.33	.43	-.39	.56	.56		.62	.60	.63	.47	.45	.58	.58	.53
Positive Relations	.57	.70	-.60	.36	.74	.55		.73	.66	.42	.75	.67	.61	.64
Self-Acceptance	.82	.79	-.61	.44	.83	.52	.76		.76	.45	.66	.79	.75	.72
Purpose in Life	.46	.57	-.52	.44	.73	.76	.66	.68		.41	.51	.80	.72	.64
Engagement	.43	.66	-.28	.31	.47	.43	.47	.45	.45		.36	.50	.52	.42
Relationships	.69	.80	-.52	.34	.68	.41	.77	.73	.57	.57		.62	.60	.58
Meaning	.73	.81	-.49	.35	.76	.52	.65	.80	.68	.55	.69		.79	.68
Accomplishment	.65	.72	-.48	.44	.79	.55	.59	.72	.66	.56	.62	.78		.65
Mean <i>r</i> Sample 1	.59	.68	-.51	.39	.70	.51	.63	.70	.61	.47	.63	.67	.64	

*Note.* All correlations are significant at  $p < .01$  for Sample 1 and  $p < .001$  for Sample 2. Mean correlations were computed with negative emotions reversed. SWL = Satisfaction with Life; PE = Positive Emotions; NE = Negative Emotions; AU = Autonomy; EM = Environmental Mastery; PG = Personal Growth; PR = Positive Relations; SA = Self-Acceptance; PU = Purpose in Life; E = Engagement; R = Relationships; M = Meaning; A = Accomplishment.

## PERSONALITY ASPECTS AND WELL-BEING

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Table 6

*N-Weighted Zero-Order and Semipartial Cross-Correlations (in parentheses) Between Personality and Well-Being Variables*

	Subjective Well-Being			Psychological Well-Being						(P)ERMA				Mean <i>r</i>
	SWL	PE	NE	AU	EM	PG	PR	SA	PU	E	R	M	A	
Extraversion	.45	.61	-.43	.53	.61	.55	.68	.61	.56	.45	.55	.59	.55	.56
Enthusiasm	.50	.66	-.49	.35	.62	.51	.77	.63	.56	.44	.58	.60	.51	.56
	<b>(.41)</b>	<b>(.53)</b>	<b>(-.41)</b>	(.07)	<b>(.46)</b>	<b>(.33)</b>	<b>(.65)</b>	<b>(.48)</b>	<b>(.40)</b>	<b>(.30)</b>	<b>(.46)</b>	<b>(.44)</b>	<b>(.33)</b>	<b>(.41)</b>
Assertiveness	.29	.41	-.26	.57	.45	.45	.41	.43	.41	.35	.37	.43	.44	.41
	(.04)	(.08)	(-.02)	<b>(.45)</b>	(.15)	(.22)	(.02)	(.13)	(.15)	(.15)	(.09)	(.14)	(.21)	(.14)
Neuroticism	-.50	-.66	.81	-.54	-.75	-.52	-.64	-.72	-.59	-.34	-.49	-.61	-.60	-.61
Withdrawal	-.57	-.70	.79	-.59	-.79	-.54	-.65	-.76	-.62	-.35	-.55	-.64	-.64	-.64
	<b>(-.44)</b>	<b>(-.47)</b>	<b>(.39)</b>	<b>(-.43)</b>	<b>(-.53)</b>	<b>(-.34)</b>	<b>(-.38)</b>	<b>(-.52)</b>	<b>(-.40)</b>	(-.22)	<b>(-.42)</b>	<b>(-.42)</b>	<b>(-.43)</b>	<b>(-.42)</b>
Volatility	-.37	-.52	.72	-.41	-.59	-.42	-.54	-.56	-.48	-.28	-.36	-.49	-.47	-.49
	(.06)	(-.02)	(.21)	(.02)	(-.03)	(-.05)	(-.10)	(-.02)	(-.04)	(-.03)	(.05)	(-.03)	(-.01)	(-.03)
Conscientiousness	.36	.39	-.31	.30	.57	.32	.44	.46	.53	.25	.38	.46	.56	.41
Industriousness	.47	.54	-.50	.49	.73	.49	.59	.62	.64	.35	.48	.59	.69	.56
	<b>(.45)</b>	<b>(.54)</b>	<b>(-.56)</b>	<b>(.55)</b>	<b>(.70)</b>	<b>(.53)</b>	<b>(.58)</b>	<b>(.61)</b>	<b>(.58)</b>	<b>(.36)</b>	<b>(.45)</b>	<b>(.57)</b>	<b>(.65)</b>	<b>(.55)</b>
Orderliness	.15	.14	-.03	.03	.25	.06	.17	.17	.28	.09	.18	.20	.27	.16
	(-.10)	(-.14)	(.25)	(-.25)	(-.13)	(-.21)	(-.14)	(-.16)	(-.05)	(-.10)	(-.07)	(-.11)	(-.09)	(-.14)
Agreeableness	.19	.30	-.25	.17	.34	.43	.54	.29	.42	.29	.34	.39	.27	.33
Compassion	.23	.35	-.22	.22	.36	.51	.61	.35	.46	.33	.41	.44	.32	.38
	(.21)	<b>(.33)</b>	(-.13)	(.23)	<b>(.30)</b>	<b>(.47)</b>	<b>(.53)</b>	<b>(.33)</b>	<b>(.40)</b>	<b>(.30)</b>	<b>(.40)</b>	<b>(.39)</b>	<b>(.30)</b>	<b>(.34)</b>
Politeness	.08	.13	-.22	.05	.20	.21	.30	.13	.24	.15	.14	.21	.12	.17
	(-.03)	(-.05)	(-.12)	(-.07)	(.02)	(-.06)	(-.01)	(-.05)	(.00)	(-.02)	(-.08)	(-.02)	(-.05)	(-.02)
Openness/Intellect	.13	.27	-.12	.45	.27	.60	.35	.28	.38	.45	.23	.33	.35	.33
Openness	.03	.17	.02	.25	.10	.44	.23	.13	.25	.37	.13	.21	.18	.19
	(-.06)	(.04)	(.14)	(.02)	(-.08)	(.19)	(.08)	(-.03)	(.08)	(.22)	(.01)	(.06)	(-.02)	(.03)
Intellect	.19	.30	-.23	.51	.37	.58	.37	.35	.40	.40	.26	.35	.43	.37
	(.20)	(.25)	(-.27)	<b>(.45)</b>	<b>(.37)</b>	<b>(.43)</b>	(.29)	<b>(.33)</b>	<b>(.32)</b>	(.26)	(.23)	(.28)	<b>(.39)</b>	<b>(.31)</b>
Mean domain <i>r</i>	.33	.46	-.43	.41	.53	.49	.54	.49	.50	.36	.40	.48	.47	.46

*Note.* Semipartial correlations greater than  $|\mathbf{.30}|$  are marked in **bold**. SWL = Satisfaction with Life; PE = Positive Emotions; NE = Negative Emotions; AU = Autonomy; EM = Environmental Mastery; PG = Personal Growth; PR = Positive Relations; SA = Self-Acceptance; PU = Purpose in Life; E = Engagement; R = Relationships; M = Meaning; A = Accomplishment. Mean domain *r* was computed with neuroticism correlations reversed.

## PERSONALITY ASPECTS AND WELL-BEING

Table 7

*Path Model Descriptions and Fit Statistics*

Model	Description	Free Parameters	$\chi^2$ (df)	CFI	RMSEA	SRMR
1	Personality–well-being associations free to vary across personality domains but not aspects or well-being variables	109	1807.946 (125)	.844	.138	.104
2	Personality-well-being associations free to vary across personality aspects but not well-being variables	114	1721.533 (120)	.851	.137	.107
3	Personality-well-being associations free to vary across personality domains and well-being variables, but not personality aspects	165	1018.493 (69)	.912	.140	.167
4	Personality-well-being associations free to vary across personality aspects and well-being variables Paths corresponding to null semipartial cross-correlations in both samples (see Tables S1 and S2) were constrained to zero	210	90.546 (24)	.994	.063	.010

## PERSONALITY ASPECTS AND WELL-BEING

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Table 8

*Standardized Beta Coefficients for Final Path Model 4*

	Subjective Well-Being			Psychological Well-Being						(P)ERMA			
	SWL	PE	NE	AU	EM	PG	PR	SA	PU	E	R	M	A
Enthusiasm	<b>0.34</b>	<b>0.40</b>	<b>-0.12</b>	<b>-0.17</b>	<b>0.21</b>	0.03	<b>0.42</b>	<b>0.27</b>	0.12*	<b>0.25</b>	<b>0.30</b>	<b>0.21</b>	<b>0.16</b>
Assertiveness	-0.07	-0.01	0.09*	<b>0.33</b>	-0.02	0.08		-0.02	0.03	0.04	0.05	0.07	0.02
Withdrawal	<b>-0.41</b>	<b>-0.43</b>	<b>0.60</b>	<b>-0.38</b>	<b>-0.49</b>	<b>-0.25</b>	<b>-0.16</b>	<b>-0.52</b>	<b>-0.32</b>	-0.04	<b>-0.28</b>	<b>-0.34</b>	<b>-0.24</b>
Volatility	0.09*	-0.05	<b>0.28</b>				<b>-0.15</b>	-0.02					
Industriousness	0.14	0.03	0.00	0.11	<b>0.32</b>	0.11	<b>0.13</b>	0.13*	<b>0.26</b>	0.11	0.08	<b>0.18</b>	<b>0.40</b>
Orderliness	0.05	0.07	0.02	-0.10*	0.05	-0.09*	0.02	0.05	0.08*	-0.01	0.08	0.04	0.03
Compassion	-0.09	-0.04	0.03	0.04	-0.01	<b>0.22</b>	<b>0.25</b>	-0.01	<b>0.15</b>	-0.03	0.14*	<b>0.13</b>	-0.03
Politeness	0.02		-0.04			0.02					-0.06		
Openness	-0.04		0.06			<b>0.15</b>	-0.02		0.07	<b>0.18</b>		0.01	
Intellect	-0.04	-0.03	0.06	<b>0.19</b>	-0.03	<b>0.24</b>	-0.03	0.00	0.00	<b>0.17</b>	-0.07	-0.04	0.09*
$R^2$	.39	.59	.70	.51	.74	.56	.73	.66	.55	.30	.42	.53	.56

*Note.* Coefficients in **bold** are statistically significant at  $p < .001$ ; \*  $p < .01$ . Blank cells represent coefficients constrained to zero. SWL = Satisfaction with Life; PE = Positive Emotions; NE = Negative Emotions; AU = Autonomy; EM = Environmental Mastery; PG = Personal Growth; PR = Positive Relations; SA = Self-Acceptance; PU = Purpose in Life; E = Engagement; R = Relationships; M = Meaning; A = Accomplishment

## Supplementary Materials for Sun, Kaufman, &amp; Smillie (2016)

Table S1  
 Zero-Order and Semipartial Cross-Correlations (in parentheses) Between Personality and Well-Being Variables for Sample 1

	Subjective Well-Being			Psychological Well-Being						(P)ERMA				Mean <i>r</i>
	SWL	PE	NE	AU	EM	PG	PR	SA	PU	E	R	M	A	
Extraversion	.45	.64	-.45	.50	.59	.53	.65	.58	.55	.52	.54	.59	.57	.55
Enthusiasm	.44	.65	-.46	.28	.56	.46	.76	.57	.53	.50	.57	.56	.49	.53
	<b>(.31)</b>	<b>(.49)</b>	<b>(-.36)</b>	(.01)	<b>(.39)</b>	(.27)	<b>(.66)</b>	<b>(.41)</b>	<b>(.37)</b>	<b>(.35)</b>	<b>(.45)</b>	<b>(.39)</b>	(.29)	<b>(.37)</b>
Assertiveness	.34	.46	-.31	.57	.45	.46	.38	.44	.42	.40	.36	.46	.49	.43
	(.15)	(.16)	(-.10)	<b>(.49)</b>	(.21)	(.27)	(.01)	(.19)	(.19)	(.18)	(.09)	(.21)	(.29)	(.20)
Neuroticism	-.51	-.67	.76	-.51	-.75	-.51	-.67	-.70	-.56	-.35	-.52	-.62	-.60	-.61
Withdrawal	-.55	-.73	.72	-.58	-.75	-.52	-.64	-.72	-.59	-.39	-.57	-.63	-.63	-.63
	<b>(-.38)</b>	<b>(-.49)</b>	<b>(.32)</b>	<b>(-.44)</b>	<b>(-.41)</b>	<b>(-.30)</b>	<b>(-.30)</b>	<b>(-.41)</b>	<b>(-.37)</b>	<b>(-.28)</b>	<b>(-.42)</b>	<b>(-.36)</b>	<b>(-.41)</b>	<b>(-.38)</b>
Volatility	-.41	-.54	.69	-.38	-.65	-.44	-.60	-.60	-.47	-.27	-.40	-.53	-.49	-.50
	(-.01)	(-.02)	(.24)	(.06)	(-.15)	(-.09)	(-.20)	(-.12)	(-.06)	(.02)	(.03)	(-.10)	(-.04)	(-.07)
Conscientiousness	.43	.47	-.35	.26	.65	.35	.49	.53	.59	.33	.48	.51	.58	.47
Industriousness	.50	.58	-.48	.42	.77	.49	.60	.64	.65	.38	.55	.63	.70	.58
	<b>(.46)</b>	<b>(.55)</b>	<b>(-.49)</b>	<b>(.49)</b>	<b>(.69)</b>	<b>(.51)</b>	<b>(.55)</b>	<b>(.58)</b>	<b>(.55)</b>	<b>(.34)</b>	<b>(.47)</b>	<b>(.59)</b>	<b>(.64)</b>	<b>(.54)</b>
Orderliness	.22	.22	-.11	.01	.34	.10	.25	.27	.36	.18	.29	.25	.30	.23
	(-.05)	(-.10)	(.16)	(-.25)	(-.08)	(-.19)	(-.08)	(-.08)	(.01)	(-.02)	(-.01)	(-.11)	(-.09)	(-.09)
Agreeableness	.12	.28	-.30	.13	.37	.39	.52	.29	.50	.28	.33	.36	.27	.32
Compassion	.15	.31	-.25	.18	.38	.50	.57	.34	.54	.35	.35	.41	.32	.36
	(.14)	(.27)	(-.14)	(.20)	<b>(.30)</b>	<b>(.49)</b>	<b>(.49)</b>	<b>(.32)</b>	<b>(.45)</b>	<b>(.34)</b>	(.29)	<b>(.36)</b>	(.29)	<b>(.32)</b>
Politeness	.05	.15	-.26	.02	.25	.14	.29	.13	.30	.11	.20	.19	.13	.17
	(-.03)	(-.01)	(-.16)	(-.08)	(.06)	(-.13)	(.01)	(-.05)	(.04)	(-.08)	(.03)	(-.02)	(-.03)	(-.01)
Openness/Intellect	.16	.24	-.19	.38	.30	.56	.30	.31	.44	.36	.16	.30	.35	.32
Openness	.04	.10	.02	.23	.11	.39	.15	.12	.28	.30	.05	.16	.17	.16
	(-.07)	(-.04)	(.20)	(.05)	(-.08)	(.17)	(-.02)	(-.06)	(.07)	(.18)	(-.05)	(.00)	(-.02)	(-.01)
Intellect	.23	.30	-.35	.42	.40	.55	.36	.40	.47	.31	.22	.36	.42	.37
	(.24)	(.29)	<b>(-.40)</b>	<b>(.36)</b>	<b>(.39)</b>	<b>(.42)</b>	<b>(.33)</b>	<b>(.39)</b>	<b>(.39)</b>	(.20)	(.22)	<b>(.32)</b>	<b>(.39)</b>	<b>(.33)</b>

*Note.* Semipartial correlations partial out the other aspect in the domain. Semipartial correlations greater than  $|\text{.30}|$  are marked in **bold**. Zero-order correlations  $\geq |\text{.14}|$  and semipartial correlations  $\geq |\text{.12}|$  are statistically significant at  $p < .05$ . Mean  $r$  was computed with negative emotions reverse-scored. SWL = Satisfaction with Life; PE = Positive Emotions; NE = Negative Emotions; AU = Autonomy; EM = Environmental Mastery; PG = Personal Growth; PR = Positive Relations; SA = Self-Acceptance; PU = Purpose in Life; E = Engagement; R = Relationships; M = Meaning; A = Accomplishment.

Table S2

Zero-Order and Semipartial Cross-Correlations (in parentheses) Between Personality and Well-Being Variables for Sample 2

	Subjective Well-Being			Psychological Well-Being						(P)ERMA				Mean <i>r</i>
	SWL	PE	NE	AU	EM	PG	PR	SA	PU	E	R	M	A	
Extraversion	.46	.60	-.42	.54	.62	.56	.69	.62	.56	.42	.55	.59	.54	.56
Enthusiasm	.53	.66	-.50	.37	.64	.54	.78	.65	.57	.41	.59	.61	.52	.58
	<b>(.46)</b>	<b>(.54)</b>	<b>(-.43)</b>	(.09)	<b>(.48)</b>	<b>(.35)</b>	<b>(.65)</b>	<b>(.51)</b>	<b>(.42)</b>	<b>(.28)</b>	<b>(.46)</b>	<b>(.46)</b>	<b>(.35)</b>	<b>(.43)</b>
Assertiveness	.27	.39	-.24	.57	.45	.45	.43	.43	.41	.33	.38	.42	.42	.40
	(-.01)	(.05)	(.02)	<b>(.44)</b>	(.13)	(.20)	(.03)	(.11)	(.13)	(.13)	(.08*)	(.12)	(.18)	(.12)
Neuroticism	-.50	-.65	.83	-.55	-.75	-.52	-.63	-.72	-.61	-.33	-.48	-.60	-.60	-.61
Withdrawal	-.57	-.69	.81	-.60	-.81	-.55	-.66	-.78	-.64	-.34	-.54	-.64	-.64	-.65
	<b>(-.46)</b>	<b>(-.46)</b>	<b>(.42)</b>	<b>(-.42)</b>	<b>(-.58)</b>	<b>(-.35)</b>	<b>(-.41)</b>	<b>(-.56)</b>	<b>(-.41)</b>	<b>(-.20)</b>	<b>(-.42)</b>	<b>(-.44)</b>	<b>(-.44)</b>	<b>(-.43)</b>
Volatility	-.35	-.52	.73	-.43	-.57	-.42	-.52	-.55	-.49	-.28	-.34	-.47	-.46	-.48
	(.09)	(-.02)	(.20)	(.01)	(.03)	(-.03)	(-.06)	(.03)	(-.04)	(-.05)	(.07)	(.00)	(.00)	(-.01)
Conscientiousness	.33	.37	-.29	.32	.54	.30	.41	.43	.51	.22	.34	.44	.55	.39
Industriousness	.45	.52	-.51	.52	.72	.49	.59	.61	.64	.34	.46	.58	.69	.56
	<b>(.45)</b>	<b>(.54)</b>	<b>(-.58)</b>	<b>(.57)</b>	<b>(.70)</b>	<b>(.53)</b>	<b>(.60)</b>	<b>(.63)</b>	<b>(.59)</b>	<b>(.37)</b>	<b>(.45)</b>	<b>(.56)</b>	<b>(.65)</b>	<b>(.56)</b>
Orderliness	.12	.11	.00	.03	.21	.04	.14	.13	.24	.05	.14	.18	.26	.13
	(-.12)	(-.16)	(.28)	(-.25)	(-.15)	(-.22)	(-.17)	(-.19)	(-.07*)	(-.14)	(-.10)	(-.11)	(-.09)	(-.16)
Agreeableness	.22	.30	-.23	.19	.32	.45	.56	.29	.38	.29	.34	.40	.27	.33
Compassion	.26	.37	-.21	.24	.35	.52	.63	.35	.43	.32	.44	.45	.33	.38
	(.24)	<b>(.35)</b>	(-.13)	(.24)	<b>(.30)</b>	<b>(.46)</b>	<b>(.55)</b>	<b>(.33)</b>	<b>(.38)</b>	(.28)	<b>(.45)</b>	<b>(.40)</b>	<b>(.31)</b>	<b>(.34)</b>
Politeness	.10	.13	-.20	.06	.18	.23	.30	.13	.21	.16	.11	.21	.12	.17
	(-.04)	(-.07)	(-.10)	(-.06)	(.01)	(-.03)	(-.02)	(-.06)	(-.01)	(.00)	(-.13)	(-.02)	(-.05)	(-.03)
Openness/Intellect	.12	.28	-.09	.47	.26	.61	.37	.28	.36	.49	.26	.34	.36	.34
Openness	.03	.19	.02	.26	.09	.46	.27	.14	.24	.40	.16	.23	.18	.21
	(-.06)	(.07)	(.12)	(.01)	(-.08*)	(.21)	(.11)	(-.02)	(.08)	(.23)	(.03)	(.08*)	(-.02)	(.04)
Intellect	.18	.29	-.18	.55	.36	.59	.37	.33	.37	.44	.28	.34	.43	.37
	(.19)	(.23)	(-.21)	<b>(.49)</b>	<b>(.36)</b>	<b>(.43)</b>	(.28)	<b>(.30)</b>	(.29)	(.28)	(.24)	(.27)	<b>(.39)</b>	<b>(.31)</b>

Note. Semipartial correlations partial out the other aspect in the domain. Semipartial correlations greater than  $|\text{.30}|$  are marked in **bold**. Zero-order and semipartial correlations  $\geq |\text{.09}|$  and those marked with \* are statistically significant at  $p < .05$ . Mean  $r$  was computed with negative emotions reverse-scored. SWL = Satisfaction with Life; PE = Positive Emotions; NE = Negative Emotions; AU = Autonomy; EM = Environmental Mastery; PG = Personal Growth; PR = Positive Relations; SA = Self-Acceptance; PU = Purpose in Life; E = Engagement; R = Relationships; M = Meaning; A = Accomplishment.