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# Do Orientations to Happiness Mediate the Associations Between Personality Traits and Subjective Well-Being?

**Noah C. Pollock · Amy E. Noser · Christopher J. Holden · Virgil Zeigler-Hill**

**Abstract** Personality traits have frequently been observed to be associated with subjective well-being. It has been suggested that personality traits may lead individuals to experience life in certain ways which, in turn, influences their subjective well-being. However, the exact mechanisms underlying this relationship remain unknown. The present study hypothesized that the ways in which individuals endorse strategies for achieving happiness (i.e., orientations to happiness: through a life of pleasure, through a life of engagement, or through a life of meaning) mediates the associations that personality traits have with subjective well-being (i.e., satisfaction with life, positive affect, and negative affect). Our results indicated that an orientation to meaning in life partially mediated the relationship between extraversion and life satisfaction. In addition, all three orientations to happiness (i.e., pleasure, engagement, and meaning) partially mediated the relationship between extraversion and positive affect. Discussion focuses on the implications of these results for understanding the connection between personality traits and subjective well-being.

**Keywords** Subjective well-being · Positive psychology · Happiness · Personality · Mediation

## 1 Introduction

The true path to happiness has been contemplated for at least two thousand years with speculations being offered by important historical figures such as Aristotle who argued in his Nichomachean Ethics that happiness is "…the End at which all actions aim."

N. C. Pollock (✉) · A. E. Noser · C. J. Holden · V. Zeigler-Hill
Department of Psychology, Oakland University, 212A Pryale Hall, Rochester, MI 48309, USA
e-mail: ncpolloc@oakland.edu

V. Zeigler-Hill
e-mail: zeiglerh@oakland.edu

(Aristotle, trans. 1934, Book I, Section VII; see Kolak and Thomson, 2006). Regardless of whether happiness is the ultimate end to every mean, research continues to support the notion that happiness is, at the very least, an important aspect of human life. For example, researchers have found that individuals report thinking about happiness and life satisfaction quite frequently (at least once per day) and that they rate their happiness and life satisfaction as being very important (Diener et al. 1995, 1998; Freedman 1978). Findings such as these have led researchers to explore the many facets of human flourishing. These efforts have led to an operational definition of happiness (which is commonly referred to as *subjective well-being*) that is characterized as the extent to which people evaluate their lives in a positive manner (Diener 2009). These subjective evaluations include general cognitive judgments about the quality of one's life as well as salient affective reactions. Thus, subjective well-being can be measured via three distinct yet related constructs: life satisfaction, positive affect, and negative affect (Chamberlain 1988; Diener 2009).

The present study investigates what we consider to be one of the most important scientific questions concerning subjective well-being: why do some people experience higher levels of subjective well-being than others? In other words, we are interested in the factors that can explain individual differences in subjective well-being. Researchers have spent several decades attempting to identify such proverbial keys to happiness, and they have found that components of subjective well-being are positively associated with a variety of important life outcomes, including physical health (Cohen et al. 2003), quantity and quality of social relationships (Diener and Seligman 2002; Reis and Gable 2003), goal fulfillment (Emmons 1986), social contact (Wilson 1967), wealth (Larson 1978; Frey and Stutzer 2002), self-esteem (Anderson 1977; Laxer 1964), and longevity (Danner et al. 2001; Diener and Chan 2011). However, one of the difficulties in understanding subjective well-being is in determining the nature of these associations. For example, it is quite possible that social contact causes people to be happy. However, it is also possible that happiness may facilitate social contact or that another factor—such as high self-esteem—may influence both the propensity to engage in social contact and experience happiness. There are many possible explanations that attempt to account for the associations that subjective well-being has with other variables. Of course, some of these potential explanations have received more empirical support than others. One promising avenue for understanding happiness is to focus on its associations with personality traits.

Personality traits have been found to be strongly associated with indicators of subjective well-being (e.g., Brebner et al. 1995; Cheng and Furnham 2003; Diener 2009; Schmutte and Ryff 1997; Steel et al. 2008). In fact, personality traits have been shown to account for more variability in subjective well-being than various combinations of demographic variables such as age, sex, and income (Andrews and Withey 1976; Diener 2009). The research concerning the links between personality traits and subjective well-being has focused a great deal of attention on the Big Five dimensions of personality (i.e., extraversion, neuroticism, agreeableness, conscientiousness, and openness) because this has been the dominant model of personality structure during the past 30 years (see Digman 1990, for a review). These studies have shown that extraversion, agreeableness, and conscientiousness have positive associations with subjective well-being, whereas neuroticism has a negative association with subjective well-being (e.g., Costa and McCrae 1980; Costa et al. 1987; Emmons and Diener 1985; McCrae and Costa 1991; Tkach and Lyubomirsky 2006). In fact, the associations that extraversion and neuroticism have with indicators of subjective well-being—which reflect positive and negative affect—are so strong that it has been argued that extraversion and neuroticism are analogous to positive emotionality (i.e., propensity to experience cheerful, energetic, and enthusiastic affect;

responsiveness to potential rewards; dominance and assertiveness; and engagement in social interactions) and negative emotionality (i.e., tendency to experience sadness, fear, irritability, anger, and increased stress reactivity), respectively (see Klein, in press, for a review).

The Big Five model of personality is still the dominant structural model of personality, but a relatively new model referred to as the HEXACO model of personality (Ashton and Lee 2007, 2009a; Lee and Ashton 2004) has received considerable attention in recent years. The HEXACO is a six factor model of personality that consists of variants of the Big Five dimensions as well as an honesty-humility dimension that captures the degree to which individuals exhibit fairness, sincerity, and modesty. Three dimensions of the HEXACO model (i.e., extraversion, conscientiousness, and openness) are quite similar to their counterparts from the Big Five model (Ashton and Lee 2009b; de Vries 2011). However, emotionality (which is equivalent to "neuroticism" in the Big Five model) and agreeableness reflect slightly rotated versions of their Big Five counterparts (Lee and Ashton 2012). For example, neuroticism within the Big Five model contains anger-related content, but the emotionality dimension of the HEXACO does not contain anger-related content (Lee and Ashton 2006). Rather, the dimension of agreeableness in the HEXACO captures content that is related to experiencing anger which sets it apart from agreeableness in the Big Five model. In addition to capturing aspects of personality beyond those accounted for by the Big Five, the HEXACO model may have advantages that are specific to positive psychology research. For example, extraversion—as measured by the HEX-ACO model—has been found to have especially strong associations with happiness among university students from different countries (e.g., Aghababaei and Arji 2014; MacInnis et al. 2013).

Although the link between certain personality traits (e.g., extraversion, emotionality) and subjective well-being has been clearly established, the reason for this connection remains poorly understood. It has been suggested that the relationship between personality traits and subjective well-being may be instrumental in nature such that personality traits lead individuals to choose certain situations or to experience life in certain ways which, in turn, influences their subjective well-being (McCrae and Costa 1991; Tkach and Lyubomirsky 2006; Strobel et al. 2011). For example, a highly extraverted individual may seek out social engagements that result in higher levels of subjective well-being. If this instrumental view is correct, then identifying potential mediating variables (e.g., cognitive mechanisms) may be a productive strategy for gaining a better understanding of the connections between personality traits and subjective well-being. Tkach and Lyubomirsky (2006) found some support for the instrumental model when they noted that cognitive mechanisms (e.g., states of mind such as "Take life as it is—be content") partially mediated the associations between personality traits and subjective well-being.

The present study sought to further investigate instrumental accounts of the connections between personality traits and subjective well-being by examining the possibility that the cognitive strategies that individuals use to seek happiness may play a role in these associations. Peterson et al. (2005) have suggested three related—yet distinct—cognitive strategies used by individuals in their pursuit of happiness. These strategies are known as *orientations to happiness* and they include: pursuing a life of *pleasure*, pursuing a life of *engagement*, and pursuing a life of *meaning*. The orientation toward pleasure is based on a long history of hedonistic philosophies that emphasize the importance of sensory pleasure for the attainment of a good life (see Peterson et al. 2005, for a review). The orientation toward engagement was derived primarily from the

work of Csikszentmihalyi (1997) concerning *flow* which refers to a psychological state that emerges from highly engaging activities. Flow can be characterized as having intense focus to the point of losing one's sense of self, feelings of euphoria after the activity is over, and a perception that time passed quickly. The orientation to meaning reflects a sense of purpose and belonging to something larger than oneself that can be traced back to Aristotle's Nicomachean Ethics (Aristotle, trans. 1934). These three orientations to happiness are believed to be relatively stable over time and have been shown to have unique associations with various indicators of subjective well-being even when controlling for personality traits (e.g., Peterson et al. 2005, 2007; Vella-Brodrick et al. 2009). For example, Peterson et al. (2005) found that each orientation to happiness predicted life satisfaction. Peterson et al. (2007) found that orientations to happiness were associated with character strengths that were also associated with life satisfaction. Engagement and meaning have also been found to be unique predictors of life satisfaction, positive affect, and negative affect even after controlling for the orientation to pleasure and demographic variables (Vella-Brodrick et al. 2009). These results suggest that meaning and engagement have strong and unique associations with indicators of subjective well-being beyond the obtainment of pleasure.

## 1.1 Overview and Predictions

The goal of the present study was to examine the extent to which orientations to happiness mediate the associations between the HEXACO personality traits and indicators of subjective well-being. In other words, it may be the case that having particular personality characteristics leads individuals to pursue happiness through specific methods (e.g. pursuing meaning in life) which, in turn, influences their levels of subjective well-being. Consistent with previous research, our first set of predictions concerned subjective well-being having positive associations with extraversion, agreeableness, and conscientiousness as well as a negative association with emotionality (e.g., Emmons and Diener 1985; McCrae and Costa 1991). Our second set of predictions concerned the orientations to happiness being associated with subjective well-being (Vella-Brodrick et al. 2009). Our final—and most novel—prediction was that the orientations to happiness would mediate the associations that emerged between personality traits and subjective well-being. The rationale for this prediction is that cognitive mechanisms—such as the orientations to happiness—may be at least partially responsible for the associations that have been observed between personality traits and subjective well-being. That is, we hypothesized that the way individuals think about achieving happiness may provide at least a partial explanation for the connections between personality traits and subjective well-being. In other words, it may be that individuals with high levels of particular personality traits adhere to particular strategies for achieving subjective well-being and that those strategies are more or less effective. For example, it has often been argued that the strong association between extraversion and positive affect may be due to cognitive mechanisms—as captured by orientations to happiness in the present study—that lead individuals with high levels of extraversion to be more responsive to positive stimuli and events than those with lower levels of extraversion (e.g., Rusting and Larsen 1998). To our knowledge, the present study is the first to examine whether orientations to happiness mediate the associations that personality traits have with subjective well-being.

## 2 Methods

### 2.1 Participants and Procedure

Participants were 153 community members from the United States who were recruited using Mechanical Turk (see Buhrmester et al. 2011, for a review of data collection using MTurk). Four participants were excluded from analyses due to missing data. Participants (78 men, 70 women, and one undisclosed) were asked to complete measures of personality traits, orientations to happiness, and subjective well-being—along with other measures that are not relevant to the present study (e.g., self-esteem)—via a secure website. The mean age of the participants was 33.52 years ($SD = 11.47$) and their racial/ethnic composition was 75 % White, 9 % Asian, 9 % Black or African American, 5 % Hispanic, and 2 % Other.

### 2.2 Measures

#### 2.2.1 Personality Traits

The HEXACO-60 (Ashton and Lee 2009b) was used to measure personality traits. The HEXACO-60 is a 60-item instrument that assesses the following six dimensions of personality: Honesty-Humility [10 items; e.g., "I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed" ($\alpha = .81$)], Emotionality [10 items; e.g., "I sometimes can't help worrying about little things" ($\alpha = .82$)], Extraversion [10 items; e.g., "In social situations, I'm usually the one who makes the first move" ($\alpha = .85$)], Agreeableness [10 items; e.g., "I rarely hold a grudge, even against people who have badly wronged me" ($\alpha = .84$)], Conscientiousness [10 items; e.g. "I often push myself very hard when trying to achieve a goal" ($\alpha = .82$)], and Openness to Experience [10 items; e.g., "I would enjoy creating a work of art, such as a novel, a song, or a painting" ($\alpha = .80$)]. Responses were made on scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Previous research has demonstrated the psychometric properties of the HEXACO-60 including its internal consistency and convergent validity with related measures of basic personality features such as those based on the Five-Factor model of personality (e.g., Ashton and Lee 2009b; Lee and Ashton 2013). For example, Ashton and Lee (2009b) found correlations averaging above .40 between the HEXACO-60 and its NEO-FFI counterpart. Further, the HEXACO-60 has been found to have the expected patterns of associations with a wide array of constructs including the Dark Triad of personality (i.e., narcissism, psychopathy, and Machiavellianism; Lee and Ashton 2005), vocational interests (McKay and Tokar, 2012), aggression (Lee and Ashton 2012), and social value orientations (Hilbig et al. 2014).

#### 2.2.2 Orientations to Happiness

The Orientations to Happiness Questionnaire (Peterson et al. 2005) consists of three subscales that capture distinct orientations to happiness: Pleasure [6 items; e.g. "Life is too short to postpone the pleasures it can provide" ($\alpha = .85$)], Engagement [6 items; e.g. "I seek out situations that challenge my skills and abilities" ($\alpha = .62$)], and Meaning [6 items; e.g., "My life serves a higher purpose" ($\alpha = .84$)]. Responses were made on scales ranging from 1 (*not like me at all*) to 5 (*very much like me*). Previous studies have

demonstrated adequate psychometric properties for the Orientations to Happiness Questionnaire (Peterson et al. 2007; Chen et al. 2009; Vella-Brodrick et al. 2009) including internal consistency estimates greater than .72 (e.g., Peterson et al. 2005).

### 2.2.3 Life Satisfaction

The Satisfaction with Life Scale (Diener et al. 1985) was used to capture life satisfaction. This measure consists of 5 items that are averaged to assess overall self-reported life satisfaction [e.g., "I am satisfied with my life" ($\alpha = .92$)]. Responses ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The Satisfaction with Life Scale has demonstrated good internal consistency among internet samples (e.g., internal consistency estimates greater than .84; Howell et al. 2010). The Satisfaction with Life Scale has been shown to correlate with the Subjective Happiness Scale (Lyubomirsky et al. 2005), the Orientations to Happiness Questionnaire (Vella-Brodrick et al. 2009), and several other indicators of subjective well-being (e.g., Diener et al. 1985).

### 2.2.4 Positive and Negative Affect

The Positive and Negative Affect Schedule (PANAS; Watson et al. 1988) was used to measure general Positive Affect [10 items; e.g., "Enthusiastic" ($\alpha = .91$)] and general Negative Affect [10 items; e.g., "Upset" ($\alpha = .94$)]. Responses were made using scales that ranged from 1 (*very slightly to not at all*) to 5 (*extremely*). Previous studies have demonstrated adequate psychometric properties for the PANAS including internal consistency estimates greater than .87 (e.g., Watson et al. 1988).

### 2.3 Data Analytic Approach

Our approach was consistent with an indirect effects model such that the association between personality traits and subjective well-being was believed to be due, at least in part, to the orientations to happiness reported by the participants. Although mediation approaches such as these are often tested using the causal steps method that was proposed by Baron and Kenny (1986), this approach has been criticized for having a number of potential problems (e.g., low statistical power; Preacher and Hayes 2004). These problems have led to the development of other methods to test indirect effects such as a bootstrapping technique (e.g., Hayes 2009; MacKinnon et al. 2004; Preacher and Hayes 2004, 2008; Williams and MacKinnon 2008). Bootstrapping techniques involve the creation of an empirical representation of the population by continuously resampling from the empirical sample in order to mimic the original sampling process. For the current analyses, this resampling process was repeated 5,000 times and the path coefficients were recorded for each of these resamples. The 5,000 sample estimates of the indirect effects were used to generate a 95 % bias corrected confidence interval for the relative indirect effects. The confidence intervals are considered to be statistically significant if they do not contain zero.

We tested our multiple mediation hypotheses using an SPSS macro (Preacher and Hayes 2008) that facilitates estimation of the indirect effect using a bootstrapping technique to obtain confidence intervals. This approach allowed us to assess the extent to which each of the three orientations to happiness mediated the associations that personality traits had with indicators of subjective well-being in the presence of the other potential mediators (Preacher and Hayes 2008). This is important because the three orientations to happiness

were positively correlated with each other and shared similar associations with all of the indicators of subjective well-being and certain personality traits (e.g., extraversion). Using a multiple mediator model to simultaneously analyze the variables allowed us to distinguish the unique mediational capacities of the specific orientations to happiness which may otherwise have been attributed to their overlap (Preacher and Hayes 2008).

## 3 Results

Means, standard deviations, and intercorrelations are displayed in Table 1. Examination of the correlation matrix revealed that the three orientations to happiness (i.e., pleasure, engagement, and meaning) were positively correlated with each other and that each was positively associated with life satisfaction, positive affect, and extraversion. Extraversion, agreeableness, and conscientiousness were positively correlated with life satisfaction and positive affect, but were negatively correlated with negative affect. Emotionality was negatively correlated with life satisfaction and positive affect but positively correlated with negative affect. Three separate multiple mediation analyses were conducted to examine whether specific orientations to happiness mediated the relationships between personality traits and each of our three indicators of subjective well-being (i.e., life satisfaction, positive affect, and negative affect).[1] The mediation model can be found in Fig. 1 and the model statistics can be found in Tables 2, 3, 4.

### 3.1 Life Satisfaction

The total amount of variability in life satisfaction that was explained by the model was $R^2 = .48$. The summary statistics for this model are presented in Table 2. The total effects indicated that extraversion and openness were both significantly associated with life satisfaction such that individuals with high levels of extraversion and openness reported greater life satisfaction. However, openness was not significantly associated with any of the orientations to happiness. In contrast, extraversion was positively associated with meaning, pleasure, and engagement. In turn, meaning was positively associated with life satisfaction

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[1] An alternative model was also analyzed for each outcome variable (see Hayes 2013, for an extended discussion of this process). More specifically, we examined alternative models where personality traits mediated the associations between orientations to happiness and subjective well-being in order to compare the fit of these models with our proposed models. Our results suggested that these alternative models did not fit the data as well as our proposed mediational models (i.e., orientations to happiness mediating the associations between personality traits and subjective well-being) because the confidence intervals for the alternative models were substantially closer to zero or actually included zero. For example, our strongest finding of the association between extraversion and life satisfaction through meaning in life yielded a confidence interval of .12–.41, whereas the strongest alternative model yielded a confidence interval of .05–.25. Furthermore, the magnitude of the effects in the alternative models were, at best, roughly half as strong as the proposed models. For example, the indirect effect of an orientation to meaning on life satisfaction through extraversion was $ab = .14$ as opposed to our proposed model of $ab = .25$ when extraversion was the predictor variable and meaning was the mediator. However, future research could benefit from testing other potential alternatives (e.g. life satisfaction mediating the association between personality and orientations to happiness).

Additionally, the three proposed models were re-examined excluding variables that did not uniquely predict mediator or outcome variables (e.g. Honesty-Humility). These analyses displayed results consistent with the model reported; however, they explained between .03 and .04 less variability in the outcome variables than the models provided. Furthermore, these simpler models over-exaggerate the extent to which any single personality variable accounts for variability in subjective well-being because they do not account for shared variability among the other personality variables.

**Table 1** Intercorrelations and descriptive statistics

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Honesty-humility | – | | | | | | | | | | | |
| 2. Emotionality | .11 | – | | | | | | | | | | |
| 3. Extraversion | -.11 | -.35*** | – | | | | | | | | | |
| 4. Agreeableness | .32*** | -.06 | .33*** | – | | | | | | | | |
| 5. Conscientiousness | .09 | -.11 | .39*** | .20* | – | | | | | | | |
| 6. Openness | .14 | -.08 | .12 | .14 | .29*** | – | | | | | | |
| 7. Pleasure | -.41*** | -.14 | .29*** | -.09 | .01 | .07 | – | | | | | |
| 8. Engagement | -.09 | -.25** | .43*** | .25** | .16 | .17* | .36*** | – | | | | |
| 9. Meaning | .08 | .03 | .61*** | .32*** | .20* | .00 | .32*** | .34*** | – | | | |
| 10. Positive affect | .02 | -.30*** | .60*** | .24** | .43*** | .08 | .34*** | .46*** | .54*** | – | | |
| 11. Negative affect | -.13 | .34*** | -.47*** | -.37*** | -.25** | -.03 | -.10 | -.14 | -.19* | -.31*** | – | |
| 12. Life satisfaction | -.03 | -.18* | .60*** | .30*** | .30*** | -.04 | .26** | .32*** | .59*** | .51*** | -.49*** | – |
| M | 3.33 | 3.14 | 3.07 | 3.25 | 3.78 | 3.64 | 3.02 | 3.01 | 2.87 | 3.04 | 1.64 | 4.12 |
| SD | 0.73 | 0.71 | 0.75 | 0.71 | 0.61 | 0.69 | 0.93 | 0.85 | 0.65 | 0.82 | 0.77 | 1.66 |

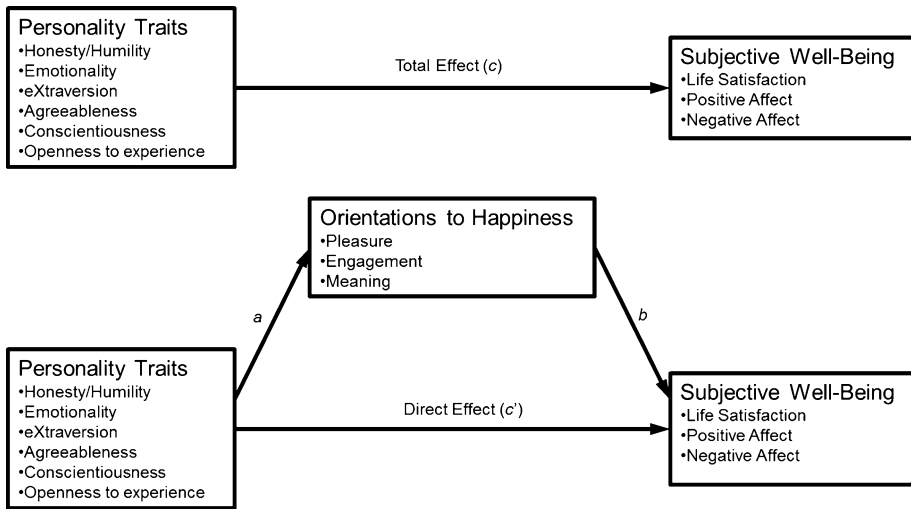* $p < .05$; ** $p < .01$; *** $p < .001$

**Fig. 1** An illustration of our mediational hypotheses including path labels. Specifically, we hypothesized that the relationship between personality traits and subjective well-being is mediated by orientations to happiness. Please note that although all predictors and mediators were entered simultaneously, three separate mediation analyses were conducted (i.e., one for each outcome variable)

such that individuals who reported pursuing meaning reported greater life satisfaction. The direct effect—the association between predictor(s) and outcome(s) when the mediator(s) are included in the model—between extraversion and life satisfaction ($c' = .27$, $p = .006$) was less than the total effect, the association between predictor(s) and outcome(s) when the mediator(s) are not included in the model, ($c = .54$, $p < .001$). This reduction in the direct effect between extraversion and life satisfaction from the total effect, when orientations to happiness were included in the model, suggests that an orientation to meaning partially mediated the relationship between extraversion and life satisfaction. The specific indirect effect of meaning indicated that extraversion had a positive indirect link with life satisfaction through meaning as the 95 % confidence intervals (CI) did not contain zero. Furthermore, the magnitude of the indirect effect was $ab = .25$ [i.e., the amount of change predicted in the outcome variable (life satisfaction) when the predictor variable (extraversion) is held fixed and the mediator variable (orientation to meaning) changes by the amount it would have changed had the predictor variable increased by one unit].

### 3.2 Positive Affect

The total amount of variability in positive affect that was explained by the model was $R^2 = .54$. The summary statistics for this model are presented in Table 3. The total effects indicated that extraversion and conscientiousness were significantly associated with positive affect such that individuals with high levels of extraversion and conscientiousness reported greater positive affect. However, mediation did not occur for conscientiousness because it was not significantly associated with any of the three orientations to happiness. In contrast, extraversion was positively associated with pleasure, engagement, and meaning and, in turn, each orientation to happiness was positively associated with positive

**Table 2** Summary of multiple mediation analysis for HEXACO personality traits and life satisfaction (N = 149; 5000 bootstraps)

| Predictor variable (PV) | Mediating variable (M) | Criterion variable (CV) | Effect of PV on M (a) | Effect of M on CV (b) | Direct effect (c') | Indirect effect (bias corrected intervals) (a)(b): 95 % CI | Total effect (c) |
|---|---|---|---|---|---|---|---|
| Honesty–Humility | Pleasure | Life satisfaction | −.36*** | .08 | −.02 | −.03: −.09 to .03 | .00 |
| | Engagement | | −.10 | −.02 | | .00: −.01 to .03 | |
| | Meaning | | .12 | .36*** | | .04: .00 to .11 | |
| Emotionality | Pleasure | Life satisfaction | .00 | | −.07 | .00: −.02 to .02 | .02 |
| | Engagement | | −.11 | | | .00: −.01 to .03 | |
| | Meaning | | .25*** | | | .09: .03 to .18 | |
| Extraversion | Pleasure | Life satisfaction | .29** | | .27** | .02: −.02 to .09 | .54*** |
| | Engagement | | .34*** | | | .00: −.06 to .05 | |
| | Meaning | | .71*** | | | .25: .12 to .41 | |
| Agreeableness | Pleasure | Life satisfaction | −.06 | | .10 | .00: −.04 to .01 | .13 |
| | Engagement | | .15 | | | .00: −.04 to .02 | |
| | Meaning | | .08 | | | .03: −.02 to .10 | |
| Conscientiousness | Pleasure | Life satisfaction | −.10 | | .14 | −.01: −.05 to .01 | .11 |
| | Engagement | | −.05 | | | .00: −.01 to .03 | |
| | Meaning | | −.05 | | | −.02: −.08 to .03 | |
| Openness | Pleasure | Life satisfaction | .12 | | −.13 | .01: −.01 to .05 | −.15* |
| | Engagement | | −.05 | | | .00: −.03 to .01 | |
| | Meaning | | −.08 | | | −.03: −.09 to .02 | |

\* $p < .05$; \*\* $p < .01$; \*\*\* $p < .001$

affect such that individuals who reported pursing meaning, pleasure, and engagement reported greater positive affect. The direct effect between extraversion and positive affect ($c' = .20$, $p = .03$) was less than the total effect ($c = .47$, $p < .001$). The reduction in the direct effect between extraversion and positive affect when orientations to happiness are included in the model suggests that the three orientations to happiness partially mediated the association as the 95 % CIs for the indirect effects did not contain zero. Furthermore,

**Table 3** Summary of multiple mediation analysis for HEXACO personality traits and positive affect (N = 149; 5,000 bootstraps)

| Predictor variable (PV) | Mediating variable (M) | Criterion variable (CV) | Effect of PV on M (a) | Effect of M on CV (b) | Direct effect (c′) | Indirect effect (bias corrected intervals) (a)(b): 95 % CI | Total effect (c) |
|---|---|---|---|---|---|---|---|
| Honesty–Humility | Pleasure | Positive affect | −.36*** | .18* | .12 | −.06: −.14 to −.01 | .07 |
| | Engagement | | −.10 | .15* | | −.01: −.07 to .00 | |
| | Meaning | | .12 | .25** | | .03: .00 to .09 | |
| Emotionality | Pleasure | Positive affect | .00 | | −.16* | .00: −.04 to .04 | −.12 |
| | Engagement | | −.11 | | | −.02: −.06 to .00 | |
| | Meaning | | .25*** | | | .06: .02 to .14 | |
| Extraversion | Pleasure | Positive affect | .29** | | .20* | .05: .01 to .13 | .47*** |
| | Engagement | | .34*** | | | .05: .00 to .12 | |
| | Meaning | | .71*** | | | .18: .04 to .32 | |
| Agreeableness | Pleasure | Positive affect | −.06 | | −.02 | −.01: −.06 to .02 | .01 |
| | Engagement | | .15 | | | .02: .00 to .07 | |
| | Meaning | | .08 | | | .02: −.01 to .08 | |
| Conscientiousness | Pleasure | Positive affect | −.10 | | .28*** | −.02: −.07 to .01 | .24** |
| | Engagement | | −.05 | | | −.01: −.05 to .02 | |
| | Meaning | | −.05 | | | −.01: −.07 to .02 | |
| Openness | Pleasure | Positive affect | .12 | | −.09 | .02: .00 to .07 | −.07 |
| | Engagement | | −.05 | | | .02: .00 to .07 | |
| | Meaning | | −.08 | | | −.02: −.07 to .01 | |

*p < .05; **p < .01; ***p < .001

the magnitude of each indirect effect was $ab = .05$ for pleasure, $ab = .05$ for engagement, and $ab = .18$ for meaning.

### 3.3 Negative Affect

The total amount of variability in negative affect that was explained by the model was $R^2 = .37$. The summary statistics for this model are presented in Table 4. The total effects indicated that emotionality, extraversion, and agreeableness were each significantly associated with negative affect. However, none of the orientations to happiness were significantly associated with negative affect within our model so mediation was not observed for this indicator of subjective well-being.

**Table 4** Summary of multiple mediation analysis for HEXACO personality traits and negative affect (N = 149; 5,000 bootstraps)

| Predictor variable (PV) | Mediating variable (M) | Criterion variable (CV) | Effect of PV on M (a) | Effect of M on CV (b) | Direct effect (c′) | Indirect effect (bias corrected intervals) (a)(b): 95 % CI | Total effect (c) |
|---|---|---|---|---|---|---|---|
| Honesty–Humility | Pleasure | Negative affect | −.36*** | .16 | .20* | −.06: −.14 to .00 | .13 |
| | Engagement | | −.10 | −.12 | | .01: −.01 to .06 | |
| | Meaning | | .12 | −.19 | | −.02: −.09 to .00 | |
| Emotionality | Pleasure | Negative affect | .00 | | −.19* | .00: −.04 to .03 | −.22** |
| | Engagement | | −.11 | | | .01: −.01 to .06 | |
| | Meaning | | .25*** | | | −.05: −.14 to .00 | |
| Extraversion | Pleasure | Negative affect | .29** | | .45*** | .05: .00 to .13 | .32*** |
| | Engagement | | .34*** | | | −.04: −.12 to .02 | |
| | Meaning | | .71*** | | | −.13: −.30 to .01 | |
| Agreeableness | Pleasure | Negative affect | −.06 | | .25** | −.01: −.06 to .01 | .21** |
| | Engagement | | .15 | | | −.02: −.07 to .01 | |
| | Meaning | | .08 | | | −.02: −.07 to .00 | |
| Conscientiousness | Pleasure | Negative affect | −.10 | | .07 | −.02: −.08 to .01 | .07 |
| | Engagement | | −.05 | | | .01: −.01 to .05 | |
| | Meaning | | −.05 | | | .01: −.01 to .07 | |
| Openness | Pleasure | Negative affect | .12 | | −.11 | −.02: .00 to .07 | −.09 |
| | Engagement | | −.05 | | | −.02: −.07 to .01 | |
| | Meaning | | −.08 | | | .01: −.01 to .06 | |

\* $p < .05$; \*\* $p < .01$; \*\*\* $p < .001$

## 4 Discussion

The purpose of this study was to evaluate the extent to which orientations to happiness mediated the associations that personality traits had with indicators of subjective well-being. Our results support the importance of considering orientations to happiness when examining subjective well-being. Consistent with our predictions, our results indicated that extraversion, agreeableness, and conscientiousness were positively correlated with indicators of subjective well-being, whereas emotionality was negatively associated with subjective well-being. Honesty-humility and openness to experience were not associated with subjective well-being. Furthermore, extraversion was the only personality trait that had consistent unique associations with indicators of subjective well-being. These results are largely consistent with those of previous studies showing that extraversion has especially strong associations with subjective well-being (e.g., Diener and Lucas 1999; Lucas and Fujita 2000; McCrae and Costa 1991; Tkach and Lyubomirsky 2006). Robust associations between extraversion and aspects of subjective well-being—especially positive affect—have emerged in at least 39 different countries (Lucas et al. 2000).

The present results indicated that orientations to happiness partially mediated the associations that extraversion had with life satisfaction and positive affect. More specifically, an orientation to meaning partially mediated the association that extraversion had with life satisfaction, whereas pleasure, engagement, and meaning partially mediated the relationship that extraversion had with positive affect. These results provide partial support

for our hypothesis that orientations to happiness would mediate the association that personality traits had with subjective well-being. Our finding that orientations to happiness mediated the association that extraversion had with life satisfaction and positive affect is consistent with previous suggestions that cognitive mechanisms may lead individuals with higher levels of extraversion to be particularly reactive or sensitive to positive stimuli and events (e.g., Rusting and Larsen 1998). Future research should examine whether the orientations to happiness influence the connections that extraversion has with life satisfaction and positive affect by influencing the behavioral activation system (BAS; Eysenck 1981) or the ratio between the BAS and the behavioral inhibition system (BIS; Gray 1971).

Our results were also consistent with those of past studies that emphasized the importance of extraversion and meaning in life when considering subjective well-being (e.g., Vella-Brodrick et al. 2009). However, it is somewhat surprising that our results were relatively weak for negative affect because past research has shown that an orientation to meaning explained unique variance in negative affect beyond what was explained by the Big Five personality dimensions, demographics, and other orientations to happiness (Vella-Brodrick et al. 2009). This seemingly contradictory finding may be explained by our use of the HEXACO model because it may capture more variability in negative affect than traditional Big Five instruments.

Identifying potential predictors of subjective well-being is important because it may further inform the development of intervention programs designed to heighten subjective well-being along with its associated positive outcomes (e.g., physical health, goal achievement, self-esteem). For example, future researchers may want to consider developing interventions that focus on altering the ways in which individuals seek happiness in their daily lives because of the connections that the present study has shown between orientations to happiness and subjective well-being. One possible intervention may focus on increasing individuals' sense of meaning by addressing how they can develop a greater sense of coherence or purpose in their lives through a number of avenues such as goal pursuit (Klinger 1977) and everyday decision making and action (Maddi 1998). In fact, research investigating the associations between goal fulfillment and subjective well-being appears to be quite promising (e.g., Sheldon et al. 2002).

Our results offer some support for instrumental theories of the connection between personality traits and subjective well-being. However, there are a number of other views concerning the link between personality traits and subjective well-being that must be considered. One prominent alternative is that temperament may explain the link between personality traits and subjective well-being (Elliot and Thrash 2002; Gray 1971). The temperament perspective argues that the connection between personality traits and subjective well-being reflects the existence of two cognitive systems that distinguish between motivations that are directed by either positive or negative stimuli. According to this perspective, personality traits yield more or less sensitivity to positive or negative stimuli which has direct implications for outcomes such as subjective well-being. In other words, extraverts may be more motivated to pursue positive stimuli than to avoid negative stimuli, which may be a better strategy for accruing subjective well-being.

Although the present study had a number of strengths (e.g., community sample, comprehensive model of personality), there are also a number of potential limitations. One limitation is that our underlying process model was based on the idea that personality traits influence the adherence to specific orientations to happiness which, in turn, may exert influence on subjective well-being. Although our results are consistent with such a model, it is important to note that causality cannot be determined due to the cross-sectional nature of our data. For example, it is possible that the direction of causality may be reversed such

that the orientations to happiness may actually influence the development of basic personality traits (e.g., a focus on an orientation toward pleasure may heighten an individual's level of extraversion). It is also possible that a reciprocal relationship exists between personality traits and the orientations to happiness or that both personality traits and orientations to happiness may develop as a result of another factor such as life history speed (Figueredo et al. 2006). Further, Maxwell and Cole (2007) have argued that mediation analyses may produce biased and misleading results when conducted with cross-sectional data rather than longitudinal data (see also Maxwell et al. 2011). We have attempted to address some of the concerns that stem from the use of mediation analyses with cross-sectional data by testing alternative models (see footnote 1), but this approach simply cannot replace actually observing these processes unfold over time. As a result, it is important that future studies attempt to clarify the nature of the present associations by implementing longitudinal designs that will allow for a clearer determination of mediational processes.

A second potential limitation of the present study is that we recruited participants using MTurk and they completed the questionnaires via a secure website. As a result of this data collection approach, the present study lacked the same control that would have been offered by having participants complete the questionnaires in the laboratory (e.g., participants may have completed the questionnaires in noisy or otherwise distracting environments; Buhrmester et al. 2011). However, data obtained via MTurk has been found to be as valid and reliable as data obtained through traditional methods (e.g., undergraduate samples in the laboratory; Buhrmester et al. 2011; Rand 2012) Furthermore, this limitation may have been offset by the fact that community samples offer greater diversity in age and life experiences than typical undergraduate samples. This diversity provides valuable information about the connections between personality traits, orientations to happiness, and subjective well-being for a relatively diverse sample of participants. A third limitation is that we relied exclusively on self-report measures which prevent us from ruling out the possibility that our results were influenced by response distortions (e.g., socially desirable responding). Therefore, the present results are subject to self-presentation bias and the reported associations may be somewhat inflated due to shared method variance. A fourth limitation is that the sample size was relatively small. Although, our sample size is comparable to previous studies that analyzed similar mediation analyses (e.g., Turner et al. 2008). Additionally, Fritz and MacKinnon (2007) suggested that sample sizes for simple mediation analyses involving bias-corrected bootstrapping techniques should range from 34 to 462 participants depending on the expected effect size if one is to achieve a power of 0.8. Finally, our sample is limited to community members from the United States which limits the generalizability of these results. Future researchers may want to consider using larger samples from a wide array of countries to gain a better understanding of the cultural invariance of these associations.

The present study has provided support for the notion that certain cognitive mechanisms (i.e., orientations to happiness) may provide a partial explanation for the associations that extraversion has with life satisfaction and positive affect. That is, individuals who are relatively extraverted may report higher levels of life satisfaction and positive affect because they endorse specific strategies for increasing their happiness (i.e., focusing on meaning, pleasure, and engagement). In conclusion, the present study supports the instrumental theory of the effect of personality on subjective well-being, and provides preliminary support for orientations to happiness as mediating mechanisms. However, our correlational and cross-sectional methodology hinder our ability to make causal inferences.

Therefore, future studies should replicate the proposed model by implementing longitudinal research designs (e.g., Maxwell and Cole 2007).

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