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## Five-Factor Model of Personality and Job Satisfaction: A Meta-Analysis

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### ABSTRACT

This study reports results of a meta-analysis linking traits from the 5-factor model of personality to overall job satisfaction. Using the model as an organizing framework, 334 correlations from 163 independent samples were classified according to the model. The estimated true score correlations with job satisfaction were  $-.29$  for Neuroticism,  $.25$  for Extraversion,  $.02$  for Openness to Experience,  $.17$  for Agreeableness, and  $.26$  for Conscientiousness. Results further indicated that only the relations of Neuroticism and Extraversion with job satisfaction generalized across studies. As a set, the Big Five traits had a multiple correlation of  $.41$  with job satisfaction, indicating support for the validity of the dispositional source of job satisfaction when traits are organized according to the 5-factor model.

Research on the dispositional source of job satisfaction has had a spotty history in job satisfaction research. The personological basis of job satisfaction was considered in the earliest treatments of job satisfaction. Hoppock (1935), for example, noted a strong correlation between workers' emotional adjustment and their levels of job satisfaction. Similarly, Fisher and Hanna (1931) concluded that a large part of dissatisfaction resulted from emotional maladjustment. With some noteworthy exceptions (P. C. Smith, 1955; Weitz, 1952), these early considerations of the dispositional source of job satisfaction lay dormant until the 1980s, when a series of provocative studies (Arvey, Bouchard, Segal, & Abraham, 1989; Staw, Bell, & Clausen, 1986; Staw & Ross, 1985) led to renewed interest in the relationship. In the past 15 years, an expanding literature has accumulated, giving general support to the argument that job satisfaction is, in part, dispositionally based (House, Shane, & Herold, 1996). Despite this widespread acceptance, a broad array of traits has been investigated, and there has been little integration in the literature. As Spector (1997) noted, "Although many traits have been shown to correlate significantly with job satisfaction, most research with personality has done little more than demonstrate relations without offering much theoretical explanation" (p. 51).

One factor that has impeded theoretical explanations of the dispositional source of job satisfaction is the lack of a framework describing the structure and nature of personality. Thousands of traits have been invented in the history of personality research, and scores of traits have been studied in relation to

job satisfaction. As Arvey, Carter, and Buerkley (1991) commented, "There is confusion regarding which person variables should be examined. A formidable array of person variables have been discussed as possible determinants of job satisfaction in the research literature" (p. 377). When specific traits have been selected for inclusion in studies of employee attitudes, it generally has been in a piecemeal fashion. Advances in personality research, however, provide the potential for assimilation and integration.

One typology that has been in this research literature is the positive affectivity (PA)-negative affectivity (NA) taxonomy of affective temperament (D. Watson, 2000). Research by Watson, Tellegen, and colleagues suggests that affective disposition is composed of two facets: PA and NA. High-PA individuals are predisposed to experience positive emotionality (e.g., joy, excitement, enthusiasm), whereas high-NA individuals are predisposed to experience negative emotions (e.g., guilt, anger, fear; D. Watson, Clark, & Tellegen, 1988). In a meta-analysis of the relation of affectivity to job satisfaction, Connolly and Viswesvaran (2000) reported true score correlations of PA and NA with job satisfaction of .49 ( $k = 15$ ) and  $-.33$  ( $k = 27$ ), respectively.

Although the PA-NA typology has proven to be quite useful in investigating the dispositional source of job satisfaction, several limitations exist. First, given the higher correlations of PA with job satisfaction, it is surprising that more research has been focused on NA, in many cases to the exclusion of PA (e.g., Levin & Stokes, 1989; Necowitz & Roznowski, 1994). Second, the issue of the independence of PA and NA continues to be debated in the literature (Russell & Carroll, 1999a, 1999b; D. Watson & Tellegen, 1999). Some argue that it is inappropriate to treat PA and NA as separate concepts: that the traits represent opposite ends of single bipolar construct or that a circumplex is required to take the relationships among the concepts into account (Carroll, Yik, Russell, & Barrett, 1999). Others suggest that PA-NA may assess, at least in part, current levels of happiness, affect experienced, or life satisfaction (Judge & Locke, 1993). Finally, the PA-NA taxonomy includes only two traits. Other traits may exist that are theoretically and empirically relevant to job satisfaction.

Within the last 20 years, consensus has emerged that a five-factor model of personality, often termed the Big Five (Goldberg, 1990), can be used to describe the most salient aspects of personality. The five-factor structure has generalized across measures, cultures, and sources of ratings (McCrae & John, 1992). Although the five-factor model has been researched in many areas of industrial-organizational psychology, most notably with respect to job performance (Barrick & Mount, 1991), the relationship of the five-factor model to job satisfaction is much less studied. A number of studies have investigated relations between an isolated facet of the five-factor model (especially Neuroticism) and job satisfaction. However, there is a virtual dearth of research that has linked the complete taxonomy to job satisfaction. Furthermore, unlike job performance, where more than a half-dozen meta-analyses have been conducted using the Big Five framework, we are aware of no prior meta-analysis of the relationship of the Big Five traits to job satisfaction. This is unfortunate because the five-factor model may provide needed integration to this literature.

Accordingly, the purpose of this study is to investigate the relationship between the five-factor model of personality and job satisfaction. In conducting a meta-analysis of the relationship between the Big Five traits and job satisfaction, we use the Barrick and Mount (1991) meta-analysis of the relationship of the Big Five traits to job performance to guide our investigation. Before describing the meta-analysis, we discuss potential linkages between the Big Five traits and job satisfaction.

## Relationships of the Big Five Traits With Job Satisfaction

### Neuroticism

Because of their essentially negative nature, neurotic individuals experience more negative life events than other individuals (Magnus, Diener, Fujita, & Pavot, 1993) in part, because they select themselves into situations that foster negative affect (Emmons, Diener, & Larsen, 1985). To the extent that such situations occur on or with respect to the job, they would lead to diminished levels of job satisfaction. Neuroticism has been described as the primary source of NA, and the link between NA and job satisfaction was documented in Connolly and Viswesvaran's (2000) meta-analysis.

### Extraversion

Whereas Neuroticism is related to the experience of negative life events, extraverts are predisposed to experience positive emotions (Costa & McCrae, 1992), and positive emotionality likely generalizes to job satisfaction, as demonstrated by Connolly and Viswesvaran's (2000) meta-analysis of PA-job satisfaction relationships. Evidence also indicates that extraverts have more friends and spend more time in social situations than do introverts and, because of their social facility, are likely to find interpersonal interactions (such as those that occur at work) more rewarding (D. Watson & Clark, 1997).

### Openness to Experience

Openness to Experience is related to scientific and artistic creativity (Feist, 1998), divergent thinking, low religiosity, and political liberalism (see McCrae, 1996, for a review). None of these psychological states seem to be closely related to job satisfaction. Furthermore, DeNeve and Cooper (1998) noted that "Openness to Experience is a 'double-edged sword' that predisposes individuals to feel both the good and the bad more deeply" (p. 199), rendering its directional influence on affective reactions like subjective well-being or job satisfaction unclear.

### Agreeableness

McCrae and Costa (1991) argued that Agreeableness should be related to happiness because agreeable individuals have greater motivation to achieve interpersonal intimacy, which should lead to greater levels of well-being. Indeed, they found that Agreeableness was positively related to life satisfaction, although at a relatively low level (mean  $r = .16$ ). Assuming these same communal motivations exist on the job, then the same process should operate with respect to job satisfaction. Organ and Lingl (1995) apparently agreed, commenting that Agreeableness "involves getting along with others in pleasant, satisfying relationships" (p. 340).

### Conscientiousness

Organ and Lingl (1995) argued that Conscientiousness should be related to job satisfaction because it represents a general work-involvement tendency and thus leads to a greater likelihood of obtaining satisfying work rewards, both formal (e.g., pay, promotions) and informal (e.g., recognition, respect, feelings of personal accomplishment). Indirectly, the subjective well-being literature also suggests a positive relationship between Conscientiousness and job satisfaction (DeNeve & Cooper, 1998).

## Moderators of the Personality-Job Satisfaction Relationship

Although there is good reason to believe that four of the Big Five traits are related to job satisfaction across studies (the exception being Openness), several possible moderators of the relationship exist. First, because the personality-job satisfaction relationship might be stronger in cross-sectional studies, we investigated whether the relationship varied according to cross-sectional versus longitudinal research designs. Second, with few exceptions (e.g., Eysenck's measures of Neuroticism and Extraversion; Eysenck & Eysenck, 1968), there were no direct measures of the Big Five traits before the revision of the NEO Personality Inventory (Costa & McCrae, 1992). Accordingly, we analyzed whether the personality-job satisfaction correlation varied depending on whether a direct or indirect measure (using Barrick & Mount's, 1991, coding scheme; see Method section) of the Big Five traits was used. Finally, because the nature of job satisfaction measures has been argued to affect their relationships with other variables (Brief & Roberson, 1989), on an exploratory basis, we also estimated the magnitude of the personality-job satisfaction correlation by job satisfaction measure.

## Method

### Rules for Inclusion in the Meta-Analysis

To identify all possible studies of the relationship between the Big Five traits and job satisfaction, we searched the PsycINFO database (1887—2000) for studies (articles, book chapters, dissertations, and unpublished reports) that referenced personality and job satisfaction. In addition to searching for keywords such as personality, Big Five, Agreeableness, Conscientiousness, Extraversion, Openness to Experience, and Neuroticism, we searched for a list of additional traits and measures that were included in Barrick and Mount's (1991) review. These efforts resulted in the identification of 1,277 abstracts (including doctoral dissertations). Of these 1,277 abstracts, 737 were obtained by searching for the keywords "personality and job satisfaction." An additional 540 records were obtained by using names of personality inventories, common specific traits, and the Big Five traits in combination with job satisfaction. In reviewing these abstracts, we eliminated most because (a) they did not appear to measure any discernible personality trait, (b) they assessed a trait that was not classifiable in terms of the five-factor model, or (c) it was clear that they did not report data (e.g., as was the case with most book chapters). We also used several raw data sets that were available to the authors.

For the remaining 430 journal articles and doctoral dissertations, we examined each study to determine whether it contained the necessary information. Eighty-two articles and 53 doctoral dissertations met these criteria. Several studies contained multiple independent samples. Thus, in all, 163 independent samples and 334 correlations were included in the analyses. Several exclusionary rules were established. Reasons for excluding studies at this level fell into several categories. First, many studies failed to report the data necessary to obtain a correlation (e.g., studies that reported percentages or proportions or means with no standard deviations, studies that provided only a narrative summary of the results or reported other measures of association that could not be converted to correlations; e.g., analysis of variance results). Second, we excluded studies that included traits that did not fall within Barrick and Mount's (1991) classification of existing measures into the Big Five traits. Specifically, we excluded studies wherein the personality measure was a combination of more than one trait or could not clearly be identified as a personality trait subsumed within the five-factor model. Thus, such traits as field

dependence, Machiavellianism, Type A, or typologies such as the Myers-Briggs Type Indicator (MBTI) types were not included (studies that reported individual MBTI traits, e.g., I/E, rather than types, e.g., ISTP, were included). Similarly, traits such as hostility or impulsivity that have been treated inconsistently by Big Five researchers also were excluded.

Personality measures were classified according to the coding procedure developed and used by Barrick and Mount (1991). Specifically, in their meta-analysis, they classified personality measures based on an examination of the measures and decisions made by six expert judges (see pp. 8–9 of Barrick & Mount, 1991, for a detailed description of the classification procedures). For example, the Dominance and Sociability scales from the California Psychological Inventory (see Gough, 1988) were classified by the experts as measures of Extraversion, and the Warm and Suspicious (reverse-scored) scales from the 16 P-F were classified as measures of Agreeableness. We followed their classification closely, with the following exceptions: (a) Obviously, direct measures of the Big Five traits, such as those using the NEO Personality Inventory (Costa & McCrae, 1992) or other direct measures of the Big Five traits, were included; (b) two studies using measures of dispositional optimism were included because research suggests such measures assess Neuroticism (T. W. Smith, Pope, Rhodewalt, & Poulton, 1989); (c) four studies using measures of trait anxiety were included because, again, research indicates that these measures assess Neuroticism (Zuckerman, Joireman, Kraft, & Kuhlman, 1999); (d) three studies were included because the traits assessed appeared to closely correspond to Openness: rigidity (rigid is an adjective descriptor of low openness; Digman, 1989, p. 202), flexibility (measures of flexibility correlate significantly with Openness to Experience; Costa & McCrae, 1992, p. 47), and adaptation-innovation (adaptive [Digman, 1989, p. 203] and innovative [Goldberg, 1992, p. 35] are trait markers of Openness to Experience).<sup>2</sup>

In terms of job satisfaction, consistent with the recommendations of meta-analytic researchers (Matt & Cook, 1994), we defined the population to which we wished to generalize a priori as consisting of normal employed adults. Accordingly, satisfaction in primary studies needed to be measured at the individual (as opposed to group) level, and satisfaction needed to occur in a natural job setting. Thus, consistent with Barrick and Mount (1991), studies involving military or laboratory participants were excluded. Satisfaction needed to be assessed with global or overall measures (general perceptions of one's job). If satisfaction was measured with reference to specific facets of the job situation (as is the case with the Job Descriptive Index; P. C. Smith, Kendall, & Hulin, 1969), we computed an equally weighted composite of overall satisfaction using the Spearman-Brown prophecy formula (Hunter & Schmidt, 1990).

#### Meta-Analytic Procedures

We used the meta-analytic procedures of Hunter and Schmidt (1990) to correct observed correlations for sampling error and unreliability in measures of personality and job satisfaction. Correlations were corrected individually. When authors of original studies reported an overall internal consistency reliability for personality or job satisfaction, we used this value to correct the observed correlation for attenuation. When reliabilities for personality or job satisfaction measures were not reported, we used the mean reliability for job satisfaction or the relevant Big Five trait for those studies that did report a reliability estimate.<sup>3</sup> Finally, three original studies used single-item measures of job satisfaction; consequently, no internal consistency reliabilities were reported. In these cases, we used meta-

analytically derived estimates of the reliability of single-item measures of job satisfaction (Wanous, Reichers, & Hudy, 1997). Hence, we assumed a reliability of .68 for single-item satisfaction scales.

In addition to reporting estimates of the mean true score correlations, it is also important in meta-analysis to describe variability in the correlations. Accordingly, we report 80% credibility intervals and 90% confidence intervals around the estimated population correlations. Although some meta-analyses report only confidence intervals (e.g., Ernst Kossek & Ozeki, 1998) whereas others report only credibility intervals (e.g., Vinchur, Schippmann, Switzer, & Roth, 1998), it is important to report both because each tells us different things about the nature of the correlations. Confidence intervals provide an estimate of the variability around the estimated mean correlation; a 90% confidence interval excluding zero indicates that we can be 95% confident that the average true correlation is nonzero (5% of average correlations would lie beyond the upper limit of the distribution). Credibility intervals provide an estimate of the variability of individual correlations across studies; an 80% credibility interval excluding zero indicates that 90% of the individual correlations in the meta-analysis excluded zero (for positive correlations, 10% are zero or less and 10% lie at or beyond the upper bound of the interval). Thus, confidence intervals estimate variability in the mean correlation, whereas credibility intervals estimate variability in the individual correlations across the studies.

The moderators were determined by examining the articles and coding the necessary information. For most of the moderators, this information was easily obtained (e.g., longitudinal vs. cross-sectional design). In terms of measures, most articles reported the measure of personality and job satisfaction. Thirty-eight percent of correlations involved a "direct" (explicitly labeled) measure of the Big Five traits. This percentage varied across the traits, from 52% direct measures for Extraversion to 20% direct measures for Conscientiousness. This is to be expected because no direct measures of Openness, Agreeableness, and Conscientiousness existed before the revised NEO Personality Inventory (Costa & McCrae, 1992), which is why Barrick and Mount (1991) included only indirect measures in their meta-analysis and why we followed their coding scheme. Measures of job satisfaction were classified into the following categories: the Brayfield and Rothe (1951) measure (17%), the Hoppock (1935) Job Satisfaction Blank (8%), the Job Descriptive Index (P. C. Smith et al., 1969) (13%), Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967) (17%), other validated measures (21%), and ad hoc (previously unvalidated) measures (24%).

## Results

Results of the meta-analyses relating the Big Five traits to job satisfaction are provided in Table 1. Neuroticism ( $r = -.29$ ) was the strongest correlate of job satisfaction, followed closely by Conscientiousness ( $r = .26$ ) and Extraversion ( $r = .25$ ). Both the confidence intervals and credibility intervals excluded zero for two traits: Neuroticism and Extraversion. For two other traits—Conscientiousness and Agreeableness—the confidence intervals excluded zero, indicating that we can be confident that these average correlations are distinguishable from zero. However, the 80% credibility interval included zero for these traits, suggesting that the relationship of Conscientiousness and Agreeableness with job satisfaction does not fully generalize across studies (e.g., in about 10% of studies, the relationship between Conscientiousness and job satisfaction was zero or negative). Finally, Openness to Experience showed a weak correlation with job satisfaction ( $r = .02$ ) that was indistinguishable from zero.

Although not reported in Table 1, results also revealed that sampling error and other statistical artifacts explained only a small percentage of the variability in the correlations across studies. Across the five traits, only 16.1% of the variability in the correlations was explained by sampling error and other statistical artifacts (26.5% of the variability was explained using the alternative weighting procedure described later).

In the meta-analyses, the sample sizes varied dramatically, from 5 to 2,900. As Huffcutt, Roth, and McDaniel (1996) noted, a concern with weighting studies by the sample size (N weighting) in meta-analysis is that a handful of studies may dominate the analysis. Accordingly, they developed an alternative weighting procedure that assigned a weight of 1 to a study with a the sample size was 75 or less, 2 if the sample size was between 75 and 200, and 3 if the sample size was 200 or more. We used this weighting procedure to determine whether it would yield a different result from N-weighted analyses. This alternative weighting procedure did change some of the results, although not dramatically. The results were as follows: Neuroticism,  $r = -.31$ ; Extraversion,  $r = .25$ ; Openness to Experience,  $r = .02$ ; Agreeableness,  $r = .19$ ; Conscientiousness,  $r = .28$ . Thus, the Huffcutt et al. (1996) weighting procedure produced similar, although slightly higher, correlations.

As Brief (1998) noted, it is important to investigate the dispositional correlates of job satisfaction in an integrated framework. Accordingly, we sought to determine the multivariate relationship of the set of Big Five traits to job satisfaction. Using Hunter's (1992) regression program, we regressed job satisfaction on the Big Five traits. To form the correlation matrix that served as input into the program, we used the meta-analytic estimates of the relationship between the Big Five traits and job satisfaction in Table 1 and Ones, Viswesvaran, and Reiss's (1996) meta-analytic estimate of the intercorrelations among the Big Five traits. The sample size we used for the regressions was equal to the average sample size of all studies in the analysis (Viswesvaran & Ones, 1995): 280. Given that the N-weighted analysis produced results that were somewhat different from Huffcutt et al.'s (1996) weighting procedure, we also estimated the regression using the meta-analytic results produced from their weighting scheme.

The regression results are provided in Table 2. As is shown, regardless of which weighting method was used, three Big Five traits—Extraversion, Conscientiousness, and Neuroticism—were significant predictors of job satisfaction. Although these three traits were significant regardless of the method of weighting used to estimate the correlations, the results were slightly stronger for the analysis using Huffcutt et al.'s (1996) weighting procedure. Perhaps the most meaningful statistic was the strong and significant multiple correlation ( $R = .41$  in the N-weighted analysis;  $R = .43$  in the analysis using the Huffcutt et al. weighting scheme) between the five-factor model and job satisfaction.

#### Moderators of the Personality-Job Satisfaction Relationship

The moderator results by job satisfaction measure are provided in the Appendix. As is shown in the Appendix, across the traits, personality-job satisfaction correlations tended to be higher for several measures, most notably the Brayfield and Rothe (1951) measure. It also is noteworthy that the personality-job satisfaction correlations generally were not lower for ad hoc, or previously unvalidated, measures of job satisfaction. Table 3 provides the results of the two methodological moderators. Direct and indirect measures of personality did not differ much in their relation with job satisfaction; there was a slight tendency for job satisfaction to correlate more strongly with indirect measures (significant only in the case of Conscientiousness). Similarly, and somewhat surprisingly, personality-job satisfaction

correlations did not differ much by cross-sectional versus longitudinal research designs; only in the case of Agreeableness was the difference significant. 5

## Discussion

Results of this meta-analytic review suggest that the five-factor model is a fruitful basis for examining the dispositional source of job satisfaction. In particular, the traits of Neuroticism, Extraversion, and Conscientiousness displayed moderate correlations with job satisfaction. We are aware of no published primary studies focusing on the relationship of the five-factor model to job attitudes, much less a meta-analytic review of the relationship of the five-factor model to job satisfaction. Thus, these results fill an important void in the literature.

Neuroticism emerged as the strongest and most consistent correlate of job satisfaction. It also is the Big Five trait that has been studied most often in relation to job satisfaction. The validity of Neuroticism came as no surprise to us. We also were not surprised that Extraversion displayed nonzero relationships with job satisfaction across studies. Emotional stability (low neuroticism) and Extraversion are key aspects of the "happy personality" (DeNeve & Cooper, 1998); one would expect that the factors that cause emotionally stable and extraverted individuals to be happy in life would also lead them to be happy in their jobs. As Tokar, Fischer, and Subich (1998) noted in their qualitative review, "Greater job satisfaction is related to lower neuroticism and its variants, as well as to higher extraversion and related traits" (p. 144). Our findings provide quantified support to this conclusion.

Although the positive effects of Conscientiousness in terms of job performance have been clearly demonstrated (Barrick & Mount, 1991), the potential positive effects of conscientiousness in terms of job satisfaction have been virtually ignored in the literature (see Organ & Lingl, 1995). Our results suggest that this is an oversight. Of the Big Five traits, Conscientiousness displayed the second strongest correlation with job satisfaction. However, it is important to note that the 80% credibility interval for Conscientiousness (just) included zero. Of the 79 Conscientiousness correlations, 9 were negative, although it should be noted that 7 of these 9 correlations ranged from  $-.12$  to  $-.02$ . Given this, and that the average sample size for these nine correlations was relatively small (median of 60), sampling error may explain these results. 6 Furthermore, the average correlation for Conscientiousness was distinguishable from zero, as was the effect in the regression analyses.

Finally, the other two traits—Agreeableness and Openness to Experience—displayed relatively weak correlations with job satisfaction. Although the mean Agreeableness correlation was nonzero, the correlations were highly variable across studies; more than one of five Agreeableness correlations were negative, and a roughly equal number were between  $.00$  and  $.10$ . Openness to Experience displayed a small and highly variable correlation with job satisfaction. Indeed, 24 of the Openness to Experience correlations were negative and 26 were positive.

Given the obvious connections between job and life satisfaction (Spector, 1997), it is worthwhile to compare our findings with DeNeve and Cooper's (1998) meta-analytic findings regarding the correlations between the Big Five traits and life satisfaction (see their Table 7, p. 210). Accordingly, we took their findings and corrected them for measurement error. 7 Results of this comparison are provided in Figure 1. As Figure 1, the results are quite similar. Indeed, the rank-order correlation is perfect (Pearson  $r = .94$ ). The only area of divergence is with respect to Openness to Experience which correlates more strongly with life satisfaction than job satisfaction. It is unclear why this would be the



case, although we note that in DeNeve and Cooper's meta-analysis, Openness to Experience displayed a weaker correlation with happiness (average uncorrected  $r = .06$ ) compared with life satisfaction (average uncorrected  $r = .14$ ). In general, however, the results are quite similar, suggesting that the cognitive, affective, and behavioral factors that lead to personality-job satisfaction relations may be similar to those that lead to personality-life satisfaction relations. Given the strength of the relation between job and life satisfaction (Tait, Padgett, & Baldwin, 1989), the parallelism in the results makes sense.

The moderator analyses, especially those by measure of job satisfaction, did reveal variability in personality-job satisfaction correlations. However, most of the moderators did not follow expectations or did not reveal significant differences. In general, the moderator results do not appear to undermine the validity in the personality-satisfaction correlations across studies. One potential moderator we were not able to explore is whether personality-job satisfaction correlations varied by job satisfaction facet. Too few studies reported facet correlations to make such an analysis practicable here. Future research investigating personality-job satisfaction relations by facet might reveal interesting insights and show that the traits display differential associations with job satisfaction facets. For example, following the principle of correspondence (Ajzen & Fishbein, 1977), it may be that traits narrower than the Big Five better predict job satisfaction facets. Such an approach would comport with those who advocate a focus on traits more specific than the Big Five (e.g., Schneider & Hough, 1995) and would provide a more complicated, but perhaps also more complete, understanding of personality-satisfaction relations.

Although the results linking the Big Five traits to job satisfaction are impressive, other frameworks could explain the dispositional source of job satisfaction. For example, Connolly and Viswesvaran's (2000) results indicate that PA and NA display moderately strong correlations with job satisfaction. Indeed, the correlations involving PA are stronger than those reported in this study. However, two factors argue in favor of the five-factor model. First, researchers have suggested that PA represents Extraversion and NA Neuroticism in the five-factor model, thus subsuming PA and NA within the five-factor model (e.g., Brief, 1998; D. Watson & Clark, 1997). Because the five-factor model contains an additional trait that is relevant to job satisfaction (Conscientiousness) than does the PA-NA typology, it may be a more useful framework. At the very least, PA-NA would need to be supplemented with Conscientiousness if the maximum prediction of job satisfaction is to be obtained. Second, PA and NA are quasidispositional in that they are assessments of mood or "affective traits" (D. Watson, 2000, p. 15), are less stable than other dispositional measures (Judge & Bretz, 1993), and may to some degree be confounded with life satisfaction (Judge, Locke, Durham, & Kluger, 1998). Nevertheless, given the empirical validity of both frameworks, and their similarity, future integrative research is needed.

Another framework that may also explain the personological basis of job satisfaction is Judge, Locke, and colleagues' concept of core self-evaluations. According to Judge and colleagues, core self-evaluations is a broad personality trait that is manifested in self-esteem, locus of control, generalized self-efficacy, and (low) neuroticism. Judge et al. (1998) showed that these four traits loaded on the same underlying construct and that the trait was a significant predictor of job satisfaction, even controlling for PA and NA. At the same time, it is not clear how core self-evaluations fits into the five-factor framework. In Judge et al.'s (1998) framework, Neuroticism is subsumed within the core self-evaluation framework. However, Neuroticism itself is a broad construct and one of the most venerable in psychology. Thus, it is entirely possible that the core self-evaluations traits should be cumulated together, as argued by Judge

et al., but under the concept of Neuroticism rather than core self-evaluations. This is an issue for future research.

Drawing from the tripartite (cognitive, affective, and behavioral) categorization of attitudes (Eagly & Chaiken, 1993), the Big Five traits may influence job satisfaction through each of these processes. Cognitively, these traits may influence how individuals interpret characteristics of their jobs, as is the case when individuals with positive core self-evaluations interpret intrinsic job characteristics more positively, even controlling for actual job complexity (Judge, Bono, & Locke, 2000). Affectively, these traits might influence job satisfaction through their effect on mood (Costa & McCrae, 1980) or mood at work (see Brief, 1998). Finally, behaviorally, employees who are emotionally stable, extraverted, and conscientious may be happier at work because they are more likely to achieve satisfying results at work. Part of this effect may operate through job performance, such that conscientious employees perform better and are more satisfied with their jobs because of the intrinsic and extrinsic rewards that high performance provides. In part, it may operate through situation selection, such that extraverted employees are more likely to spend time in situations that make people happy, such as in social interactions (Magnus et al., 1993). Given the links between personality and job performance (Barrick & Mount, 1991) and personality and job satisfaction presented herein, perhaps the time has come for a framework that takes the linkages among personality, job performance, and job satisfaction into account. Such models may involve more proximal predictors, such as integrity, which is related to the five-factor model (see Sackett & Wanek, 1996).

In summary, results of the current quantitative review indicate that Neuroticism, Extraversion, and Conscientiousness display appreciable correlations with job satisfaction, and that the five-factor model is a fruitful basis to examine the dispositional source of job satisfaction. In view of these results, future studies should attempt to integrate alternative frameworks of the dispositional source of job satisfaction and to model the psychological processes that may explain the relationships of the traits with job satisfaction.

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1

Barrick and Mount (1991) included few direct measures of the Big Five traits because, at that time, few were available. The situation has changed appreciably since then, although still only a minority of the correlations in our study used direct measures of the Big Five traits.

2

Although some scholars have argued that PA and NA can be integrated into the five-factor model, such that PA is synonymous with Extraversion and NA is synonymous with Neuroticism (Brief, 1998; D. Watson, 2000), we did not include PA and NA in our analysis for several reasons. First, although there is evidence supporting Brief's and Watson's assertions regarding PA and NA, direct tests are lacking. Second, because other reviews have discussed these variables extensively, we believe they warrant separate consideration from the Big Five traits included here.

3

The mean reliability for measures of job satisfaction was .83. The mean reliabilities for measures of each of the Big Five traits were as follows: Neuroticism = .82; Extraversion = .72; Openness to Experience = .67; Agreeableness = .66; Conscientiousness = .71.

4

The regression model implicitly assumes that the causal direction of the personality-job satisfaction relationship is from personality to job satisfaction. Given that roughly 50% of the variance in the Big Five traits is inherited (Jang, Livesley, & Vernon, 1996), and that any heritability in job satisfaction is likely due to personality (Judge, 1992), this assumption seems reasonable.

5

On an exploratory basis, we also investigated with the personality-job satisfaction relations varied by the Holland (1985) occupational types. For example, Conscientiousness may be related to job satisfaction most strongly in conventional and realistic occupations (those that are practical and require orderliness and those that require conforming behavior, respectively), Openness may be most related to satisfaction in investigative occupations (those requiring trouble shooting or creation of new knowledge), and Agreeableness and Extraversion may be most related to satisfaction in social occupations. In coding occupations based on the primary occupational type in Holland's (1985) RIASEC typology (only studies based on a single occupation were coded), however, we found limited support for these expected relations. On the one hand, Conscientiousness was strongly related to job satisfaction in Realistic and Conventional jobs. However, the other expected moderating effects were not supported, and some unexpected results were observed. One explanation for these findings is that the primary RIASEC codes, at the study level, are too gross to fully capture vocational type.

6

One of the 16 (6.25%) correlations for studies using direct measures of conscientiousness was negative (and another was zero), whereas 8 of the 63 (12.7%) correlations based on indirect measures of conscientiousness were negative. If the .00 correlation noted previously had been -.01, the proportions would be nearly the same (12.5% vs. 12.7%).

7

As noted earlier, DeNeve and Cooper (1998) did not correct their meta-analytic results for unreliability. As Schmidt and Hunter (1996) indicated, it is critical that estimates be corrected for unreliability if one is to avoid distortion in findings, meta-analytic or otherwise. Accordingly, as in our meta-analysis, we

corrected DeNeve and Cooper's meta-analytic estimates for unreliability in personality and life satisfaction. Reliability of the Big Five traits was estimated using the results from a 2000 meta-analysis (Viswesvaran & Ones, 2000). The average internal consistencies of the Big Five traits in this meta-analysis were as follows: Neuroticism = .78; Extraversion = .78; Openness = .73; Agreeableness = .75; Conscientiousness = .78. To arrive at a reliability for life satisfaction, we searched the PsycINFO literature for articles using what we believe to be the most widely used life satisfaction measure: the Satisfaction With Life Scale (Pavot & Diener, 1993). This search resulted in 32 correlations contained in 27 articles. The average internal consistency reliability, weighted by sample size, was .80. The studies used in this meta-analysis are not listed in this article, but are available on request.

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#### Appendix

#### Personality—Job Satisfaction Correlations by Measure of Job Satisfaction

Big Five trait Index (3)	Brayfield & Rothe measure (1) Minnesota Satisfaction Questionnaire (4)	Hoppock Job Satisfaction Blank (2) Other Previously validated (5)	Job Descriptive Ad hoc measure (6)
Neuroticism	-.36 4,5 -.56	-.30	-.26 1
Extraversion	.37 4,5,6	.33	.24
Openness to Experience	-.01	.02	.06
Agreeableness	.31 2,5,6	.13 1	.22
Conscientiousness	.38 3,5,6	.45	.20 1

Note: Table entries are meta-analytic estimates of the average true score correlation (p) between Big Five traits and job satisfaction, corrected for measurement error. Subscripts indicate significant differences in correlations. Across the cells, the number of correlations ranged from k = 4 (n = 441) to k = 26 (n = 4,959).

Table 1

#### Meta-Analysis of the Relationship of Personality to Job Satisfaction

Average 80% CV 90% CI



Trait	k	N	r	p	SDp	Lower	Upper	Lower	Upper
Neuroticism	92	24,527	-.24	-.29	.16	-.50	-.08	-.33	-.26
Extraversion	75	20,184	.19	.25	.15	.06	.45	.22	.29
Openness to Experience	50	15,196	.01	.02	.21	-.26	.29	-.05	.08
Agreeableness	38	11,856	.13	.17	.16	-.03	.37	.12	.22
Conscientiousness	79	21,719	.20	.26	.22	-.02	.55	.21	.31

Note: k = number of correlations; N = combined sample size; p = estimated true score correlation; SDp = standard deviation of true score correlation; CV = credibility interval; CI = confidence interval.

Table 2

Regression of Job Satisfaction on Big Five Personality Traits

Trait	N-weighted correlations			Huffcutt et al. (1996) weighting		
	$\beta/R$	SE	T	$\beta/R$	SE	T
Neuroticism	-.20	.06	-3.38*	-.21	.06	-3.68*
Extraversion	.21	.06	3.80*	.21	.06	3.80*
Openness to Experience	-.04	.06	0.71	-.04	.06	0.75
Agreeableness	.04	.06	0.61	.05	.06	0.86
Conscientiousness	.20	.06	3.40*	.21	.06	3.67*
Multiple R	.41	.06	7.70*	.43	.06	8.27*

Note:  $\beta$  = standardized regression coefficient; T = T value ( $\beta/SE$ ).

\*  $p < .01$ .

Table 3

Methodological Moderators of the Personality-Job Satisfaction Relationship

Trait	Research design			
	Direct (D)	Indirect (I)	Cross-sectional (CS)	Longitudinal (L)
Neuroticism	-.27	-.31	-.29	-.32
Extraversion	.24	.27	.26	.16
Openness to Experience	.02	.01	.02	-.09

Agreeableness	.14	.21	.18 L	-.23 CS
Conscientiousness	.17 1	.31 D	.27	.18

Note: Table entries are average correlation between Big Five traits and job satisfaction, corrected for measurement error. Subscripts indicate differences in correlations. Across the cells, the number of correlations ranged from k = 2 (n = 221) to k = 87 (n = 23,888).

Figure 1. Comparison of validity of Big Five traits for job satisfaction and life satisfaction. (Life satisfaction correlations are corrected for unreliability based on DeNeve and Cooper's, 1998, uncorrected correlations: [see Footnote 7 for explanation of corrections]. For ease of presentation, Neuroticism is labeled by its opposite pole, Emotional Stability.) Open bars represent job satisfaction; solid bars represent life satisfaction.

Big-Five-trait-graph