

Running Head: TRAIT CONSISTENCY AND THE BIG FIVE

Trait Consistency and the “Big Five”

Andrew English

Richard L. Griffith

Florida Institute of Technology

Paper presented at SIOP 2004

Correspondence concerning this article should be addressed to:

Dr. Richard L. Griffith
Department of Psychology
Florida Institute of Technology
Melbourne, FL 32901
Voice: (321) 674-8872
griffith@fit.edu
Fax: (321) 674-7105

Abstract

An assumption of latent trait theory is stability. However, individuals exhibit personality characteristics that vary across situations. The current study examined the rated consistency of behaviors comprising the Big Five personality traits. Extraversion was rated as the most consistent trait followed by Openness to Experience, Conscientiousness, Agreeableness, and finally Neuroticism.

Trait Consistency and The “Big Five”

The reconsideration of personality measures among personnel specialists is partly due to the wide acceptance of the five-factor model, or the “Big Five” (Costa, 1996). This model assumes that five broad factors account for most of the common variance in virtually all personality traits. The model is widely accepted, and represents the structure of observer’s ratings of personality based on over 75 years of factor analytic research (Goldberg, 1993). Research examining big five measures have provided a wealth of evidence supporting the psychometric properties (Costa & McCrae, 1997; Goldberg, 1992), and validity of the measures for predicting job performance (Hurtz & Donovan, 2000; Barrick & Mount, 1996). While these measures have proven useful in a personnel selection context, researchers have continuously strived to improve the predictive abilities of Big Five measures. The use of personality measures to make selection decisions places a great burden on the construct validity of the resulting scores (Ellingson, Smith & Sackett, 2001).

Research by Schmit, Ryan, Stierwalt, and Powell (1995) suggested that gains in both reliability and validity of Big Five measures may be made by incorporating a specific frame of reference (FOR) into the instruments. One assumption underlying personality measures that the traits assessed are stable, and generalize across situations. Schmit and colleagues assert that this may not be the case. Respondents may adopt a frame of reference that is narrower than the general questions elicit, and thus respond in a situationally specific manner. Research in the area of trait consistency suggests that this pattern of responses may be the rule rather than the exception. Wright and Mischel (1987) state that although some individuals express stable patterns of behavior, these

behaviors are contingent on situational conditions. Adding to the complexity of the trait consistency issue is the notion that stability (or the lack of stability) may not be uniform across constructs. While some constructs remain relatively stable, some may be highly influenced by the environment, or by the frame of reference that the respondent adopts.

The current study examined the consistency of the Big Five constructs. Participants were asked to rate how consistent they were on individual items from the NEO-FFI. Results suggest that Extraversion was rated as the most consistent trait followed by Openness to Experience, Conscientiousness, and then Agreeableness. The scale rated the least consistent was Neuroticism.

The Use of Five Factor Measures

There are several measures of the “Big Five” that are currently available. The most popular are the Hogan Personality Inventory (HPI; Hogan & Hogan, 1995), the Personal Characteristics Inventory (PCI; Barrick & Mount, 1993), Goldberg’s Big Five markers (Goldberg, 1992) and the NEO-PI-R (Costa & McCrae, 1992). Each of these tests measure the “Big Five” in a similar fashion, with some minor differences found in the sub-factors and names of each “Big Five” construct.

The relationships these five factors share with numerous criteria have been examined to shed more light on their meaning. Roccas, Sagiv, Schwartz and Knafo (2002), demonstrated that the different traits related to distinct personal values. In the years following the acceptance of this taxonomy, several researchers have examined the relationship of the “Big Five” personality traits to numerous job performance criteria. Research has shown that personality testing can contribute significant incremental validity over that of cognitive ability and skills (Neuman & Wright, 1999).

Of the five personality traits, Conscientiousness has overall received the greatest attention from personnel researchers. The relationship between Conscientiousness and job performance found by Barrick and Mount (1991), and Tett, Jackson, Rothstein, and Reddon (1994) has been replicated by Hurtz and Donovan (2000).

While the personality trait of Conscientiousness has received the most attention in regards to predicting job performance, other personality traits have been recognized as important predictors of job performance as well. George and Zhou (2001), found significant correlations between Openness to Experience and creative problem solving in the $r=.16 - .22$ range. Tett et al (1991) showed that three other traits had higher validities than Conscientiousness in relation to job performance (Agreeableness, $r=.33$; Openness to Experience, $r=.27$; and Emotional Stability, $r=-.22$). Vinchur et al (1998) has found that Extraversion predicted performance ratings at $r=.28$ and sales at $r= .26$.

Situational Influence on Trait Measurement

Interactional psychology accepts the notion that situations cause different people to behave similarly and similar people to behave differently. This principal is comprised of three basic assumptions (Tett & Gutterman, 2000). The first is that these situational influences on behavior are mediated by how situations are perceived (Mischel, 1973). Second, is that people influence and are influenced by their environment. Third, is that in order for personality traits to be expressed, trait-relevant situations are required (Kenrick & Funder, 1988). The more alike two situations are, the more consistent our behavior will remain across those situations.

Tett and Guterman (2000) found that for three traits, trait-intention relations were higher in more relevant situations. What is important here is the demonstration that trait expression in behavior will depend on the relevance of a situation to a particular trait. These findings make pragmatic sense in that traits will only be expressed in situations that allow for their expression.

While our theories of conceptual links between personality traits and job performance have been advanced beyond simple and single trait-performance criteria relationships, there are issues still plaguing applied researchers. An overlooked issue is that of trait consistency or rather that of trait inconsistency.

Trait Consistency

Our very language encourages us to describe behavior in trait terms. This also makes us very susceptible to making fundamental attribution errors (Ichheiser, 1943) for not only others' behavior but for our own. This means that we often overestimate the influence of traits and underestimate the influence of situational factors.

Behavior we consider to be consistent, whether at work or home, may be more influenced by situational constraints than "true" personality traits. In other words, individuals may often constrain their "true" traits across different situations. Variables unique to a specific setting and social norms may often guide our behavior more than our "true" traits.

An individual must first feel that they have the ability and then the opportunity or choice to behave in a specific manner before they will do so. An extraverted individual may not have the opportunity to display extraverted behaviors in a meeting, in the library or at his desk. Some individuals may only behave in an extraverted manner

among close friends at not at work. In this case, close friends may believe this person is truly extraverted yet coworkers believe this person is truly an introvert. The typical work setting often encompasses many socially appropriate norms or rules for behaviors and employees may often feel that their behavior must align to these norms.

The consistency of traits has often been measured by self/other rating methods. High correlations among identical traits across different raters indicated that the individual's behavior regarding this trait was consistent. In fact, there is a great deal of literature that has accumulated on this very topic (Funder & Colvin, 1988/1991; Funder & Dobroth, 1987; Kenrick & Stringfield, 1980; Lord, 1982; Watson & Clark, 1991). It appears in the literature that while some personality traits demonstrate consistency across raters, others are less consistent across raters. Several studies have demonstrated that personality ratings provided by supervisors often predicted performance better than those provided by the target individual himself. Mount, Barrick and Strauss (1994) found that supervisor ratings accounted for additional variance above and beyond self-ratings for the traits of Conscientiousness, Agreeableness, and Extraversion.

Kenrick and Stringfield (1980) provide an answer for these incongruent ratings between self-reports and peer ratings. They consider the utility of consistency and observability in predicting personality traits. In other words some traits are more consistent across different situations and some traits are more observable across situations, thus providing stronger congruence between self/other ratings. Behaviors that are associated with the trait of Extraversion may be more easily observed and therefore more easily rated. Kenrick and Stringfield (1980), found that the highest correlations between self/peer/and parent ratings of personality were for traits perceived to be the

most consistent (avg. correlation was $r=.61$), and the lowest correlations found were for traits perceived as the least consistent (avg. correlation was $r=.14$).

The findings by Funder and Dobroth (1987), reveal that the more visible a trait is, the more consistent it is judged to be. They suggest that traits are most easily visible when: 1) the behaviors that confirm/disconfirm it are easy to imagine, 2) many occasions allow the behaviors, 3) to establish the trait only a few confirming behaviors are necessary, and 4) the trait appears subjectively easy to judge.

A parent and a supervisor at work both see a given individual in very distinct roles, and each believe they know that individual's "true" personality (Kendrick & Springfield, 1980). The "fundamental attribution error" applies here as we tend to overestimate personal characteristics (like personality traits) and underestimate situational factors in interpreting personality (Ichheiser, 1943). The behavior we interpret as consistent, whether at work or at home, may be more influenced by situational constraints than "true" personality traits. Kenrick, McCreath, Govern, King, and Bordin (1990) discuss the importance of situational constraints on behavior. It can be expected that high constraint settings will not be very appropriate for determining where someone stands on a given trait. Individual differences become less variable as situational constraint increases.

Research examining personality characteristics in twins support the notion of behavioral consistency. Some of the Big Five constructs demonstrate stronger genetic components than others, and this in part may help explain why some traits are more consistent. Constructs with strong genetic influences would likely be more stable, while those influenced by the environment may be more situationally specific. Loehlin (1992)

examined five large twin studies and found that the personality trait with the strongest heritability was Extraversion. He found correlations between MZ twins for Extraversion to be $r=.48$ for males and $r=.53$ for female twins. Across the “Big Five” factors the appreciable effects of genes are highest for Culture (Openness to Experience) and Surgency (Extraversion) and lower for Emotional Stability, Agreeableness, and Conscientiousness respectively.

While research has pointed out the inconsistency of traits across situations, our measures often ask respondents to answer items that are written with no frame-of-reference (Funder & Dobroth, 1987; Bem & Allen, 1974). Without considering the situation or context this item may be difficult to answer for many respondents because the answer depends on the situation or place. If we have decided that the respondents behavior at work is our main concern, we should ask that respondent questions relevant to a work environment. Providing applicants with a specific frame-of-reference to respond to may decrease respondent confusion regarding how to answer the items and increase the predictive validity of our measure (by the mechanism of closely tying our predictors to our criteria).

The main purpose of the current study is to update the literature regarding rated trait consistency utilizing the widely accepted “Big Five” model. Trait consistency has been examined in the past but not with an explicit “Big Five” measure (Bem & Allen, 1974; Kendrick and Stringfield, 1980). Using an early version of the 16PF (Cattell, 1943), respondents were asked to rate the extent that they varied from one situation to another on that specific dimension. The current study followed a similar instructional set given to respondents to collect trait consistency ratings. Given the findings of previous

research, it is reasonable to hypothesize that individuals will view their behavior regarding some traits as more/less consistent than their behavior relevant to other traits.

Hypotheses

Hypothesis 1: The personality traits of Extraversion and Openness to Experience will display significantly greater mean ratings on trait consistency than the traits of Emotional Stability, Agreeableness, and Conscientiousness.

Hypothesis 2: The personality trait of Extraversion will display a significantly greater mean rating on trait consistency than the trait of Openness to Experience.

Methodology

Participant Sample

Data was collected from 256 (142 = male; 114 = female) undergraduate students at a southeastern university. The student ages ranged from 16 – 41 years and the mean age was 20.02 years. As part of the curriculum requirements for the Introduction to Psychology undergraduate course, students are asked to participate in one research experiment per semester.

Measure

NEO-FFI

The NEO-FFI is a shorter validated version of the NEO-PI-R that assesses global information on the Big Five personality traits (Costa & McCrae, 1992). This measure consists of a total of 60-item, with 12 items each assessing the personality traits of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. The 12-items with the strongest (positive or negative) loadings for each factor from the NEO-PI-

R, comprise the NEO-FFI. Internal consistency for the NEO-FFI is .86, .77, .73, .68, and .81 for Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness respectively (Costa & McCrae, 1992).

Procedure

After reading and signing the informed consent form, all students were administered the NEO Personality Five-Factor Inventory (NEO-PI-FFI; Costa & McCrae, 1992). Students were asked to rate all 60-items on their degree of consistency in regards to their behavior. A seven-point Likert rating scale was used with 7 measuring the greatest level of consistency. The lowest boundary of the consistency scale read “I always behave differently (I am never consistent)”, and the highest boundary read “I am always consistent (I never vary)”.

Students were given a written example and reminded that regardless of agreeing or disagreeing with the items, they were to focus on their consistency regarding that behavior. For example, for the Conscientiousness item that reads, “I keep my belongings neat and clean”, if this is true, how consistent are you and if this is false, again how consistently false is this? Trait consistency ratings were computed by aggregating the items into their respective trait scale scores.

Analyses

To analyze Hypotheses 1 and 2, a GLM Repeated Measures procedure was used to provide an analysis of variance when the same measurement (consistency) is made more than one time on each subject.

Results

The sphericity assumption states that the variance of the difference scores in a within-subjects design will be equal across all the groups. If this assumption is violated, there will be an increase in Type I errors. Upon examining Mauchly's Test of Sphericity, this assumption was not violated (Mauchly's $W = .551$). Descriptive statistics for the five NEO-FFI trait consistency ratings are found in Table 1.

Hypothesis 1 and 2 were both supported. Table 2 demonstrates that a main effect was found for rated trait consistency between the 5 traits ($F = 135.075$; $P < .001$). Pairwise comparisons were analyzed to test for significant differences between trait ratings. Mean differences between the trait consistency ratings varied from 1.87 between Openness to Experience and Conscientiousness to 16.15 between Neuroticism and Extraversion (Table 3). Mean differences between all rated traits were significant at $p < .001$, excluding the mean difference between Openness and Conscientiousness (significant at $p < .05$).

A review of Table 1 demonstrates that Extraversion was rated as the most consistent trait ($x = 60.59$), followed by Openness to Experience ($x = 56.66$), Conscientiousness ($x = 54.79$), Agreeableness ($x = 50.83$), and the scale rated the least consistent was Neuroticism ($x = 44.45$).

Discussion

The purpose of this study was to examine trait consistency utilizing a Big Five measure. The results suggest there is likely situationally specific variance in self-ratings of the Big Five constructs, and that this influence may not be uniform across constructs.

When respondents were asked to provide consistency ratings for NEO-FFI scales, Extraversion was rated as the most consistent trait followed by Openness to Experience, Conscientiousness, and then Agreeableness. The scale rated the least consistent was Neuroticism. This study makes a significant contribution by examining the consistency of personality traits utilizing the widely accepted “Big Five” model. Consistency studies in the past have not utilized an explicit “Big Five” measure (Bem & Allen, 1974; Kendrick and Stringfield, 1980).

Given the wide use of these measures the results of the study have important implications. If some traits vary across situations, respondents might have difficulty responding to items measuring these traits because their response in part may be determined by the context in which the item is answered. For less consistent traits, there is a great need to provide a frame-of-reference for those items assessing the trait. If work behaviors are the focus of prediction, then a work FOR should be utilized in item construction and validation. Costa and McCrae (1997) have also suggested utilizing personality inventories that are geared to specific settings. They suggest leaving the items unchanged and rewording the instructions so that respondents describe themselves as they are at school, at work, with their family, with co-workers, and so on. Frame-of-reference measures have shown to produce lower error variances (Robie, Schmit, Ryan, & Zickar, 2000) and greater predictive validity (Schmit, Ryan, Stierwalt & Powell, 1995).

Over 25 years ago Ajzen & Fishbein (1977) highlighted the importance predictor/behavior congruence. Predictive validity is greatly increased by pairing specific predictors to specific criteria. While it is no new assumption to imply that

specific conceptual linkages should be applied to all predictor-criterion relationships, personality psychologists must be reminded of this. Avoiding what Guion and Gottier (1965) coined a “broadside approach”, researchers should adopt an empirically and theoretical driven “construct oriented approach” (Costa & McCrae, 1995). Lord (1982) directs researchers, utilizing personality predictors, to address not only the person but also the situation.

References

- Ajzen, I. & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, *84*, 888-918.
- Barrick, M.R. & Mount, M.K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, *44*, 1-25.
- Barrick, M.R. & Mount, M.K. (1993). Autonomy as a moderator of the relationships between the Big Five personality dimensions and job performance. *Journal of Applied Psychology*, *78*, 111-118.
- Barrick, M.R. & Mount, M.K. (1996). Effects of impression management and self-deception on the predictive validity of personality constructs. *Journal of Applied Psychology*, *81*, 261-272.
- Bem, D.J. & Allen, A. (1974). On predicting some of the people some of the time: The search for cross-situational consistencies in behavior. *Psychological Review*, *81*, 506-520.
- Cattell, R.B. (1943). The description of personality: Basic traits resolved into clusters. *Journal of Abnormal and Social Psychology*, *38*, 476-506.
- Costa, P.T. (1996). Work and Personality: Use of the NEO-PI-R in Industrial/Organizational Psychology. *Applied Psychology: An International Review*, *45*, 225-241.
- Costa, P.T. & McCrae, R.R. (1992). Revised NEO Personality Inventory (NEO PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual. Odessa, FL: Psychological Assessment Resources.

- Costa, P.T. & McCrae, R.R. (1995). Solid ground in the wetlands of personality: A reply to Block. *Psychological Bulletin*, *117*, 216-220.
- Costa P.T. & McCrae, R.R. (1997). Stability and change in personality assessment: The revised NEO Personality Inventory in the year 2000. *Journal of Personality Assessment*, *68*, 86-94.
- Ellingson, J.E., Smith, D.B., & Sackett, P.R. (2001). Investigating the influence of social desirability on personality factor structure. *Journal of Applied Psychology*, *86*, 122-133.
- Funder, D.C. & Colvin, C.R. (1988). Friends and strangers: Acquaintanceship, agreement, and the accuracy of personality judgment. *Journal of Personality and Social Psychology*, *55*, 149-158.
- Funder, D.C. & Colvin, C.R. (1991). Explorations in Behavioral Consistency: Properties of persons, situations, and behaviors. *Journal of Personality and Social Psychology*, *60*, 773-794.
- Funder, D.C. & Dobroth (1987). Differences between traits: Properties associated with interjudge agreement. *Journal of Personality and Social Psychology*, *52*, 409-418.
- George, J.M. & Zhou, J. (2001). When openness to experience and conscientiousness are related to creative behavior: An interactional approach. *Journal of Applied Psychology*, *86*, 513-524.
- Goldberg, L.R. (1992). The development of markers of the big-five factor structure. *Psychological Assessment*, *4*, 26-42.

- Goldberg, L.R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48, 26-34.
- Guion, R.M. & Gottier, R.F. (1965). Validity of personality measures in personnel selection. *Personnel Psychology*, 18, 135-164.
- Hogan, R. & Hogan, J. (1995). Hogan Personality Inventory manual. Tulsa, OK: Hogan Assessment Systems.
- Hurtz, G.M. & Donovan, J.J. (2000). Personality and job performance: The big five revisited. *Journal of Applied Psychology*, 85, 869-879.
- Ichheiser, G. (1943). Misinterpretations of personality in everyday life and the psychologist's frame-of-reference. *Character and Personality*, 12, 145-160.
- Kenrick, D.T. & Funder, D.C. (1988). Profiting from controversy: Lessons from the person-situation debate. *American Psychologist*, 43, 23-34.
- Kenrick, D.T., McCreath, H.E., Govern, J., King, R., & Bordin, J. (1990). Person-environment intersections: Everyday settings and common trait dimensions. *Journal of Personality and Social Psychology*, 4, 685-698.
- Kenrick, D.T. & Stringfield, D.O. (1980). Personality traits and the eye of the beholder: Crossing some traditional philosophical boundaries in the search for consistency in all of the people. *Psychological Review*, 87, 88-104.
- LePine, J.A., Colquitt, J.A., & Erez, A. (2000). Adaptability to changing task contexts: Effects of general cognitive ability, conscientiousness, and openness to experience. *Personnel Psychology*, 53, 561-593.

- Loehlin, J.C. (1992). *Genes and Environment in Personality Development*. Sage Publications; Newbury Park, CA.
- Lord, C.G. (1982). Predicting behavioral consistency from an individual's perception of individual similarities. *Journal of Personality and Social Psychology*, *42*, 1076-1088.
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, *80*, 252-283.
- Mount, M. K., Barrick, M. R., & Strauss, J. P. (1994). Validity of observer ratings of the Big Five personality factors. *Journal of Applied Psychology*, *79*, 272-280.
- Neuman, G.A. & Wright, J. (1999). Team effectiveness: Beyond skills and cognitive ability. *Journal of Applied Psychology*, *84*, 376-389.
- Robie, C., Schmit, M.J., Ryan, A.M. & Zickar, M.J. (2000). Effects of item context specificity on the measurement equivalence of a personality inventory. *Organizational Research Methods*, *3*, 348-365.
- Roccas, S., Sagiv, L., Schwartz, S.H., & Knafo, A. (2002). The big five personality factors and personal values. *Personality and Social Psychology Bulletin*, *28*, 789-801.
- Schmit, M.J. & Ryan, A.M., Stierwalt, S.L. & Powell, A.B. (1995). Frame-of-reference effects on personality scale scores and criterion related validity. *Journal of Applied Psychology*, *80*, 607-620.
- Tett, R.P. & Guterman, H.A. (2000). Situation trait relevance, trait expression, and cross-situational consistency: Testing a principle of trait activation. *Journal of Research in Personality*, *34*, 397-423.

- Tett, R.P., Jackson, D.N. & Rothstein, M. (1991). Personality measures as predictors of job performance. A meta-analytic review. *Personnel Psychology, 44*, 703-742.
- Tett, R.P., Jackson, D.N., Rothstein, M. & Reddon, J.R. (1994). Meta-analysis of personality-job performance relationship: A reply to Ones, Mount, Barrick, and Hunter (1994). *Personnel Psychology, 47*, 157-172.
- Thurstone, L.L. (1934). The vectors of mind. *Psychological Review, 41*, 1-32.
- Vincur, A.J., Schippmann, J.S., Switzer III, F.S. & Roth, P.L. (1998). A meta-analytic review of predictors of job performance for salespeople. *Journal of Applied Psychology, 83*, 586-597.
- Watson, D. & Clark, L.A. (1991). Self- versus peer ratings of specific emotional traits: Evidence of convergent and discriminant validity. *Journal of Personality and Social Psychology, 6*, 927-940.
- Witt, L. A. Burke, L. A., Barrick, M. R., & Mount, M. K. (2002). The interactive effects of conscientiousness and agreeableness on job performance. *Journal of Applied Psychology, 87*, 161-169.
- Wright, C. & Mischel, W. (1987). A conditional approach to dispositional constructs: The local predictability of social behavior. *Journal of Personality and Social Psychology, 53*, 1159-1177.

Appendix A Tables

Table 1.
Descriptive Statistics for NEO-FFI Personality Trait Consistency Ratings

<i>Trait</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
Extraversion	256	41.00	79.00	60.59	6.75
Openness to Experience	256	37.00	76.00	56.66	7.42
Conscientiousness	256	30.00	78.00	54.79	8.66
Agreeableness	256	22.00	73.00	50.83	8.77
Neuroticism	256	16.00	70.00	44.45	9.88

Table 2.
Test of Within-Subjects Effects

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Within Groups	38663.43	4	9665.86	135.08	.000

Table 3.
Pairwise Comparisons

<i>Trait</i>		<i>Mean Difference</i>	<i>Std. Error</i>	<i>Significance</i>
Neuroticism	Extraversion	-16.145*	.830	.000
	Openness	-12.211*	.844	.000
	Agreeableness	-6.379*	.957	.000
	Conscientiousness	-10.344*	.962	.000
Extraversion	Openness	3.934*	.581	.000
	Agreeableness	9.766*	.582	.000
	Conscientiousness	5.801*	.562	.000
Openness	Agreeableness	5.832*	.674	.000
	Conscientiousness	1.867**	.648	.004
Agreeableness	Conscientiousness	-3.965*	.694	.000

Note: * mean difference is significant at the .001 level.

** mean difference is significant at the .05 level.