

LOCATING THE BIG FIVE PERSONALITY FACTORS IN THE RELATE RELATIONSHIP EVALUATION MEASURES¹

THOMAS W. DRAPER AND THOMAS B. HOLMAN

Marriage, Family and Human Development
Brigham Young University

Summary.—Factor analyses of data from 400 students who completed the adjective section of the Relate relationship evaluation and similar descriptors from the measure of the “big five” factors of personality by Digman and Inouye indicated that all of the “big five” measures, surgency, agreeableness, conscientiousness, neuroticism, and openness, can be assessed as part of the Relate assessment.

Relate provides a comprehensive relationship evaluation which has been given to tens of thousands of couples and has proven useful for a decade in assessing couple and individual characteristics (Holman, 2001). It has been used by family life educators, clinicians, therapists, and ministers to help couples highlight areas wherein they are compatible or incompatible and to help mutually committed individuals gain a better insight into their own and each other’s wants, needs, and characteristics. It is one of the main assessments recommended by the American Association of Marriage and Family Therapists.² The development and use of Relate are described by Busby, Holman, and Taniguchi (2001). In addition to its widespread clinical use, the Relate scales have seen some application in scholarly work (Larson, 2000; Holman, 2001).

As the clinical use continues and the scholarly work increases, questions from Relate users have arisen about how the findings with this assessment mesh with the findings from another frequently used measure of individual and relationship characteristics, the big five factors of personality. In the area of personality, Relate uses ratings on 24 adjectives and phrases to produce seven subscales: happy, mature, flexible, organized, calm, extroversion, and kind. However, one of the limiting factors on the scholarly use of Relate is that these seven subscales—by title—do not mesh well with what has become a dominant set of subscales for assessing personality, the “big five” personality scales: surgency, agreeableness, conscientiousness, neuroticism, and openness. (The precise names given to the big five vary somewhat from author to

¹Address enquiries to Thomas W. Draper, Marriage, Family and Human Development, 2102b Joseph F. Smith Building, Brigham Young University, Provo, UT 84602 or e-mail (draper@byu.edu).

²(http://www.aamft.org/families/Consumer_Updates/Marriage_Preparation.asp). Cf. also a sample of Relate, available to interested readers on the internet (<http://Relate.byu.edu>).

author; for example, the last factor, openness, is alternately described as an “aesthetic sense” or “intellectence.”) This older five-factor solution to basic personality is well accepted and frequently used in the social sciences. The big five provide a useful compromise between abstraction and specificity (cf. volumes by John & Srivastava, 1999, and Wiggins, 1996, for comprehensive reviews of various tests and their use). The generalizability, utility, validity, reliability, robustness, and limitations of the big five are well documented (Deniston & Ramanaiah, 1993; Ramanaiah, Byravan, & Nguyen, 1996; Ramanaiah & Sharpe, 1998; Greenwald, 1999; McDonald & Holland, 2002; Ramanaiah, Rielage, & Cheng, 2002). John and Srivastava (1999) report that: (a) the general robustness of the five-factor model seems to hold regardless of whether self-, peer’s, teacher’s, or clinician’s ratings were used. (b) The five-factor model transcends different factor rotation schemes. (c) Similar five-factor solutions appear whether single adjective descriptors, descriptive paragraphs, or Likert-type scales were used to collect the ratings so long as the corpus of descriptors was reasonably comprehensive.

Like *Relate*, the elements of the big five are increasingly the basis for clinical advice and study of couples and their interactions (Wiggins & Trapnell, 1996; Botwin, Buss, & Shackelford, 1997; Bouchard, Lussier, & Sabourin, 1999; Nemechek & Olson, 1999; Watson, Hubbard, & Wiese, 2000; Gattis, Berns, Simpson, & Christensen, 2004; Lavee & Ben-Ari, 2004; Amador, Charles, Tait, & Helm, 2005). Given the widespread use of both *Relate* and the five-factor model in clinical work, their increasing use in scholarly work involving couples, and general similarities in the adjectives used to define personality in both measures, an attempt was made to assess whether the big five personality factors could be reliably extracted from the 24 descriptive adjectives and phrases contained in “Section I: Personal Characteristics” of the *Relate* measure. If the big five factors could be shown to be an equally good solution to the majority of the *Relate* adjectives, as their original theory-derived placements on the *Relate* subscales (Holman, 2001), then studies of couples using either set of measures might be included together in reviews of relationships. This could strengthen understanding of the relationship between couples’ success or failure and personality. Further, clinicians who were familiar with only one or the other of these assessment tools would have a common bridge of understanding and could benefit from information from work using either assessment tool.

Many of the 24 *Relate* descriptors are either identical to or conceptually similar to those used in the big five measure constructed by Digman and Inouye (1986). It was hypothesized that, if the *Relate* descriptors were listed together with a common set of big five descriptors and factor analyzed, the *Relate* adjectives would readily fall into the same factor pattern generated by the big five adjectives with similar factor loadings.

METHOD

Participants

Four hundred undergraduate students at a large private university in the western United States participated. Of the participants, 68% were women. The participants ranged in age from 18 to 32 years ($M=22.3$, $SD=2.2$). Of the group, 85.2% were White, and no other group (Blacks, Asians, Hispanics, Native Americans) contributed more than 4% to the total. All of the subjects had at least some college education.

Materials

Thirty-eight terms which have been used to assess the big five personality traits were taken from the big five measure constructed by Digman and Inouye (1986). The six identical items in the two measures were only listed once (hence 56 terms rather than 62). The 56 adjectives and descriptive phrases are listed on the left of Table 1 below. The 24 Relate items are identified by an asterisk.

Procedure

The participants were asked to rate themselves on Likert-type scales for the 56 adjectives or adjective phrases. Each item had a possible range of 1 to 5. Subjects were asked to rate how often each term or phrase could be used to describe them: never = 1, rarely = 2, sometimes = 3, often = 4, very often = 5.

RESULTS

An exploratory primary components factor analysis with a promax rotation and Kaiser normalization of all 56 adjectives and terms was conducted. The rotation and normalization schemes were simply selected to be consistent with the work of Digman and Inouye (1986) from whom the non-Relate adjectives came. The analysis was constrained to five factors. As can be seen in Table 1, 55 of the 56 terms fell neatly into one or two of the readily identifiable big five factors (loadings $>.30$). Twenty-three of the 24 Relate descriptors fit the big five pattern. Thirteen of the 23 active Relate items loaded on single factors; the other 10 items split their variation between two of the factors. No Relate descriptor had loadings ($>.30$) on more than two big five factors. Statistical comparisons of the Relate items with the big five items showed that both groups were equally likely to have items with split loadings ($\chi^2=0.70$, $p>.50$) and that there was no overall difference in the magnitudes of the main factor loadings for the two groups ($t=.01$, $p>.50$). Between three and 11 Relate adjectives loaded on each of the big five factors.

Overall, the popular five-factor model fits the adjective descriptive terms or phrases in Relate very well. Some of the main anchors of the big five Surgency subscale are the four descriptors of the Relate Extroversion subscale:

TABLE 1
 FACTOR LOADINGS (> .30) FOR 24 PERSONALITY DESCRIPTORS FROM RELATE AND 38 BIG
 FIVE FACTOR PERSONALITY DESCRIPTORS FROM DIGMAN AND INOUE (1986)

Descriptor	Big Five Factor				
	Surgency	Agreeable- ness	Conscien- tiousness	Neuroti- cism	Openness
Adaptable*		43			31
Acts immature under pressure*					
Assertive	46				
Careful Worker			58		
Complains		-40		41	
Concerned			43	43	
Conscientious			52		
Considerate		58	33		
Cooperative*		61	32		
Depressed*		-30		64	
Easygoing*		43			32
Energetic	68				
Fearful*				67	
Feel Hopeless*				55	
Fight With Others*		-59		31	
Flexible*		49			33
Friendly*	45	53			
Gregarious	56				
Happy	42	50			
Imaginative					50
Impulsive			-34		
Irresponsible			-72		
Jealous				44	
Kind*		62			
Knowledgeable			37		
Loving*		57			
Mannerly		41	48		
Messy*			-64		
Neat			69		
Nervous*				64	
Open-minded*					66
Organized*			72		
Original					48
Outgoing*	81				
Outspoken	64				
Perceptive			38		
Persevering			44		
Planful			59		
Quiet*	-74				
Rigid		-48		38	
Rude		-64			
Sad and Blue*		-39		59	

(continued on next page)

TABLE 1 (CONT'D)
 FACTOR LOADINGS (> .30) FOR 24 PERSONALITY DESCRIPTORS FROM RELATE AND 38 BIG
 FIVE FACTOR PERSONALITY DESCRIPTORS FROM DIGMAN AND INOUE (1986)

Descriptor	Big Five Factor				
	Surgency	Agreeable- ness	Conscien- tiousness	Neuroti- cism	Openness
Seclusive	-54				
Self-minimizing	-41			47	
Sensible			46		
Shy*	-73				
Socially Confident	68				
Spiteful		-51		33	
Submissive	-34			30	
Talkative*	70				
Tense*		-30		64	
Touchy				34	
Verbally Fluent	45				36
Worrier*				66	
Careless With Property			-49		
Easily Irritated or Mad*		-64		40	

Note.—Decimal points omitted; $N=400$. Extraction method: principal component analysis; rotation method: promax with Kaiser normalization. *Relate items.

talkative, quiet, shy, and outgoing. The main loadings of the new Conscientiousness scale were simply the two terms of the Relate Organized subscale: organized and messy. The new Openness scale pretty much included loadings for items from the old Flexibility scale: open-minded, flexible, easy going, and adaptable. All of the items in the old Kindness scale loaded strongly on the Agreeableness subscale. It is mostly in the crossloading of some items from the Agreeableness and the Neuroticism subscales that the fit is not precise. But these differences may be more apparent than real since the Neuroticism subscale is varied, and the analysis was constrained to five factors. In the work of Costa and McCrae (1992), the Neuroticism scale is divided into several subscales. The Relate Happiness subscale: sad and blue, feels hopeless, and depressed, is a good approximation for the Neurotic-depressed subscale of Costa and McCrae. After discarding the rejected item, "acts immature under pressure," the remaining two items of the Relate Maturity subscale, fights with others and easily irritated or mad, loaded on the Neurotic-Hostile subscale. Finally, the four items of the Relate Calmness subscale, fearful, tense, nervous, and worrier, loaded on the Neurotic-Anxious subscale.

To investigate further the possibility that the Relate personality descriptors actually define the big five personality scales including three subscales of Neuroticism, two independent and nonoverlapping samples of individuals who had taken Relate were drawn and factor analyzed with the same pro-

max rotation and a Kaiser normalization noted before. In both samples, analyses were constrained to seven factors. In both samples the first seven factors were readily recognizable as the big five factors with the neuroticism factor split into three separate subfactors: Neurotic-Anxiety, Neurotic-Depression, and Neurotic-Hostility. Table 2 presents the data from the two independent samples. The seven factors accounted for 70.7% of the variation

TABLE 2
MEANS, STANDARD DEVIATIONS, AND FACTOR LOADINGS (> .30 AFTER PROMAX ROTATION AND KAISER NORMALIZATION) FOR TWO INDEPENDENT SAMPLES OF INDIVIDUALS WHO COMPLETED SELF-RATINGS ON 23 ADJECTIVE/DESCRIPTOR ITEMS FROM RELATE

Adjective or Phrase	Sample	M	SD	A	S	O	C	N- Anxiety	N- Depression	N- Hostility
kind	1	4.4	0.6	81		39				
	2	4.3	0.6	84		39				
loving	1	4.4	0.7	75		31				
	2	4.3	0.7	71		33				
friendly	1	4.4	0.6	75	39	35				
	2	4.3	0.7	69	49	32				
cooperative	1	4.2	0.6	49		57		-41		
	2	4.2	0.6	76		30				
quiet	1	2.9	0.8		-82					
	2	3.1	0.8		-80					
outgoing	1	3.9	0.9	40	77					
	2	3.7	0.9	38	81					
shy	1	2.7	0.9		-79			33		
	2	2.8	0.9		-78			42		
talkative	1	3.8	0.9		78					
	2	3.6	0.9		77					
flexible	1	3.9	0.7	34		79		-32		
	2	3.9	0.7	34		82		-30		
adaptable	1	4.0	0.7	30		77				
	2	4.0	0.7	39		80				
open-minded	1	4.1	0.7	31		72				
	2	4.0	0.9	30		72				
easy going	1	4.2	0.7	45		58		-32	-34	
	2	4.0	0.8	45		61		-37	-43	
messy	1	2.6	0.9				-78			
	2	2.8	0.8				-87			
organized	1	3.8	0.9				89			
	2	3.7	0.9				86			
nervous	1	2.6	0.7					67		
	2	2.6	0.7					71		
worrier	1	3.0	1.0					70		
	2	3.0	0.9					68		

(continued on next page)

Note.—Decimal points omitted. Sample 1: $n=8,151$; Sample 2: $n=1,109$. A = Agreeableness, S = Surgency, O = Openness, C = Conscientiousness, N = Neurotic.

TABLE 2 (CONT'D)
 MEANS, STANDARD DEVIATIONS, AND FACTOR LOADINGS (> .30 AFTER PROMAX ROTATION AND
 KAISER NORMALIZATION) FOR TWO INDEPENDENT SAMPLES OF INDIVIDUALS WHO
 COMPLETED SELF-RATINGS ON 23 ADJECTIVE/DESCRIPTOR ITEMS FROM RELATE

Adjective or Phrase	Sample	<i>M</i>	<i>SD</i>	A	S	O	C	N- Anxiety	N- Depression	N- Hostility
fearful	1	2.5	0.8					59		
	2	2.6	0.8					66		
tense	1	2.8	0.8					51		
	2	2.9	0.8					50		
depressed	1	2.3	0.8					55	71	
	2	2.3	0.8					50	69	
sad and blue	1	2.4	0.7					53	61	
	2	2.5	0.7					48	67	
feels hopeless	1	2.0	0.8					53	50	
	2	2.0	0.8					54	52	
fight with others	1	2.1	0.7							69
	2	2.3	0.8							74
easily irritated	1	2.5	0.8				-33			78
	2	2.5	0.8				-32			80

Note.—Decimal points omitted. Sample 1: $n = 8,151$; Sample 2: $n = 1,109$. A = Agreeableness, S = Surgency, O = Openness, C = Conscientiousness, N = Neurotic.

in the larger sample ($n = 8,151$) and 66.1% of the variation in the smaller sample ($n = 1,109$). The amount of variation accounted for by each factor was similar for both samples. Because the numbers were so similar, only the variances from the larger sample are reported. The order in which the factors were extracted was the same in both samples: Surgency, Neurotic–Anxiety, Neurotic–Depression, Openness, Agreeableness, Neurotic–Hostility, and

TABLE 3
 COVARIANCE STRUCTURE BETWEEN FACTORS (> .30) FOR TWO INDEPENDENT SAMPLES
 ON 23-ITEM SELF-RATINGS FOR ADJECTIVE/DESCRIPTOR PORTION OF RELATE

Factor	Sample	A	S	O	C	N- Anxiety	N- Depression
N–Hostility	1	-37		-47		41	
	2	-34		-47		42	
N–Depression	1						
	2						
N–Anxiety	1						
	2						
Conscientiousness	1						
	2						
Openness	1	61					
	2	60					
Surgency	1						
	2						

Note.—Correlations for Sample 1 ($n = 8,151$) listed above; correlations for Sample 2 ($n = 1,109$) listed below. Decimals omitted. A = Agreeableness, S = Surgency, O = Openness, C = Conscientiousness, N = Neurotic

Organization. Following the same order the variances for the unrotated factors were 6.58, 2.42, 2.29, 1.58, 0.97, 0.90, and 0.83. The rotated variances were 2.71, 2.67, 2.49, 2.13, 2.01, 1.87, and 1.67. The variances explained by each factor eliminating other factors were 2.26, 1.43, 1.49, 1.42, 1.22, 1.22, and 1.58. The variances explained by each factor ignoring other factors were 3.37, 4.46, 4.24, 3.33, 3.82, 3.76, and 1.85. The cross-correlations between the seven rotated and adjusted Relate/big five scales are shown in Table 3. For normative purposes in clinical use, means and standard deviations for the four factors and three subscales are listed in Table 4.

TABLE 4
MEANS AND STANDARD DEVIATIONS OF RATINGS (1-5) FOR
BIG FIVE MEASURES DERIVED FROM RELATE

Measure	Sample	<i>M</i>	<i>SD</i>	Measure	Sample	<i>M</i>	<i>SD</i>
Agreeableness	1	4.3	0.5	N-Anxious	1	1.7	0.6
	2	4.2	0.5		2	1.8	0.6
Surgency	1	3.7	0.7	N-Depressed	1	1.2	0.7
	2	3.4	0.7		2	1.3	0.7
Conscientiousness	1	3.6	0.8	N-Hostile	1	2.4	0.7
	2	3.4	0.8		2	2.4	0.7
Openness	1	4.0	0.5				
	2	4.0	0.5				

Note.—Sample 1, $n = 8,151$; Sample 2, $n = 1,109$.

DISCUSSION

The present re-analysis of the Relate descriptors has not led to a new way of grouping them and likely is not superior to the old and original seven-factor solution. The contribution of the present analysis is simply to point out that the names of the scales in Relate are not as serviceable and generalizable as they might be because they were uniquely named independently of the big five measure of human personality. It is our recommendation that the scoring on the personality section of the Relate test be left intact (other than to discard the one item, "acts immature under pressure"), but that clinicians and researchers be aware that the renamed scales can be interpreted in a way consistent with the big-five personality measures. Kindness could be renamed Agreeableness, Extroversion renamed Surgency, Organized renamed Conscientiousness, Flexibility renamed Openness, Happy (without the Relate inversion of the items) renamed Neurotic-Depressed, Maturity (without the inversion) renamed Neurotic-Hostile, and Calmness (without the inversion) renamed Neurotic-Anxious. After renaming the scales and discarding the one item, the scoring schemes which have been used for years in clinical and ministerial practice can be retained. Given the strong multiple loadings on some descriptors, we recommend that for research use the items be forced

into seven factors (four main scales and three neuroticism subscales) and that the factor scores after a promax rotation and Kaiser normalization be used in subsequent analysis to provide a richer and more consistent interpretation of the data.

The first limiting factor on the use of Relate to measure the big five factors of personality is the brevity of the personality descriptors section. If factor scores are not used, some scales are defined by only two items. Nevertheless, the two items are robust and distinct, and similarly short subscales can be found in other measures (Costa & McCrae, 1992). The second limiting factor is that the norms listed in Table 4 do not come from a sample known to be representative of the USA population as a whole. Nevertheless, the fact that the samples are large, independently drawn, contain data from individuals from all sections of the country, and produce similar results is heartening if not wholly convincing (see Busby, *et al.*, 2001, for a more detailed description of the Relate participants).

REFERENCES

- AMADOR, J., CHARLES, T., TAIT, J., & HELM, H. W., JR. (2005) Sex and generational differences in desired characteristics in mate selection. *Psychological Reports*, 96, 19-25.
- BOTWIN, M. D., BUSS, D. M., & SHACKELFORD, T. K. (1997) Personality and mate preferences: five factors in mate selection and marital satisfaction. *Journal of Personality*, 65, 107-136.
- BOUCHARD, G., LUSSIER, Y., & SABOURIN, S. (1999) Personality and marital adjustment: utility of the five-factor model of personality. *Journal of Marriage and the Family*, 61, 651-660.
- BUSBY, D. M., HOLMAN T. B., & TANIGUCHI, N. (2001) Relate: relationship evaluation of the individual, family, cultural, and couple contexts. *Family Relations*, 50, 308-316.
- COSTA, P. T., & MCCRAE, R. R. (1992) *NEO PI-R professional manual*. Odessa, FL: Psychological Assessment Resources.
- DENISTON, W. M., & RAMANALAH, N. V. (1993) California Psychological Inventory and the five-factor model of personality. *Psychological Reports*, 73, 491-496.
- DIGMAN, J. M., & INOUE, J. (1986) Further specification of the five robust factors of personality. *Journal of Personality and Social Psychology*, 50, 116-123.
- GATTIS, K. S., BERNS, S., SIMPSON, L. E., & CHRISTENSEN, A. (2004) Birds of a feather or strange birds? Ties among personality dimensions, similarity, and marital quality. *Journal of Family Psychology*, 18, 564-574.
- GREENWALD, D. F. (1999) Relationships between the Rorschach and the NEO-Five Factor Inventory. *Psychological Reports*, 85, 519-527.
- HOLMAN, T. B. (2001) *Premarital prediction of marital quality and stability*. New York: Kluwer Academic/Plenum.
- JOHN, O. P., & SRIVASTAVA, S. (1999) The big five trait taxonomy: history, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality*. (2nd ed.) New York: Guilford. Pp. 102-138.
- LARSON, J. (2000) *Should we stay together*. Hoboken, NJ: Jossey-Bass.
- LAVEE, Y., & BEN-ARI, A. (2004) Emotional expressiveness and neuroticism: do they predict marital quality? *Journal of Family Psychology*, 18, 620-627.
- MCDONALD, D. A., & HOLLAND, D. (2002) Examination of relations between the NEO Personality Inventory-Revised and the Temperament and Characteristics Inventory. *Psychological Reports*, 91, 921-930.
- NEMECHEK, S., & OLSON, K. R. (1999) Five-factor personality similarity and marital adjustment. *Social Behavior and Personality*, 27, 309-317.
- RAMANALAH, N. V., BYRANAN, A., & NGUYEN, T. (1996) Weinberger adjustment typology and the five factor model of personality. *Psychological Reports*, 78, 432-434.

- RAMANALAH, N. V., RIELAGE, J. K., & CHENG, Y. (2002) Cloninger's Temperament and Character Inventory and the NEO Five-Factor Inventory. *Psychological Reports*, 90, 1059-1063.
- RAMANALAH, N. V., & SHARPE, J. P. (1998) Structure of the Coolidge Axis II Inventory Personality Disorder Scales from the five-factor model perspective. *Psychological Reports*, 83, 947-952.
- WATSON, D., HUBBARD, B., & WIESE, D. (2000) General traits of personality and affectivity as predictors of satisfaction in intimate relationship: evidence from self- and partner-ratings. *Journal of Personality*, 68, 413-449.
- WIGGINS, J. S. (1996) *The five-factor model of personality*. New York: Guilford.
- WIGGINS, J. S., & TRAPNELL, P. D. (1996) A dyadic-interactional perspective on the five-factor model. In J. S. Wiggins (Ed.), *The five-factor model of personality*. New York: Guilford. Pp. 88-162.

Accepted November 22, 2005.