Bridging the Idiographic-Nomothetic Divide: A Follow-Up Study

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ABSTRACT In a replication and extension of Grice (2004), participants in the current study rated themselves and other known individuals on scales constructed from their own personal constructs and on marker items for the Big Five model personality traits. Confirmatory components analyses revealed excellent fit for the Big Five Model when applied to aggregate trait ratings but highly variable fit when applied to participants' individual ratings. Comparisons of the personal construct and trait ratings indicated an approximate average overlap of only 51%, and additional analyses revealed several factors that contributed to the uniqueness of the personal constructs. These findings were discussed in the context of the idiographic-nomothetic distinction drawn in personality psychology.

The terms *nomothetic* and *idiographic* were introduced to personality psychology by Gordon Allport in his 1937 text, *Personality: A Psychological Interpretation*. For contemporary psychologists, the former term has become equated with aggregate methods of data collection and analysis, and the latter has come to describe research strategies that place considerably more emphasis on the individual

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(Rosenzweig, 1986; Runyan, 1983). As pointed out by Lamiell (1998), however, this modern usage is contrary to the meanings originally intended by Wilhelm Windelband, who coined the two terms. Whereas nomothetic was originally meant to refer to general laws created by scientists to cover distinct classes of phenomena, idiographic was intended to describe explicit knowledge of a group of people or a single individual that is bound by time, context, and culture (Lamiell, 1998, p. 28). Lamiell further argued that contemporary personality psychologists have failed to recognize that a truly nomothetic theory attempts to describe what is true *in general* (free of time and context) rather than what is true *in the aggregate* or *on average* and that a truly idiographic approach is akin to an historical analysis of a *single person* or *group of persons*.

George Kelly (1955) also drew attention to the important distinction between what is true in general and what is true in the aggregate when discussing nomothetic reasoning in his Personal Construct Theory (PCT). Kelly argued that a clinical psychologist, for example, may abstract a bipolar construct (or concept) from behaviors observed in a client and then attempt to apply the construct to other clients. In doing so, the psychologist moves from an idiographic to a nomothetic framework and may find the construct to apply to all other clients or to a subclass of clients (e.g., males, clients under 20 years of age, or clients with a particular case history). The important point is that the psychologist seeks to understand under what conditions the concept can be said to be generally applicable, or true, given a number of framing conditions such as gender or age. While Kelly also went on to suggest the psychologist could employ sampling methods to understand how a particular construct behaves across individuals, he never lost sight of the important distinction between the general and the aggregate and the fact that what is true for the average may not be true for particular persons (see Kelly, 1955, p. 84).

Grice (2004) recently employed the theoretical framework and empirical methodology of Kelly's PCT to explore the idiographic-nomothetic distinction as it applies to the Big Five trait model of personality. In Grice's study, participants were required first to rate themselves and other known individuals on scales constructed from their own personal constructs (bipolar, descriptive adjectives). The participants then rated themselves and the same target people on standardized marker items for the Big Five personality traits (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Intellect). The latter trait ratings

of self and others were subsequently analyzed at the aggregate and individual levels with a simple form of confirmatory components analysis. In this way, the fit of the Big Five model was evaluated for averaged and for individual trait ratings. Extension analysis was also used to assess the degree to which the Big Five component scores explained variation in the personal construct ratings. The results supported the fit of the Big Five model to the aggregate data but also revealed a great deal of individual variability in the fit of the model to each person's trait ratings. Thus, while the Big Five model was found to fit well in the aggregate, it was not found to fit the participants' trait ratings generally. The results, moreover, showed that approximately 56% of the variability in the personal construct ratings could be explained by the Big Five component scores. In other words, the Big Five and personal construct ratings overlapped to some degree but also revealed distinct patterns of variation.

Grice's (2004) study buttresses Schiller, Tellegen, and Evens' (1995) contention that idiographic methods and procedures are the final testing ground of nomothetic concepts. In other words, bridging the idiographic-nomothetic divide is a matter of demonstrating the generality of theoretical constructs, such as personality traits, through the study of individual lives. Social-cognitive theorists have made similar arguments in recent years in their efforts to apply traits or individual-difference variables to persons in different contexts. Their goal has been to develop general theories for understanding cross-situational consistency and variability in the behavior of individuals (see Cervone, 2004; Mischel, 2004). The focus is therefore placed on the person or, more specifically, on examining within-person rather than between-person variability (see Cervone, 2005).

In contrast to demonstrating the generality of personality traits through the study of individual lives, some investigators have sought to establish the generality of their models by showing that free-response descriptions, like those found in repertory grids, can be effectively sorted into existing trait categories (e.g., Kohnstamm, Halverson, Mervielde, & Havill, 1998; Mervielde, 1994). In this manner, the trait model under consideration is shown to provide an inclusive (general) set of categories for understanding the ways in which individuals describe themselves and others. Some authors have gone so far as to conclude that searching for personality traits beyond their given model may be fruitless: "If one desires to venture 'beyond the Big Five,' the surest destinations will be outside those

familiar territories of description that personality psychology has settled into and cultivated" (Saucier & Goldberg, 1998, p. 521; although, see Saucier, 2002a), and "The conclusion, therefore, seems wholly warranted that most idiographic traits, although in fact resulting in a far more complex or richer description of anyone's individual personality, can be simply located in the nomothetic framework of the four personality dimensions [Insensitivity, Extraversion, Neuroticism, Orderliness] mentioned above" (Van Kampen, 2000, p. 236). In Grice's (2004) study, however, the personal constructs could not generally be included in the component space of the Big Five model, and the proportional overlap in variability of the personal construct and Big Five trait ratings was only .56. This relatively modest amount of overlap stands in contrast to these previous studies and suggests that further investigation of the generality of trait models, in terms of their inclusiveness, is needed.

In light of the relevance of Grice's (2004) results to these areas of research and discussion, a number of limitations of his empirical methods also warrant further investigation. At least three factors limit the results and conclusions of his study: (1) the Big Five marker items used in the nomothetic rating procedures, (2) the personal construct elicitation method, and (3) the target people employed in both rating procedures. The purpose of the current study was therefore to explore these factors by extending Grice's original study in a number of important ways. First, we employed a unique and larger set of marker items for the Big Five personality traits that were selected from Goldberg's (1999) *International Personality Item Pool* on the Web. Second, personal constructs (e.g., *happy-sad*) were elicited using a sentence completion task rather than Kelly's (1955) historical triadic method. The triadic method can result in constructs that are not clearly bipolar (e.g., *happy-happier*) or are comprised of opposite poles from two different constructs (e.g., *happy-greedy*; Epting, Probert, & Pittman, 1993; York, 1985). The sentence completion task employed in the current study has been shown to be user-friendly and effective (Grice, Burkley, Burkley, Wright, & Slaby, 2004), and it incorporates a simple procedure for eliciting constructs that are more clearly bipolar (Neimeyer, Bowman, & Saferstein, 2005). Finally, participants in this study were asked to think of and rate different individuals who epitomized each pole of the Big Five traits. For example, the participants were asked to think of the most extraverted person known to them personally and the most introverted person known to them personally for the extraversion-introversion

trait. Including "marker people" for the poles of the traits helped ensure sufficient variability in the ratings to identify each trait successfully in the confirmatory components analyses reported below.

Given these changes in methodology, we assessed the stability of Grice's (2004) results with two sets of analyses. First, we evaluated the fit of the Big Five model to the trait ratings of self and others at both the aggregate level of analysis and at the level of the individual. Grice reported very good fit for the model at the aggregate level of analysis but a great deal of variability in model fit at the level of the individual. Second, we evaluated the extent to which the personal construct ratings could be explained by the Big Five trait ratings. Grice reported approximately 56% overlap between the variability in the two sets of ratings, which stood in contrast to studies that support the inclusiveness of the Big Five model in relation to free response descriptions of self and others.

METHOD

Participants and Instruments

Complete data were obtained from 138 undergraduate students (36 males, 102 females) who received course credit in exchange for their participation in this study. Ages ranged from 18 to 44 years ($M = 20.01$, $Mdn = 19.00$, $SD = 2.92$), and 82.6% of the individuals reported their ethnicity as Caucasian. The participants were tested individually or in groups of two to four people and the procedures of Grice's (2004) original study were generally followed, except for the differences described below. The participants required no more than 2 hours to complete two computerized tasks that were designed and administered with Version 2.3 of Idiogrid (Grice, 2002)—software for managing and analyzing repertory grids and other types of self-report, personality data. The first task herein was referred to as a *personal construct grid* and the second task was referred to as a *trait grid*. In Grice's (2004) study, these tasks were referred to as the *nomothetic* and *idiographic grids*, respectively.

Personal construct grid. With the guidance of an experimenter, the participants first provided the names of 10 individuals who fit descriptions for each pole of the Big Five personality traits (e.g., a person who is extremely extraverted; a person who is extremely introverted; see the Appendix). The participants then examined a list of 22 role titles (e.g., "your mother," "your closest friend of your same sex"; see Grice, 2004, p. 237–238) and provided

the names of 12 additional individuals who fit the various roles. Each participant was permitted to choose any 12 of the 22 role titles but was not permitted to elicit the same name more than once or to duplicate any of the 10 previous names. Each participant thus generated a total of 22 distinct names (10 Big Five, 12 role titles) to be used in the subsequent tasks.

The names and the titles of "self" and "ideal self" were entered into Idiogrid, and the participants were administered a sentence completion task developed by Grice et al. (2004) to elicit their bipolar personal constructs. As can be seen in the list of 12 sentences presented in the Appendix, several of the named individuals as well as different conceptualizations of the self were included in the sentence completion task. For instance, the participants were required to complete the following sentence with a single word or short phrase: "Generally speaking, I am the type of person who is _____." After entering a response, the participants were then immediately asked to enter the opposite word or phrase, thus yielding a bipolar personal construct. According to Grice et al., this procedure is much more user-friendly than the triadic construct elicitation procedure commonly employed in studies of Kelly's personal construct theory.

After eliciting 12 personal constructs, the participants rated each of the 24 elements (viz., self, ideal self, and 22 individuals) on each construct. The constructs and elements were presented in a random order that was determined for each participant. A 5-point Likert-type scale was used with the following labels: "Very Inaccurate," "Moderately Inaccurate," "Neither Inaccurate nor Accurate," "Moderately Accurate," and "Very Accurate." The item stem was presented as follows: "_____ is the type of person who is _____ (as opposed to _____)." The first blank in the item stem was filled with the name of the person under consideration, and the second and third blanks were filled with the poles of the personal constructs. The 288 ratings were recorded in a 12×24 (constructs $\times$ elements) matrix, or grid, for subsequent analysis.

Trait grid. The 24 elements from the personal constructs were loaded into the trait grids in Idiogrid. The participants then rated each of the 24 elements on 30 Big Five trait descriptors. The descriptors were randomly selected from Goldberg's list of 100 lexical marker items (Goldberg, 1999). Six descriptions were selected for each of the Big Five traits with the following restrictions: (1) three of the six items for each trait were reverse-keyed, and (2) none of the items had been previously employed by Grice (2004). The selected items are listed in Table 1. The ratings were conducted with an item stem that read, "_____ is the type of person who _____." The element under consideration was inserted by Idiogrid into the first blank, and the Big Five descriptor under consideration was inserted into the second blank. The descriptors and elements were

Table 1
Standardized Pattern Coefficients, Squared Multiple Correlations, and Component Correlations and Variances for Aggregate Grid

	Components					
	E	A	C	N	I	SMC
Big Five Items						
takes charge	**.58**	−.21	.26	.04	.17	.49
waits for others to lead the way	−**.53**	.21	−.23	.02	−.20	.47
starts conversations	**.77**	.16	−.03	.04	−.08	.64
is a very private person	−**.73**	.01	.24	.04	.14	.43
does not talk a lot	−**.81**	−.05	.17	−.09	.12	.54
feels at ease with people	**.64**	.22	−.05	−.10	−.04	.60
thinks of others first	−.13	**.81**	.12	.00	.00	.70
is not really interested in others	−.01	−**.80**	.06	−.03	−.06	.62
is on good terms with nearly everyone	−.07	**.75**	.07	−.11	−.01	.68
is hard to get to know	−.38	−**.58**	.19	.00	.12	.45
takes time out for others	−.05	**.80**	.03	.02	.03	.65
feels little concern for others	.14	−**.85**	−.02	−.05	−.05	.65
makes a mess of things	.08	−.06	−**.72**	.12	.03	.59
likes order	.01	−.02	**.77**	.10	−.08	.45
wastes his/her time	−.05	.10	−**.85**	.03	.04	.63
makes plans and sticks to them	.00	.06	**.73**	−.02	−.01	.59
does things in a half-way manner	.00	−.01	−**.79**	−.01	−.03	.67
pays attention to details	.02	.00	**.65**	.07	.13	.53
gets overwhelmed by emotions	−.03	.49	−.14	**.70**	−.01	.37
worries about things	−.14	.30	.10	**.69**	−.02	.37
gets irritated easily	.06	−.20	.01	**.67**	.01	.59
rarely gets irritated	−.03	.22	−.01	−**.64**	.02	.59
seldom gets mad	−.12	.31	.04	−**.61**	.00	.64
is relaxed most of the time	.05	.06	−.06	−**.64**	−.04	.42
has a rich vocabulary	−.07	−.10	.06	.02	**.83**	.60
avoids difficult reading material	.09	.16	−.16	−.01	−**.73**	.51
catches on to things quickly	.05	−.09	.05	−.03	**.73**	.56
does not have a good imagination	−.08	−.25	.27	−.02	−**.61**	.43
is good at many things	.06	.16	.01	.04	**.57**	.51
has difficulty understanding abstract ideas	.04	.07	.01	.06	−**.80**	.57
Component Variances and Correlations						
(E)xtraversion:	5.18					
(A)greeableness:	.48	8.22				
(C)onscientiousness:	.36	.67	7.75			
(N)euroticism:	−.31	−.53	−.40	5.20		
(I)ntellect:	.51	.65	.72	−.45	7.85	

Note. Target loadings are printed in boldface type.

again presented in a random order that was determined for each participant, and the responses were recorded on a 5-point Likert-type scale that was identical to the scale used in the personal construct grid. The 720 ratings were recorded in a 30×24 (Big Five descriptors $\times$ elements) matrix, or grid, for subsequent analysis.

RESULTS

Fit of the Big Five Model-Aggregate Data

The 138 trait grids were concatenated to form a 30 (Big Five marker items) $\times$ 3312 (138 grids multiplied by 24 rated individuals) aggregate grid. This large grid was then submitted to a Multiple Group Components Analysis (MGCA; Gorsuch, 1983; Guttman, 1952), which is essentially a confirmatory principal components analysis. Unlike Grice's (2004) previous study, however, we based this analysis (and the analyses below) on the Big Five item covariances rather than the correlations. Correlations for items with no variability are not defined and must be removed from the analysis. Covariances, on the other hand, are zero for items with no variability and could therefore remain in the analysis.

The component variances and correlations, item squared multiple correlations, and standardized pattern coefficients reported in Table 1 indicate that the fit of the Big Five model to the concatenated grid was very good. The component variances were homogeneous, indicating the five components were similarly effective in explaining variance in the ratings. The squared multiple correlations indicated that over half of the variance was explained by the five components for most of the marker items, and the loadings for the marker items were high (in absolute value) on their target components and low on their nontarget components. In other words, the pattern matrix exhibited simple structure. One area of poor fit, however, was revealed by the high component correlations, which stood in contrast to the usual assumption of orthogonality among the Big Five personality traits.

The fit of the Big Five components to the aggregate grid ratings was assessed in two additional ways. First, the root mean square (RMS) of the original item covariance matrix and the root mean square residual (RMSR) of the residual covariance matrix—from which the Big Five components have been removed—were compared. Comparing these two statistics indicated the degree to which

the Big Five components reproduced the original covariance matrix. The results showed substantial percentage reduction (75%) between the RMS (.76) and RMSR (.19) values. Second, congruence coefficients (Tucker, 1951) were examined to assess model fit at the level of the marker items. These coefficients quantify the agreement between the observed pattern coefficients and an ideal pattern for the Big Five components. The ideal pattern was constructed from +1s, −1s, and 0s. Each ideal target loading was assigned a value of +1 or −1 in accord with the direction of the item's wording (i.e., reverse-keyed items were assigned values of −1). All ideal nontarget loadings were assigned values of 0. The resulting congruence coefficients for the Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Intellect components were .95, .89, .94, .98, .97, and .94, respectively. Keeping in mind that congruence coefficients can range in value from 0 to 1, with the latter indicating perfect fit, the results provide strong support for the fit of the Big Five components at the aggregate level.

Fit of the Big Five Model to Individual Data

The fit of the Big Five model to each individual's trait grid ratings was also assessed using MGCA. The results generally indicated a substantial difference between the RMS ($M = .91$, $Mdn = .86$, $SD = .46$) and RMSR ($M = .17$, $Mdn = .15$, $SD = .08$) values. In fact, the mean proportional reduction in the root mean square values from the original to the residual covariance matrices was .79 ($Mdn = .81$, $SD = .12$). As indicated by the standard deviation, however, some variability was noted in the fit for individual grids, and the proportional reduction values ranged from .28 (very little reduction) to .97 (near-perfect reproduction of the covariance matrix). This variability can be comprehended by examining the MGCA results in Table 2 for a participant's trait grid that yielded a small RMSR value. As can be seen, while most of the squared multiple correlations were high, some of the Big Five items were not explained particularly well by the five components. The target loadings were also generally high compared to the nontarget loadings. A few exceptions, however, are noteworthy: "gets overwhelmed by emotions" loaded more highly on the Agreeableness component (1.03) than the Neuroticism component (.46), and "is relaxed most of the time" was viewed as a stronger indicator of low Conscientiousness

Table 2
Standardized Pattern Coefficients, Squared Multiple Correlations, and Component Correlations and Variances for Individual Trait Grid Fit Well by the Big Five Model

	Components					
	E	A	C	N	I	SMC
Big Five Items						
takes charge	**.78**	.01	.11	−.05	.18	.84
waits for others to lead the way	−**.90**	.36	−.17	.18	.06	.70
starts conversations	**.82**	.39	−.04	.14	.05	.96
is a very private person	−**.89**	.04	.12	−.07	.03	.76
does not talk a lot	−**.93**	.01	.13	−.18	.06	.85
feels at ease with people	**.89**	.01	.02	−.16	−.08	.79
thinks of others first	−.09	**1.03**	.12	−.10	−.36	.87
is not really interested in others	.04	−**1.03**	.16	.05	.07	.84
is on good terms with nearly everyone	−.25	**.49**	.13	−.13	.34	.80
is hard to get to know	−.56	−**.70**	.18	−.19	−.07	.84
takes time out for others	−.16	**.83**	.06	.18	.20	.76
feels little concern for others	.02	−**.88**	−.03	.09	.17	.70
makes a mess of things	.13	−.24	−**.82**	.13	.19	.87
likes order	.03	−.23	**.97**	.22	.03	.71
wastes his/her time	−.37	.11	−**.94**	−.15	.20	.72
makes plans and sticks to them	.00	.07	**.75**	.04	.15	.76
does things in a half-way manner	−.17	−.30	−**.81**	.00	.31	.76
pays attention to details	−.45	−.26	**.43**	−.28	.52	.69
gets overwhelmed by emotions	.09	1.03	−.13	**.46**	−.22	.45
worries about things	−.30	.15	.02	**.72**	.08	.46
gets irritated easily	.05	−.33	−.28	**.61**	.24	.75
rarely gets irritated	−.10	.38	.21	−**.50**	−.07	.74
seldom gets mad	−.27	.47	.18	−**.32**	.14	.81
is relaxed most of the time	.21	.01	−.78	−**.54**	.04	.65
has a rich vocabulary	.17	.13	−.25	.06	**.68**	.53
avoids difficult reading material	.05	.37	−.31	.03	−**.67**	.42
catches on to things quickly	.18	−.24	−.13	−.01	**1.01**	.80
does not have a good imagination	−.04	−.60	.16	−.15	−**.27**	.43
is good at many things	−.21	.07	.03	−.01	**.72**	.55
has difficulty understanding abstract ideas	.13	.19	−.19	.15	−**.80**	.70
Component Variances and Correlations						
(E)xtraversion:	6.24					
(A)greeableness:	.29	9.82				
(C)onscientiousness:	.07	.59	7.77			
(N)euroticism:	−.12	−.66	−.35	5.87		
(I)ntellect:	.40	.72	.54	−.54	8.21	

Note. Target loadings are printed in boldface type.

(– .78) than low Neuroticism (– .54). Of course it should be noted that this individual's results are near to the best-case scenario for the Big Five components. For those trait grids that were not fit well by the Big Five components, such nonconformity in the loadings was the rule rather than the exception. Finally, it can also be seen in Table 2 that a number of the component correlations were high, consistent with the results reported above for the aggregate grid.

Congruence coefficients for each participant's MGCA were then computed to assess model fit at the item level. Summary statistics for the Extraversion ($M = .76$, $Mdn = .77$, $SD = .09$, $Min = .53$, $Max = .92$), Agreeableness ($M = .70$, $Mdn = .70$, $SD = .08$, $Min = .46$, $Max = .89$), Conscientiousness ($M = .71$, $Mdn = .72$, $SD = .09$, $Min = .33$, $Max = .93$), Neuroticism ($M = .78$, $Mdn = .80$, $SD = .09$, $Min = .48$, $Max = .96$), and Intellect ($M = .69$, $Mdn = .71$, $SD = .10$, $Min = .34$, $Max = .91$) components, as well as all five components combined ($M = .71$, $Mdn = .71$, $SD = .07$, $Min = .42$, $Max = .83$) provide modest support for the fit of the Big Five components. The minimum and maximum values and the standard deviations again indicated variability in the fit of the components to the participants' trait grids. The mean and median values for the five components were furthermore lower than the corresponding values reported above for the aggregate analyses.

Personal Construct-Trait Grid Comparisons

An extension analysis (Gorsuch, 1997), based on the Big Five multiple group components, was conducted for each participant to assess the degree of empirical overlap between the trait and personal construct grids. This analysis permitted the mapping of the personal constructs onto the Big Five component space. For example, the results for the same participant's data used to create Table 2 are shown in Table 3. As can be seen, pattern coefficients and squared multiple correlations (SMCs) can be computed for each participant's grid. For this particular participant's data, the Big Five components explained over 50% of the variation in the grid ratings for most of the personal constructs. The loadings for the personal constructs also seemed consistent with the Big Five model. For example, the personal construct *fun-boring* loaded most highly on Agreeableness and the constructs *outgoing-shy* and *extroverted-introverted* loaded most highly on Extraversion. These results can be displayed visually, as in Figure 1, which shows a two-dimensional graph of the

Table 3
Pattern Coefficients and Squared Multiple Correlations for an Example Individual's Extended Personal Construct Grid

	Components					
	E	A	C	N	I	SMC
Personal Constructs						
fun-boring	.32	.76	−.14	.19	.18	.76
outgoing-shy	1.00	−.27	.27	−.11	−.11	.89
extroverted-introverted	.83	.07	−.05	.02	.05	.75
personable-stand offish	.54	.67	−.06	.16	−.05	.73
perfect-flawed	−.10	−.15	.57	.09	.57	.69
decisive-indecisive	.56	−.32	.21	−.37	.25	.59
committed-not committed	.02	.09	.36	.14	.49	.58
strong-weak	.05	−.03	.40	.08	.56	.63
normal-fat	−.17	.09	.39	−.22	−.20	.25
stable-experimenting	−.03	−.34	.55	.03	.69	.73
genuine-fake	.20	−.30	.52	−.49	−.21	.32
truthful-not truthful	−.01	−.30	.34	−.53	.23	.46

Note. E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, I = Intellect.

Extraversion and Agreeableness components with the salient Big Five marker items, salient personal constructs, and 24 people plotted in the space. As a point of interest, the participant viewed ideal self as more extraverted and agreeable than her actual self. Other personal constructs, however, did not load uniquely on a single component (see Table 3). Most notably, the constructs *genuine-fake* and *truthful-not truthful* did not load uniquely and their SMCs were relatively low (.32 and .46, respectively). Finally, it can be seen that the construct *normal-fat*, which apparently refers to physical body weight, did not load on any of the five components.

The SMCs indicate the extent to which the personal construct ratings were explained by the Big Five components. The results for all of the grids showed that, on average, 63% ($Mdn = .66$, $SD = .20$, $Min = .05$, $Max = .98$) of the variability in the personal construct ratings could be explained by linear combinations of the Big Five components. The 95% confidence intervals constructed around the individual SMCs, however, indicated low precision as the average

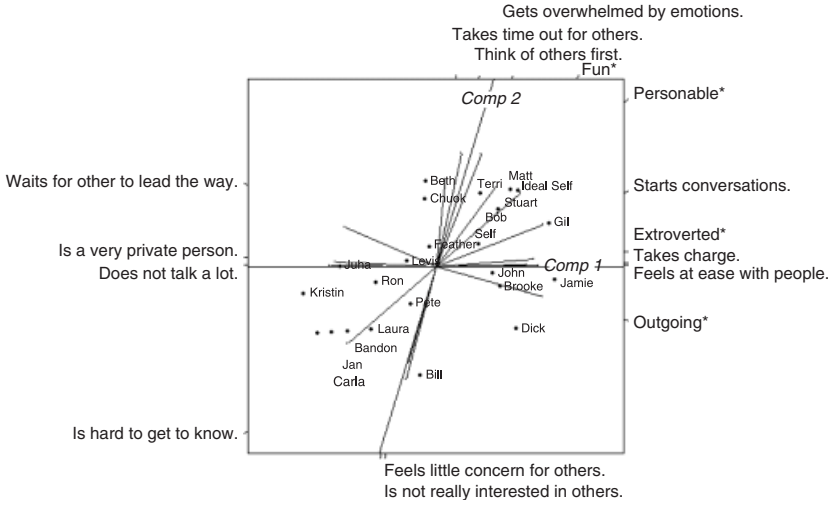

Figure 1
Semantic space of an individual's trait grid. Axes range from −1.63 to +1.63. "Comp 1" represents Extraversion and "Comp 2" represents Agreeableness. Only salient Big Five items and personal constructs (denoted by asterisks) are shown.

lower and upper limits were .26 ($Mdn = .21$, $SD = .24$) and .75 ($Mdn = .80$, $SD = .16$), respectively. Because sample SMCs are positively biased estimates of the true population values, the average lower and upper limits of the confidence intervals are centered around .51 rather than .63. These results therefore suggest that approximately 49% of the variation in the personal construct ratings is unique (i.e., lies outside the purview of the Big Five components).

Slater's (1972) *coefficient of convergence* was also computed as an index of overlap between the trait and personal construct grids. This statistic normally ranges in value from 0 to 1 and indicates the extent to which the organization of the people (e.g., as shown in Figure 1) is similar across the two grids. For instance, rating "Mom" and "Dad" as similar to one another yet different from "Self" in both the trait and personal construct grids would contribute to a high coefficient of convergence. The coefficient takes into account the interrelationships among all of the people in the grids, and values near unity indicate high similarity while values near (or below) zero indicate

dissimilarity. The coefficient was computed for all 138 participants, and the results indicated a moderate degree of similarity between the patterns of people in the trait and personal construct grids ($M = .55$, $Mdn = .56$, $SD = .20$, $Min = .01$, $Max = .90$). The mean coefficient of convergence was not significantly different from the mean reported by Grice (2004; $M = .53$, $Mdn = .53$, $SD = .19$, $Min = .14$, $Max = .87$), $t(205) = .69$, $p < .50$, $d = .10$, $CI_{.95}$: $-.04 \leq \mu_1 - \mu_2 \leq .08$.

Personal Constructs

The preceding analyses provide a purely empirical assessment of the overlap between the trait and personal construct rating tasks. While this quantitative approach is the primary contribution of this study, a more qualitative examination of the 1,656 personal constructs elicited from the 138 participants is also informative.

Twelve of the constructs were first excluded because the participants rated all 24 people with the same scale value. The remaining 1,644 personal constructs were then rank ordered in terms of their individual SMCs. One hundred "unique" constructs with the lowest SMCs (.05 to .25 range) and 100 "common" constructs with the highest SMCs (.89 to .98 range) were next examined for their content. Twenty-five of the unique constructs referred to body type (e.g., *thinner-fatter*, *normal weight-overweight*), wealth (e.g., *rich-poor*, *wealthy-poor*), ethnicity (e.g., *Indian-White*, *paler-darker*), or some other personal feature (e.g., *smoker-nonsmoker*, *Democrat-Republican*). Most of the unique constructs, however, referred to some internal disposition (e.g., *humble-cocky*, *happy-sad*) or appeared to indicate Extraversion (e.g., *outgoing-shy*, *introverted-extraverted*), Agreeableness (e.g., *nice-rude*, *loving-coldhearted*), Conscientiousness (e.g., *organized-lazy*), Neuroticism (e.g., *calm-anxious*, *even tempered-hot tempered*), or Intellect (e.g., *smart-dumb*, *smart-stupid*). Given the low SMCs, it therefore appears the participants were pouring their own idiosyncratic meanings into these latter terms. On the other end of the spectrum, none of the common constructs clearly referred to body type, wealth, ethnicity, or some other personal feature. Instead, all of these constructs referred to some internal disposition (e.g., *patient-curt*, *happy-sad*) or clearly referred to one of the Big Five personality traits (e.g., *nice-mean*, *conscientious-irresponsible*). Exactly how these personal constructs were empirically related to the Big Five components, however, cannot be determined

from the SMCs alone. As noted above, personal constructs with apparent Big Five content may not have loaded on the components as expected. The SMCs indicate only the proportion of overlap between the personal constructs and a linear combination of all Big Five components.

The first and third quartiles for the ranked SMCs were .50 and .78, respectively. Given the positive bias in the SMCs, these values indicated that half of the personal constructs (viz., those between the first and third quartiles) were only moderately overlapped with the Big Five components. Consequently, as another means of conveying the content of the personal constructs, their emergent poles (i.e., the descriptive adjectives elicited first from the sentence completion task) were alphabetically sorted. The results revealed *outgoing* ($N = 82$) as the most frequently occurring emergent pole. Since in Personal Construct Theory the meaning of the word *outgoing* depends upon its dialectical opposite, it is important to note that 38 of the participants elicited *shy* as the implicit pole. *Not outgoing* ($n = 10$), *introverted* ($n = 7$), *reserved* ($n = 6$), *quiet* ($n = 5$), *passive* ($n = 3$), *often too shy* ($n = 2$), *calm*, *close-minded*, *cultural and reserved*, *doing nothing*, *home bodies*, *insider*, *lazy*, *people who don't talk*, *withdrawn*, and *very shy* were elicited as opposites by the remaining participants. One participant even elicited *extroverted* as the opposite of outgoing. Examination of her trait and personal construct ratings indicated that she was apparently confused about the definition of extraversion! Furthermore, the SMCs for the 38 *outgoing-shy* personal constructs ranged from .05 to .93 ($Mdn = .66$, $SD = .19$; $Mdn = .59$ for the unbiased values). Therefore, for some participants, the Big Five components overlapped highly with the *outgoing-shy* ratings, whereas for others, this personal construct was largely outside the range of the Big Five model.

The second most frequently elicited emergent construct pole was *happy* ($N = 53$). For 32 of these participants, *sad* was elicited as the implicit (opposite) pole. Other implicit poles were, *unhappy* ($n = 7$), *depressed* ($n = 4$), *worried* ($n = 2$), *angry*, *bitter*, *grumpy*, *jealous*, *mad*, *not happy*, *wealthy*, and *sad or depressed*. The SMCs for the 32 *happy-sad* personal constructs again showed great range, .14 to .92 ($Mdn = .67$, $SD = .21$; $Mdn = .58$ for the unbiased values). Other personal construct emergent poles elicited frequently were *friendly* ($N = 31$), *fun* ($N = 28$), *hardworking* ($N = 26$), *funny* ($N = 23$), *nice* ($N = 23$), *calm* ($N = 21$), *caring* ($N = 21$), *extraverted* ($N = 20$), *giving*

(*N* = 18), *mature* (*N* = 18), *quiet* (*N* = 18), *confident* (*N* = 17), *laid back* (*N* = 17), *open* (*N* = 17), *open-minded* (*N* = 17), and *talkative* (*N* = 17). *Introverted* was in every case elicited as the opposite of *extraverted*, but for the other frequent constructs, variability in the implicit poles was again noted. The SMCs also varied across the participants for the identical personal constructs.

DISCUSSION

Nomothetic Results and Conclusions

The results of the current study for the trait grids were highly consistent with the results reported in Grice's (2004) original study. Using Multiple Group Components Analysis (MGCA), the Big Five model was shown to fit the aggregate ratings of self and others on the 30 marker items. The five components were nearly equal in strength, the root mean square value was substantially reduced from the original to the residual covariance matrix, and the item loadings were highly congruent with a predicted pattern of values. The only area of poor fit for the aggregate analysis was found in the component correlations. Many advocates of the Big Five model argue that the five components (or factors) should be orthogonal or nearly orthogonal (see Saucier, 2002a, pp. 56–57). In recent reviews by Saucier (2002b) and Markon, Krueger, and Watson (2005), however, empirical studies have commonly found the measured traits to be correlated—consistent with the findings of this study and those of Grice. Saucier (2002b) further argued that the correlations among the measured traits can be reduced by using particular samples of marker items. A similar strategy for selecting items could possibly be used with the current methods to achieve less correlated components; alternatively, a complex item-weighting scheme could be employed when defining the components (see Grice, 2004, p. 233).

When MGCA was applied to the individual trait grids, a great deal of variability in the fit of the Big Five model was noted. The root mean square residual values indicated that the five components were effective in reproducing the item covariance matrices for many of the individuals but relatively ineffective for others. Moreover, the congruence coefficients indicated that the component loadings followed the predicted pattern for some individuals' ratings but not for

others. Although Grice (2004) did not report the mean square residual values, he did report congruence coefficients for the loading matrices, and the values for both studies were fairly similar. For the overall fit of the Big Five model, for instance, the average congruence values were .78 and .71 for Grice's and the current data, respectively. Furthermore, in Grice's study, the minimum and maximum average congruence coefficients for all five components were .62 and .90, respectively. These values were higher than the minimum (.42) and maximum (.83) values found in the current study but demonstrated similar ranges. Moreover, the standard deviations for the congruence coefficients were similar across the two studies. Recall that the current methods included unique and additional maker items for the Big Five personality traits, and required participants to elicit a person who epitomized each pole (e.g., the most extraverted and introverted people known personally to the participant) of the traits. It appears that the effects of these methodological changes were negligible, and the take-home message is that the fit of the Big Five model varied among individual trait grids in both studies.

It is also important to point out that the lack of fit for the individual trait grids can be characterized in a number of ways. As with the aggregate results, the components were moderately to highly correlated in many of the individual grids. For some individuals, the five components were not of equal strength; that is, their variances were not homogeneous. In such ratings, the participants may have failed to separate any number of the five personality traits in their ratings. In other grids, the five components may have emerged with homogeneous variances, but the matrix of loadings may have failed to match the anticipated pattern of values. For instance, marker items for particular components may have cross-loaded on other components or failed to load on their designated components. These errant pattern matrices would thus yield low congruence coefficients for the five components.

Such within-person variability in organization supports the arguments of advocates of the social-cognitive approach to personality theory and assessment (e.g., Cervone, 2004; Mischel, 2004). One premise of this approach is that constructs derived from analyses of aggregate data may not be useful in explaining the behavior of particular individuals in the analysis. Cervone (1997), for instance, found that traditional trait categories derived from aggregate analyses were not as predictive of self-efficacy as schematic attributes

that were uniquely defined by the participants in his study. The primary goal of the social-cognitive psychologist, then, is to find the unique cognitive structures (schemas) that distinctively characterize the individual and lead to consistent cross-situational behaviors and patterns in judgment. Averaging data across individuals or across situations runs contrary to this purpose, given the logical and empirical disconnect between the aggregate and the particular in the study. The focus is instead placed squarely on the distinct persons under investigation as they navigate their ways through shifting contexts in their environments. The person-centered methods in this study seem well suited for research conducted from the social-cognitive viewpoint. One potential study, for example, could require participants to rate themselves and others in different contexts using provided descriptors (such as personality items) and personal constructs. Cross-situational variability in both the patterns of ratings and content of the personal constructs could then be examined using the statistical models described above.

Trait-Personal Construct Comparisons

The overlap or similarity between the trait and personal construct grids was assessed in two ways. First, extension analysis was used to determine the degree to which the variability in the personal construct ratings could be explained by linear combinations of the Big Five components derived from the individual MGCAs. Because the components were examined as linear combinations, this analysis included the so-called interstitial regions between the Big Five traits (see Hofstee, De Raad, & Goldberg, 1992, and Saucier, 1992). The resulting squared multiple correlations were then corrected for bias and showed that approximately 51% of variability in the personal construct ratings could be explained by the Big Five components when averaged across all participants in this study. In other words, the personal constructs mapped into the full 5-component space with approximately 51% average effectiveness. This result was similar to Grice's original result of 56% (2004), which was based on 25 Big Five marker items and used Kelly's (1955) triadic method of personal construct elicitation.

Second, the degree of similarity between the trait and personal construct ratings was assessed with Slater's coefficient of convergence. Essentially, this coefficient is an index of pattern similarity for

the rated people in the two grids. It normally ranges in value between 0 and 1, with the latter value indicating perfect pattern similarity. The computed average for the current data was .55 and was not significantly different from the mean (.53) in Grice's study (2004). This result suggests that people who were seen as similar in the trait grids were not necessarily seen as similar in the personal construct grids, and people who were seen as dissimilar in the trait grids were not necessarily seen as dissimilar in the personal construct grids. Metaphorically speaking, the group portrait changed to a degree when painted with the brushes of the Big Five personality traits and the brushes of the individuals' personal constructs. The magnitude of this change, as indicated by the coefficient of convergence, matched well with the squared multiple correlations computed from the extension analyses.

On the surface, these results stand in contrast to a recent study by Van Kampen (2000), who empirically predicted personal construct ratings from measures of Insensitivity, Extraversion, Neuroticism, and Orderliness. He reported an average multiple correlation across all constructs of .80 and concluded that his findings justified the exclusion of free-response descriptions in future investigations because they provide little information beyond the four trait measures in his study. When Van Kampen's results were corrected for bias, however, the proportion of overlap between the personal construct and trait ratings was approximately .35 with a 95% confidence interval ranging from approximately .00 to .82 (see Grice, 2004, p. 229). The results from Van Kampen, Grice, and the current study therefore suggest that personal construct ratings are not empirically redundant with ratings from two different trait models.

The current findings also stand in contrast to a number of studies in which approximately 80% of adults' free-response descriptions of children were classified unambiguously using the Big Five traits (Kohnstamm, Halverson, Mervielde, & Havill, 1998; Mervielde, 1994). These studies suggest that the Big Five traits are fairly exhaustive and inclusive descriptions of human personality—at least, when applied to children. In contrast, the current study and Grice's (2004) original study revealed moderate empirical overlap ($\sim 50\%$) between the Big Five and personal construct ratings. This discrepancy in the inclusiveness of the Big Five traits may be due to differences in methodology. In the cited studies trained judges assigned the free-response descriptions to defined trait categories using a standardized coding

scheme (see Kohnstamm et al., 1998). In the current study judges were not employed, and the methods herein allowed participants to assign their own unique meanings to the Big Five marker items as well as their personal constructs. With regard to the latter, a construct that may appear congruent with one of the Big Five traits to a trained judge may not in fact load on the component for that trait in the Multiple Group Components Analysis. In the example participant's constructs shown in Table 3, for instance, *personable-stand-offish* might be classified as Agreeableness by a trained judge; however, the participant viewed this construct as a composite of Agreeableness and Extraversion. The empirical methods employed in this study permitted such personal nuances in meaning. In terms of the participants' interpretations of the Big Five items and their own personal constructs (not the interpretations of trained judges), the coefficient of convergence and the squared multiple correlations from the extension analyses indicated only modest overlap between the two sets of descriptors.

Saucier (2003) showed that the Big Five factors do not emerge clearly in analyses of type-nouns (e.g., *jerk*, *fool*, *saint*) compared to the more common analyses of adjective terms. He also found distinct factors such as Attractiveness and Masculinity in his analysis of type-nouns. In the current study type-nouns were not found to be prevalent, particularly for personal constructs with squared multiple correlations greater than .25. While a minority of those constructs with low squared multiple correlations (i.e., those that were empirically distinct from the Big Five components) referred to physical characteristics (e.g., *thinner-fatter*, *paler-darker*) or social variables (e.g., *rich-poor*), most were clearly adjectives that referred to internal dispositions (e.g., *humble-rude*, *happy-sad*) rather than type-nouns. Examination of the most frequently occurring emergent construct poles also revealed adjectives, many of which appeared to correspond closely with Big Five traits such as *calm* (Neuroticism), *extraverted* and *outgoing* (Extraversion), *caring*, *friendly*, and *nice* (Agreeableness), *hardworking* (Conscientiousness), and *open-minded* (Intellect). Other frequent personal constructs appeared more difficult to equate with a single Big Five trait, such as *confident*, *fun*, *funny*, *happy*, and *mature*. Nonetheless, it appears that the lack of overlap between the trait and personal construct grids was not due to the presence of type-nouns in the personal constructs. It is also worth noting that the clear bipolar nature of almost all of the constructs

supported the efficacy of the sentence-completion task as a method of construct elicitation.

Ashton and Lee (2001) have recently argued that *Honesty* should be added as a new and distinct trait to the Big Five model. Was this trait or any other trait clearly discernable in the personal constructs? In other words, given the modest overlap between the personal construct and trait grids, what was "beyond the Big Five" (Saucier & Goldberg, 1998)? Unfortunately, answering this question is fraught with difficulties in the current study design. Foremost, the personal constructs were not matched in terms of their 12 personal constructs or the 24 rated people (self, ideal self, and others). In each participant's grid, the constructs and the people were unique. These grids could not therefore be combined in any way to empirically search for dimensions that might lie outside the range of the Big Five components (recall that the trait grids were matched by the Big Five items and could be concatenated). A content analysis using trained judges could be devised and conducted, but such an approach would run contrary to the primary strength of this study, namely, its purely empirical methodology. As was discussed above, judging the similarity of bipolar personal constructs is also particularly difficult. The 1656 personal constructs elicited from the 138 participants varied not only with respect to their emergent poles, but in terms of their implicit poles as well. For example, 18 different implicit poles (e.g., *shy*, *introverted*, *passive*) were elicited by the 82 participants who elicited *outgoing* as an emergent construct pole. From the perspective of Personal Construct Theory, these different implicit poles reveal different meanings for *outgoing*. Moreover, even when both construct poles were matched across participants, the squared multiple correlations varied a great deal. The extent to which a given common construct (e.g., *outgoing-shy*) was explained by the Big Five components therefore varied from participant to participant. Finally, even if the construct poles were matched and the squared multiple correlations were equal for any two participants, different pattern weights across the Big Five components could still be observed in the extension analysis. As pointed out by Rychlak (1988), understanding the meaning of a given personal construct entails a discussion of both its dialectical structure and its relationship with other constructs in the person's construct system. The same construct (e.g., *happy-sad*) may not only yield the same multiple correlation from an extension analysis for two participants but also reveal very different

relationships (loadings) with the Big Five components. These differences in how the construct is related to the Big Five traits suggests that the participants were pouring idiosyncratic meanings into not only the personal construct but the Big Five items as well. These issues pose potentially serious limitations on the validity of a content analysis that would seek to identify some general trait or traits that lie outside the range of the Big Five model from bipolar adjectives. As was alluded to above, matching the personal constructs in terms of the constructs or persons rated would eschew these difficulties and permit a purely empirical approach toward identifying novel aggregate dimensions.

Idiographic-Nomothetic Distinction Revisited

From the perspective of Personal Construct Theory (PCT) the idiographic-nomothetic divide is something of an illusion. As noted by Kelly (1955), a psychologist "may be conducting an idiographic study; but if the description is to have any thread of meaning running through it, he must relate his selection of relevant facts to principles of human behavior" (p. 42). As with other allegedly irreconcilable terms (e.g., *freewill-determinism*), Kelly considered idiographic and nomothetic to be two sides of the same coin, necessarily coexisting as a single dialectical structure. The personal construct psychologist thus concerns himself or herself with the individual lives of persons functioning in their particular cultural and historical contexts. Any explication of these persons will require the use of concepts that are at least assumed to be general in nature; that is, common to all people. Kelly's fundamental postulate and 11 corollaries provide an excellent example of a general, nomothetic framework that can be used to understand and explain the behavior of any given person.

Within this same theoretical framework and the context of the current study, can the Big Five personality traits be considered nomothetic? Again pointing to Windelband's original intention to equate nomothetic constructs with general laws that transcend context and time, Lamiell (1997) argues that the Big Five traits should not be considered as nomothetic constructs. Instead, they should be considered as descriptions of aggregate data that are bound by time and culture. On the one hand, supporters of the Big Five Model—or similar trait models—could counterargue that the generality of the

traits has been established via numerous cross-cultural studies. Factor analyses of data collected in the United States, Germany, Korea, China, and other countries (McCrae & Costa, 1997) have revealed evidence of the Big Five factors in the self-ratings of people from these diverse cultures. On the other hand, critics of the Big Five Model could point out that personality psychology should be, first and foremost, concerned with persons, not averages of responses from large samples of people. Thus, while the Big Five traits may be supported in aggregate data from various cultures, they have not been shown to be generally applicable to the individual persons in those cultures. In support of this argument, the results of the confirmatory Multiple Group Components Analyses above revealed a great deal of variability in the fit of the Big Five Model at the level of the individual. For some individuals, defining the traits in terms of their six respective items produced a model that fit the ratings well, while for others, the defined traits did not fit the data well. It cannot be said, therefore, that the Big Five Model is generally true for the persons in this study. It may be generally true as a model applied to aggregate data, but it has not been shown to be generally true at the level of the individual.

Future Directions

A number of important questions regarding the methodology employed in this study still remain. Foremost, 24 people were rated in the trait and personal construct grids. While a large amount of data was produced, overall, for each individual, this number may be considered rather small for conducting a confirmatory components analysis. In the general factor analysis literature, large sample sizes are routinely recommended for obtaining results that are generalizable (MacCallum, Widaman, Zhang, & Hong, 1999). Given the individual level of analysis employed in the current study, large sample sizes are not practical unless ratings can be obtained from several testing occasions (e.g., see Schiller, Tellegen, and Evens, 1995). Another practical difficulty would involve requiring the participants to provide names of a large number of people whom they know well enough to rate on the Big Five marker items or on their own personal constructs. If a sufficiently large number of people (e.g., 100) could be included in the grids, however, the generalizability of the results for each person would certainly be enhanced. It is also

conceivable that larger numbers of people in the grids would enhance the fit of the Big Five model to the individual ratings. Including more people would bring greater diversity into the rating procedure and would permit the participants to draw distinctions among the Big Five traits more effectively. This potential effect was addressed to some extent in the current study by the inclusion of "marker people" (much like marker items for traits) for the poles of the Big Five traits. Combinations of the Big Five traits, such as an agreeable-extraverted person or a conscientious-neurotic person, were not necessarily represented, thus potentially still limiting the discriminability among the five traits. Finally, another benefit of larger grids would be greater precision in estimating the squared multiple correlations in the extension analysis. In other words, the width of the confidence intervals around the squared multiple correlations would be greatly reduced.

Additional work is clearly needed to fully explore the strengths and weaknesses of the current methodology. This study: (1) employed a novel set of Big Five marker items for the trait grids, (2) used a sentence-completion task to elicit personal constructs, and (3) included "marker people" who epitomized the poles of the Big Five traits in the rating procedures. Despite these changes to Grice's (2004) original methodology, the results of his study were essentially replicated. We are therefore hopeful that the current results will be encouraging for other investigators who wish to utilize these methods in their own research. Perhaps through such methods and a clearer understanding of terminology, personality psychologists can "bring the person back into scientific psychology" (Molenaar, 2004) and finally bridge the idiographic-nomothetic divide.

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APPENDIX

Big Five Role Titles

1. A person you know who is extremely *Extraverted* (talkative, outgoing, active, etc.)
2. A person you know who is extremely *Introverted* (quiet, reserved, passive, etc.)
3. A person you know who is extremely *Emotionally Stable* (calm, even-tempered, self-satisfied, etc.)
4. A person you know who is extremely *Emotionally Unstable* (worrying, temperamental, self-pitying, etc.)
5. A person you know who is extremely *Conscientious* (hard-working, well-organized, punctual, etc.)
6. A person you know who is extremely *Irresponsible* (negligent, lazy, disorganized, etc.)
7. A person you know who is extremely *Open* to new experiences (creative, original, curious, etc.)
8. A person you know who is extremely *Closed* to new experiences (uncreative, conventional, uncurious, etc.)
9. A person you know who is extremely *Agreeable* (trusting, generous, good-natured, etc.)
10. A person you know who is extremely *Disagreeable* (suspicious, stingy, mean-spirited, etc.)

Sentences for Sentence Completion Task

1. Generally speaking, I am the type of person who is _____.
2. Generally speaking, I really wish I was less _____.
3. Most people think I ought to be the type of person who is _____.
4. One of *John's* best qualities is that he/she is _____.
5. If I had to use one word to describe *Mary*, I would say he/she is the type of person who is _____.
6. One of the things I don't like about *Bob* is that he/she is _____.
7. I really wish *Mom* could be more _____.
8. The type of people I like are usually _____.
9. Compared to other countries, people in America are _____.

10. A person my age is usually the type of person who is _____.
11. To be a person I admire, you must be the type of person who is _____.
12. One of *Dad's* worst qualities is that he is _____.

The italicized names were adjusted accordingly for each individual in the study. These names fit the 1st, 3rd, 5th, 7th, 9th, and 11th role titles listed above.