Agreement Between Informant and Self-Reported Personality in Depressed Older Adults: What are the Roles of Medical Illness and Cognitive Function?

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Abstract

In a sample of 77 dyads, involving depressed patients at least 50 years of age and their family or friends (informants), patient illness burden and cognitive decline were associated with self-informant rating discrepancies for facets of NEO-PI-R Openness and Extraversion. Informant judgments about Neuroticism and Conscientiousness were not associated with illness burden or cognitive function, underscoring the potential utility of risk-detection strategies that rely on informant-report in these two domains. Findings suggest the need for research on how patient illness severity and cognitive function affect how friends and family use or misuse information when making judgments about older depressed patients.

Keywords

Informant reporting; Personality; Medical illness; Cognitive function; Older adults

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The reliable judgment of others' personality characteristics is important for guiding social interactions in everyday settings (Funder, 1995; 2003; McAdams & Pals, 2006) and in research contexts where self-report data are unavailable (Useda et al., 2007) or of dubious reliability (Benedict et al., 2009; Duchek, Balota, Storandt, & Larsen, 2007; Siegler, Dawson, & Welsh, 1994). In clinical practice, informant ratings of personality are useful as a complement to self-report (Costa & Piedmont, 2003; Ganellen, 2007; Klein, 2003; Vazire & Mehl, 2008), but only if the ratings are reliable and discrepancies between self- and informant-report can be probed.

Research on the reliability of informant ratings of personality traits has expanded rapidly since the 1980s. Many studies have been conducted on undergraduates, non-patients, and fictitious patients (Costa & McCrae, 1988, 1992; Funder, 2003; Funder & Dobroth, 1987; Watson, 1989). The extent to which findings are applicable to older adults, clinical samples, and real patients—those at greatest risk for morbidity and mortality—is uncertain. In fact, correlations between self-report and informant-report traits have been lower in the few studies involving adult patients (Bagby et al., 1998; Ready & Clark, 2002; Yang et al., 1999), perhaps due to their higher levels of medical comorbidity or cognitive impairment.

Despite the potential value of informant reports, and the need to learn more about their reliability, few studies have either attempted to examine correlates of self- and informant-report discrepancies (Benedict et al., 2009; O'Rourke, Neufeld, Claxton, & Smith, 2010) or understand how discrepancies between self- and informant-report arise (McCrae, Stone, Fagan, & Costa, 1998). Differing interpretations of item wording and other mundane issues

have been shown to play a role (McCrae et al., 1998), but psychologically substantive considerations may also be important (O'Rourke et al., 2010), particularly in the context of age- or disease-associated changes in cognition and illness burden (Benedict et al., 2009).

Prior research suggests that patient illness burden or cognitive function may reduce self-informant agreement of personality ratings. In a study of female multiple sclerosis patients and their significant others, self-informant agreement varied across the course of the disease (Benedict et al., 2009). Studies of other chronic diseases have yielded similar findings: disease severity and the severity of cognitive impairment affect self-informant agreement for pain, depressive symptoms, and quality of life (Martire et al., 2006; McAvay, Raue, Brown, & Bruce, 2005; McDade-Montez, Watson, O'Hara, & Denburg, 2008; Vogel, Mortensen, Hasselbalch, Andersen, & Waldemar, 2006). Presumably disease severity and cognitive impairment compromise the quality of trait information available to the rater (Funder, 1995; 2003) or differentially influence the motives of patients and informants to report traits in a particular manner (Vazire, 2010).

Funder's (1995) Realistic Accuracy Model identifies the availability of "good" trait information as a key factor affecting self-informant agreement. We are aware of no research examining whether age-related conditions, such as increasing illness burden and decline of cognitive function, obscure information bearing on trait judgments. Physical illness burden may reduce vitality, goal-directedness, and capacity to explore wide-ranging interests, potentially suppressing information relevant to judgments of Extraversion (vitality, positive emotions), Conscientiousness (goal-directedness, dutiful perseverance), and Openness (exploration) traits. Cognitive decline can strongly influence lucidity and creativity, and may therefore decrease self-informant agreement for Openness. We hypothesized that medical illness burden will reduce self-informant agreement on Extraversion, Conscientiousness, and Openness, and that cognitive decline will reduce agreement concerning Openness. Using data collected in a study of personality and suicide ideation in older adults with mood disorders (Heisel et al., 2006), we tested these hypotheses in dyads comprised of treatment-seeking depressed patients and their relatives or close friends. Patients completed the self-report version of the NEO-PI-R (Costa & McCrae, 1992) and informants completed the informant-report version.

Method

Participants and Procedure

Recruitment details have been presented elsewhere (Heisel et al., 2006). Briefly, research coordinators screened the records of all patients 50 years of age and older admitted to one of three hospital's inpatient units or seen for an intake session in one hospital's ambulatory mental health clinic for older adults, in order to identify patients with a known or suspected mood disorder. Most of the patients (86%) were recruited from inpatient settings. Following approval from an attending physician or primary clinician, a member of the research team approached patients seeking their written informed consent to participate in a research study. Following the acquisition of data and reviews of medical records, consensus diagnostic conferences were held, where all relevant diagnostic data, including the patients' responses to the Structured Clinical Interview for the DSM-IV (SCID-IV; First, Spitzer, Gibbon, & Williams, 1996) were reviewed. Of the 134 patients with self-report NEO-PI-R data and a confirmed mood disorder (e.g., major depression, bipolar disorder, depressive disorder not otherwise specified; Heisel et al., 2006), 102 also had informant NEO-PI-R data. Analyses comparing patients with and without informant NEO-PI-R data revealed no differences in demographics or self-reported personality (all p's >.28). Of the patients with informant NEO-PI-R data, the analyses reported here were restricted to a sub-sample ($n = 77$) that met diagnostic criteria for major depression and had complete data on covariates; patients with

bipolar disorder and depressive disorder not otherwise specified were excluded, as were those with missing data on covariates. All measures were administered at the beginning of treatment, though personality ratings are often highly stable in response to therapy (Costa, Bagby, Herbst, & McCrae, 2005; De Fruyt, Van Leeuwen, Bagby, Rolland, & Rouillon, 2006; Pervin, 1994).

Measures

Personality—The 240-item NEO-PI-R (Costa & McCrae, 1992) was used to assess personality along five domain scales, measuring Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. All ratings were measured using a 0 (Strongly Disagree) to 4 (Strongly Agree) Likert-type response scale. Patients completed self-report forms (Form S) and informants provided both self-report (Form S) as well as informant reports of the patient's personality (Form R). Psychometric evidence for the measure has been robust, including when used in clinical and older, medically burdened samples (e.g., Bagby et al., 1998). In the present sample, alphas were strong for domains (.86 to .95) and good for facet scales (Mean of .70).

Cumulative Illness Burden—The Cumulative Illness Rating Scale (CIRS; Linn, Linn, & Gurel, 1968) is a physician-rated scale quantifying overall medical burden based on medical chart information. Physicians reviewed participants' medical and psychiatric charts, including intake history, physical examination, laboratory tests, and other health information, then rated disease severity across thirteen organ-system subscales: cardiac, vascular, respiratory, EENT, upper gastrointestinal, lower gastrointestinal, hepatic, renal, other genito-urinary, musculoskeletal/integument, neurologic, endocrine/metabolic, and psychiatric, though psychiatric symptoms were excluded in the present study. Burden to each of the 12 systems was rated as follows: 0 (no burden), 1 (mild burden), 2 (moderate burden), 3 (severe burden), and 4 (rare degree of extremely severe burden). CIRS scores have well-established validity, correlating with medical examiner ratings of illness burden at autopsy (Conwell et al., 1993).

Cognitive Impairment—Interviewers administered the 30-item Mini Mental Status Exam (MMSE; Folstein et al., 1975), which included items tapping general orientation, short-term memory, and general executive function. A cutoff of 23 is commonly used to indicate potential cognitive impairment (Crum, Anthony, Bassett, & Folstein, 1993).

Depression Severity—Interviewers completed the 24-item Hamilton Depression Rating Scale (HDRS; Williams, 1988) to assess depressive symptom severity over the previous week. The HDRS was used to adjust for severity of depression to ensure that discrepancies observed between self-reported and informant-reported personality were not due to depression severity.

Results

For all analyses, the False Discovery Rate for correlated tests (FDR; Benyamini & Yekutieli, 2001) was applied to p-values for each distinct set of test performed, controlling for Type I error rate for multiple tests with better power than Family Wise Error corrections. Covariates in all analyses included a relationship indicator variable (spouse, child, or other informant), dyad gender congruency, informant self-reported Neuroticism and Openness, patient age, and patient depression severity (HDRS).

Tables 1 and 2 show participant characteristics and self-informant rating discrepancies for personality traits. Two domains had statistically significant discrepancies, with patients

rating themselves as more open ($d = 0.53$) and agreeable ($d = 0.42$) than informants' ratings of them. These discrepancies were significant for all facets of Openness, except Fantasy, and two facets of Agreeableness, namely Compliance and Tendermindedness. For Neuroticism facets, patients rated themselves as significantly higher on Self-Consciousness and lower on Vulnerability than informants perceived them. One domain of Extraversion had a statistically significant discrepancy, with patients viewing themselves as having a higher level of Positive Emotions than did informants.

For facets with statistically significant self-informant rating discrepancies, Generalized Estimating Equations (GEE; Liang & Zeger, 1986) were used to examine whether patient illness burden (CIRS) and cognitive status (MMSE) scores were associated with discrepant personality ratings. GEE is similar to linear regression, but due to a lack of distributional assumptions is more robust in accommodating non-normal distributions, such as discrepancy scores. To gain a sense of the practical magnitude of the discrepancies, we also computed the degree of rating discrepancy associated with an MMSE difference between cognitive loss in potential cognitive impairment (MMSE = 23) and full functioning (MMSE = 30), scaling this difference in standard deviation (SD) units to create a standardized "effect size" metric. For the CIRS, we examined the discrepancy that would arise from a 4 point difference, which is equivalent to either the difference between no burden in an organ system (score of 0 for that system) and severe burden (score of 4; i.e., the difference between perfectly functioning renal/hepatic system and End Stage Renal Disease), or the difference between moving from mild (score of 1) to severe (score of 3) in two organ systems. We used these conceptual benchmarks for illustrative purposes.

Providing partial support for our hypotheses involving illness burden, CIRS scores were associated with self-informant discrepancies on Openness domain scores (B (SE) = .034 (.010), $p < .001$). Greater patient illness burden was associated with informants reporting lower levels of patient Openness than patients themselves reported. A four point increase in illness burden, the amount associated with very severe burden to a single organ system, was associated with informants underrating patient Openness by 0.31 SD relative to self-report. Findings were also significant for three facets of Openness. Compared to full functioning in an organ system, extremely severe burden was associated with informant-reported Openness to Aesthetics scores 0.30 SD lower (B (SE) = .056 (.017), $p = .001$), Openness to Feelings scores 0.27 lower (B (SE) = .040 (.018), $p = .03$), and Openness to Actions scores 0.32 SD lower (B (SE) = .047 (.017), $p = .01$) than self-reports. Hypotheses concerning the domains of Extraversion and Conscientiousness were not supported, though illness burden was associated with the Extraversion facet of Positive Emotions (B (SE) = .068 (.019), $p < .001$). The difference between no illness burden and extremely severe burden in an organ system was associated with informants rating patients as 0.41 SD lower on Positive Emotions than patients rated themselves.

Supporting our hypotheses involving patient cognitive function, MMSE scores were related to self-informant discrepancies for the Openness domain (B (SE) = .046 (.016), $p = .01$). Decreased cognitive function was associated with informants overrating patient Openness, relative to patient self-report. A seven point reduction in MMSE scores, the amount indicative of possible cognitive impairment, was associated with informants rating patients 0.72 SD higher on Openness than patients self-reported. Findings were significant for two facets of Openness. Compared to full cognitive functioning, potential cognitive impairment was associated with informant-reported Openness to Actions scores 1.40 SD higher (B (SE) = .081 (.026), $p = .01$), and Openness to Values scores 1.30 SD higher (B (SE) = .069 (.025), $p = .01$) than self-reported ratings. Finally, there were no other statistically significant relationships between personality rating discrepancies and illness burden, cognitive function, or any covariates.

Discussion

To our knowledge, this is the first study to examine whether discrepancies in self and informant-reported personality traits are associated with patient illness burden or cognitive status. Disease amounting to very severe burden in a single organ system was associated with informants over-reporting particular traits by approximately 0.3 SD relative to self-report. These discrepancies have substantial ramifications for individual patients, given that older adults commonly show non-trivial degrees of illness burden as a result of aging-relate chronic diseases.

Providing partial support for the hypotheses, illness burden was associated with self-informant discrepancies in Openness domain scores. Hypotheses about discrepancies in Extraversion and Conscientiousness domain scores were not supported, but there was an association between illness burden and an Extraversion facet, Positive Emotions. Illness burden was also associated with facet-level discrepancies for Openness to Aesthetics, Feelings, and Actions. These findings indicate that, in comparison to informants' perceptions, older depressed persons with greater illness burden perceived themselves as experiencing higher levels of positive emotion, more interested in aesthetics and inner emotional experiences, and more behaviorally flexible. These findings are consistent with research showing that observers overestimate the potential impact of chronic illness and disability upon patient quality of life (Martire et al., 2006). The lack of association between illness burden and Conscientiousness ratings suggests that informant beliefs about patient goal-directedness (achievement-striving, deliberation) or judgments of behaviors associated with Conscientiousness may be unaffected by patient illness burden.

As hypothesized, patient cognitive function was related to self-informant discrepancies for the Openness domain. Facet level analyses revealed that decreased cognitive function was associated with informants overreporting patient Openness to Actions and Values, relative to self-report. These traits involve behavioral and ideological flexibility, respectively (Costa & McCrae, 1992). Whereas informants may overestimate the impact of illness burden upon patients' internal emotional lives, they appear to underestimate the potential impact of cognitive decline upon patient behavioral and ideological flexibility.

Findings concerning the influence of patient illness burden and cognitive function upon observer ratings are consistent Funder's (1995) Realistic Accuracy Model, which indicates that the availability of trait information moderates self-informant agreement in personality ratings. Specifically, illness burden and deficits in cognitive function decrease the availability of trait information and were associated with more discrepant ratings. When adequate trait information is unavailable or uncertain, informants may rely upon stereotypes or personal assumptions about disease when making trait ratings, just as patients themselves overestimate the impact of disease when forecasting their future adjustment (Ubel, Loewenstein, Schwarz, & Smith, 2005).

Whereas cognitive theories of depression suggest that self-perceptions are unduly negative (Beck, 1976), the depressed older adults in our sample lacked a systematic negative bias in their personality ratings. Instead, they saw themselves as more open and more agreeable than they are perceived by informants. Furthermore, depression severity was not associated with self-informant agreement. Restriction of range may explain this lack of association because the sample was generally very depressed: the Mean (S.D) HDRS score was 28.2 (8.9). However, our findings are consistent with those of Ready and Clark (2002), who interpret the lack of association between depression severity and self-informant rating discrepancy in their study as a substantive rather than artifactual finding. Received wisdom

that depressive symptoms distort self-reported personality traits or observer judgment may thus need to be re-examined.

With respect to the study's clinical and public health implications, many public health and community-level interventions aimed at morbidity reduction assume that ordinary people can serve as gatekeepers or natural helpers by identifying at-risk individuals (Cowen, 1982; Levine, 1994; Pescosolido, 1993; Sarason, 1981). The task of risk-identification ought to be informed by what is known about risk. Personality is powerfully associated with a variety of health and social problems (Borghans, Duckworth, Heckman, & ter Weel, 2008; Chapman, Fiscella, Kawachi, & Duberstein, 2010; Krueger, Caspi, & Moffitt, 2000; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007) including in older adults (Chapman, Lyness, & Duberstein, 2007; Crowe, Andel, Pedersen, Fratiglioni, & Gatz, 2006; Duberstein et al., in press; Duberstein, Pálsson, Waern, & Skoog, 2008; Wilson, Bennett, Mendes de Leon, Bienias, Morris, & Evans, 2005). Observer judgments about personality represents a natural capacity with evolutionary significance, as humans may have evolved to perceive broad variations in phenotypic behavior that have implications for group living and survival (McAdams & Pals, 2006). It would be useful to see if this natural capacity to make judgments about personality could be exploited in public health initiatives. Strategies relying upon family and friends to identify at-risk individuals via personality judgments maybe more cost-effective if they focus on Neuroticism and Conscientiousness given their contribution to an array of public health threats and the apparent imperviousness of informant judgments in these two domains to external influences such as illness burden or cognitive function.

Clinically, it is not surprising that there are differences in perceived agreeableness between patients and their friends or family members, given the large literature on the interpersonal lives of depressed patients (Joiner & Coyne, 1999). Clearly, there is a need for treatments that explore or help patients understand these discrepancies. Perhaps more interesting are the discrepancies in positive emotions and openness. Clinical research on the implications of these discrepancies for patient functioning or treatment outcomes would be useful. In research contexts where self-report data are unavailable or of questionable reliability, factors reducing the reliability of informant reports, including patient illness burden and cognitive function, should be assessed when feasible in order to account for their moderating role in informant judgments of personality.

Our findings must be qualified by study limitations. First, we document cross-sectional associations, and make no causal claims. Future longitudinal studies might determine whether intra-individual change in illness burden and cognitive status over time drives increasing divergence in self-informant ratings. Second, our small regional sample involved depressed adults, primarily Caucasian, as young as 50, and with complete dyadic data; generalization to national samples, non-depressed older adults, other races/ethnicities, the old-old, or incomplete dyads, are unknown. Third, we did not examine the impact of specific diseases or cognitive syndromes on personality rating agreement; our goal was to gauge the aggregate effect of disease and cognitive function.

These limitations are balanced by several strengths, including an assessment of illness burden based on physician ratings of medically documented data, and not solely on patient self-report. Personality ratings were made using an extensively validated measure, with comprehensive data collected on specific facet-level traits not available from shorter personality inventories. Moreover, we exercised rigorous control over Type I error throughout by testing only domains and facets where significant discrepancies existed, and through judicious application of the FDR.

In conclusion, our findings suggest that informants may overestimate the impact of overt health problems on patient dispositions linked to well-being and quality of life, while underestimating the degree to which deficits in cognitive function reduce behavioral and ideological flexibility. Findings underscore the potential utility of risk-detection strategies that rely on informant-reports of Neuroticism and Conscientiousness, and suggest the need for further research on how age-related changes in medical illness burden and cognitive function affect the ways in which observers (friends, family members, health care providers) use or misuse information about the patient's condition when making decisions about older depressed patients.

Acknowledgments

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Table 1

Descriptive Statistics for Targets and Informants

Demographics	*M* (*SD*) or *n* (%)	*Min*	*Max*
Target Characteristics			
Gender, female	50 (65%)		
Age	60.3 (10.7)	50	87
Education, years	13.2 (2.6)	2	17
HDRS	28.2 (8.9)	10	44
CIRS, out of 48	6.3 (4.3)	0	20
MMSE, out of 30	27.7 (2.7)	17	30
Dyadic Characteristics			
Informant/Target Gender Match	42 (55%)		
Spousal Informant	22 (29%)		
Child Informant	21 (27%)		
Other Informant	34 (44%)		
Informant Characteristics			
Gender, female	53 (69%)		
Age	51.3 (13.9)	20	83
Education, years	16.3 (13.8)	3	17
Neuroticism	1.8 (0.5)	0.65	3.19
Extraversion	2.2 (0.4)	1.08	3.06
Openness	2.2 (0.4)	1.38	2.94
Agreeableness	2.6 (0.3)	1.94	3.56
Conscientiousness	2.4 (0.4)	1.63	3.44

Note. N = 77 pairs. HDRS = Hamilton Depression Rating Scale, CIRS = Cumulative Illness Rating Scale, MMSE = Mini Mental Status Exam.

Table 2

Self and Informant Ratings and Discrepancies Across NEO-PI R Domains and Facets

	Patient Self-Report		Informant Report		Self-Informant Mean Discrepancy			Self-Informant Correlation	
	Mean	S.D.	Mean	S.D.	Difference*	P	D*	R	ICC
Neuroticism	2.23	0.54	2.35	0.50	−0.13	0.040	−0.24	.47	.45
N1 Anxiety	2.51	0.70	2.67	0.68	−0.17	0.055	−0.24	.38	.36
N2 Angry Hostility	1.83	0.68	2.05	0.77	−0.22	0.017	−0.30	.39	.36
N3 Depression	2.64	0.82	2.76	0.68	−0.12	0.135	−0.16	.55	.54
N4 Self-Consciousness	**2.34**	**0.73**	**2.11**	**0.65**	**0.23**	**0.006**	**0.33**	**.43**	**.40**
N5 Impulsiveness	2.19	0.61	2.21	0.72	−0.02	0.779	−0.03	.51	.51
N6 Vulnerability	**1.87**	**0.63**	**2.32**	**0.76**	**−0.45**	**<.0001**	**−0.65**	**.43**	**.29**
Extraversion	2.04	0.41	1.94	0.47	0.10	0.050	0.22	.50	.48
E1 Warmth	2.72	0.61	2.53	0.79	0.19	0.035	0.26	.39	.36
E2 Gregarious-ness	1.89	0.71	2.08	0.79	−0.19	0.035	−0.25	.46	.44
E3 Assertiveness	1.68	0.65	1.66	0.69	0.02	0.789	0.03	.55	.55
E4 Activity	1.96	0.58	1.76	0.59	0.20	0.010	0.34	.32	.29
E5 Excitement Seeking	1.87	0.63	1.81	0.66	0.07	0.319	0.11	.57	.56
E6 Positive Emotions	**2.10**	**0.61**	**1.79**	**0.66**	**0.31**	**<.001**	**0.49**	**.38**	**.30**
Openness	**2.31**	**0.45**	**2.08**	**0.43**	**0.23**	**<.0001**	**0.53**	**.62**	**.52**
O1 Fantasy	2.15	0.70	2.11	0.59	0.05	0.585	0.07	.32	.32
O2 Aesthetics	**2.52**	**0.68**	**2.05**	**0.74**	**0.47**	**<.001**	**0.66**	**.65**	**.49**
O3 Feelings	**2.61**	**0.58**	**2.39**	**0.57**	**0.22**	**0.003**	**0.38**	**.35**	**.31**
O4 Actions	**1.83**	**0.58**	**1.64**	**0.52**	**0.19**	**0.006**	**0.35**	**.36**	**.32**
O5 Ideas	**2.30**	**0.78**	**2.05**	**0.77**	**0.24**	**0.002**	**0.31**	**.60**	**.57**
O6 Values	**2.43**	**0.50**	**2.22**	**0.53**	**0.21**	**0.002**	**0.41**	**.35**	**.30**
Agreeableness	**2.64**	**0.40**	**2.43**	**0.57**	**0.21**	**0.003**	**0.42**	**.26**	**.21**
A1 Trust	2.45	0.65	2.29	0.74	0.16	0.084	0.23	.32	.30

	Patient Self-Report		Informant Report		Self-Informant Mean Discrepancy			Self-Informant Correlation	
	Mean	S.D.	Mean	S.D.	Difference*	P	D*	R	ICC
A2 Straight-forwardness	2.61	0.56	2.40	0.81	0.21	0.060	0.30	.00	.01
A3 Altruism	2.99	0.45	2.84	0.68	0.15	0.080	0.26	.16	.13
A4 Compliance	**2.38**	**0.77**	**2.13**	**0.82**	**0.25**	**0.004**	**0.32**	**.52**	**.48**
A5 Modesty	2.64	0.61	2.46	0.74	0.19	0.040	0.27	.32	.29
A6 Tender-mindedness	**2.75**	**0.44**	**2.48**	**0.51**	**0.27**	**<.001**	**0.57**	**.30**	**.21**
Conscientiousness	2.31	0.43	2.16	0.61	0.15	0.041	0.28	.26	.23
C1 Competence	2.47	0.57	2.38	0.70	0.09	0.358	0.14	.38	.16
C2 Order	2.18	0.56	2.00	0.65	0.18	0.042	0.29	.20	.17
C3 Dutifulness	2.74	0.48	2.52	0.77	0.22	0.012	0.34	.31	.25
C4 Achievement Striving	2.17	0.54	2.06	0.68	0.11	0.222	0.17	.22	.22
C5 Self-Discipline	2.25	0.72	2.02	0.89	0.24	0.025	0.30	.33	.30
C6 Deliberation	2.06	0.58	1.99	0.68	0.07	0.374	0.11	.41	.40

Note. $N = 77$ pairs.

*
positive difference indicates that Self Report is higher than Informant Report, while negative difference indicates the reverse.

Bolded rows indicate facets which are significant via the False Discovery Rate (.0068 for Neuroticism facets; .0034 for Extraversion facets; .0170 for Openness facets; .0068 for Agreeableness facets; .0034 for Conscientiousness facets). r = Pearson correlation coefficient, ICC = Intra Class Correlation coefficient