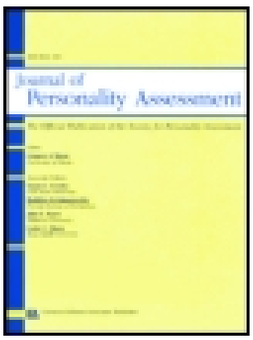

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Journal of Personality Assessment

ISSN: 0022-3891 (Print) 1532-7752 (Online) Journal homepage: https://www.tandfonline.com/loi/hjpa20

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To cite this article: Reinout E. de Vries , Kibeom Lee & Michael C. Ashton (2008) The Dutch HEXACO Personality Inventory: Psychometric Properties, Self–Other Agreement, and Relations With Psychopathy Among Low and High Acquaintanceship Dyads, Journal of Personality Assessment, 90:2, 142-151, DOI: 10.1080/00223890701845195

To link to this article: https://doi.org/10.1080/00223890701845195

Journal of Personality Assessment, *90*(2), 142–151, 2008

ISSN: 0022-3891 print / 1532-7752 online
DOI: 10.1080/00223890701845195

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ARTICLES

The Dutch HEXACO Personality Inventory: Psychometric Properties, Self–Other Agreement, and Relations With Psychopathy Among Low and High Acquaintanceship Dyads

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The HEXACO model (Lee & Ashton, 2004, 2006) of personality structure is based on 6 dimensions that have been recovered in lexical studies of personality in various languages. In this study, we examined a Dutch version of the HEXACO Personality Inventory (HEXACO–PI; Lee & Ashton, 2004) and found it to have satisfactory psychometric properties. Additionally, we examined the level of self–other agreement for the HEXACO–PI variables and the relation of HEXACO–PI Honesty-Humility with the Self-Report Psychopathy Scale (Williams, Paulhus, & Hare, 2007) at varying levels of self–other acquaintanceship. Self–other agreement was found to be high, especially among dyads with high levels of acquaintanceship. Self-reported and other-reported Honesty-Humility and Emotionality were the strongest predictors of psychopathy. The relation between other-reported Honesty-Humility and self-reported psychopathy was near zero for dyads with low levels of acquaintanceship but was moderately strong for dyads with high levels of acquaintanceship.

Recently, there has been a debate about the number and identity of the dimensions that can best capture the domain of personality variation (Ashton, Lee, Perugini et al., 2004; De Raad & Peabody, 2005; Peabody & De Raad, 2002; Saucier & Goldberg, 2003). One recently proposed model is the cross-language six-dimensional structure (Ashton & Lee, 2001), subsequently labeled the HEXACO framework (Lee & Ashton, 2004). This model posits six broadly independent personality dimensions that spell out the HEXACO abbreviation: Honesty-Humility (H), Emotionality (E), eXtraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O). The HEXACO model is based on the finding that a similar set of six personality dimensions has been found in lexical studies of personality structure in diverse languages (Ashton, Lee, & Goldberg, 2004; Ashton, Lee, Perugini, et al., 2004). This six-factor space has been found to accommodate several characteristics that are not well assimilated within the Big Five model (Lee, Ogunfowora, & Ashton, 2005).

In this study, we first investigated the psychometric properties of the Dutch HEXACO Personality Inventory (HEXACO–PI; Lee & Ashton, 2004, 2006). Second, we tested the convergent validity of the HEXACO–PI scales by investigating—using peer reports from people having different levels of acquaintanceship with each other—the level of self–other agreement and the relations of the HEXACO–PI scales with psychopathy.

Received July 19, 2006; Revised February 19, 2007.
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THE HEXACO MODEL AND THE HEXACO–PI

There are some notable similarities and differences between the Big Five and HEXACO models of personality structure. The two frameworks do not differ substantially with respect to the content of three of the dimensions, specifically, Extraversion, Conscientiousness, and Openness to Experience. However, along with the additional dimension named Honesty-Humility, there are some important shifts in the content of the two remaining Big Five dimensions. Compared with the Big Five Agreeableness and Emotional Stability dimensions, the positive pole of the HEXACO Agreeableness dimension is rotated away from the positive pole of Big Five Agreeableness toward the positive pole of the Big Five Emotional Stability dimension. The content of the HEXACO Agreeableness dimension is concomitantly shifted, with content associated with "irritability" and "even temper" now occupying respectively the negative and positive pole of HEXACO Agreeableness, whereas in the Big Five model, this content is associated with respectively the negative and positive pole of Emotional Stability. In a similar way, the positive pole of HEXACO Emotionality is rotated away from the negative pole of Big Five Emotional Stability toward the positive pole of Big Five Agreeableness. This shift in rotational position also marks a shift in content; content associated with "sensitivity" and "sentimentality," which has been mainly associated with the positive pole of Big Five Agreeableness, now loads on HEXACO Emotionality. In short, Agreeableness and Emotionality in the HEXACO model are not—like Extraversion, Conscientiousness, and Openness to Experience—replicas of their respective Big Five counterparts; instead, they can be largely understood as rotational variants of Big Five Agreeableness and Emotional Stability.

The remaining dimension of the HEXACO model is the Honesty-Humility factor, which in lexical studies is defined by adjectives such as *sincere, honest, fair, modest,* and *unassuming* versus *sly, deceitful, conceited, pretentious,* and *greedy.* The Honesty-Humility factor has been recovered, along with the other five HEXACO dimensions, in six-factor solutions of Indo-European languages (e.g., English, Dutch, French, German, Italian, and Polish) and non-Indo-European languages (e.g., Hungarian and Korean; see Ashton, Lee, & Goldberg, 2004; Ashton, Lee, Perugini, et al., 2004). The previously mentioned studies have not shown any consistent solutions containing seven or more factors, a result suggesting that six factors—not five or seven—provide the optimal representation of personality.

The HEXACO–PI (Lee & Ashton, 2004) is an operationalization of the HEXACO model. An earlier version of the HEXACO–PI, which was translated from English into French, Korean, and Dutch (Boies, Yoo, Ebacher, Lee, & Ashton, 2004; De Vries, Roe, Taillieu, & Nelissen, 2004; Lee, Ashton, & De Vries, 2005), contained 108 items divided equally among six dimensions. In each of the Australian, English-Canadian, French-Canadian, Dutch, and Korean samples investigated (Boies et al., 2004; Lee, Ashton, & De Vries, 2005), the psychometric properties of the instrument were more than adequate, with means near the midpoint of the response scales, high internal-consistency reliabilities, and low intercorrelations between the scales. In 2004, a more extensive version of the HEXACO–PI became available (Lee & Ashton, 2004, 2006). Each of the HEXACO dimensions of this version of the HEXACO–PI is defined by four facet-level scales, each of which in turn is measured by eight questionnaire items (see Lee & Ashton, 2004, for definitions of those 24 facets). Until now, the psychometric properties of this long form of the HEXACO–PI have only been reported for its English-language version. At the factor-scale level, the psychometric properties of the English full HEXACO–PI have been shown to be highly favorable, with internal-consistency reliabilities ranging from .87 for Emotionality in an adult sample to .91 for Honesty-Humility in a student sample (Lee & Ashton, 2006). The intercorrelations of the factor-level scales were generally low, with only Honesty-Humility and Agreeableness having a correlation above .30 (.32 and .37 in the student and adult samples, respectively) in Lee and Ashton's (2006) investigation.

Self–Other Agreement

An important question with respect to personality models in general and the HEXACO model in particular is whether self-ratings and other ratings converge. The issue of convergence between self-ratings and other ratings on personality traits, or self–other agreement, plays a crucial role in personality theory. Without evaluating the extent of self–other agreement, it is impossible to tell who "owns" the definition of one's personality (Hofstee, 1994): a person himself or herself, or his or her partner, family, friends, or other acquaintances. Worse, without a reasonably high level of self–other agreement, it is perhaps doubtful whether personality traits as a set of coherent and stable behaviors actually exist. Consequently, the quest to establish the level of self–other agreement is of considerable importance to the field of personality psychology.

It is thus unsurprising that many researchers have investigated self–other agreement. Because the Big Five has been the most widely accepted structural model of personality, most of the studies have looked at self–other agreement on instruments designed to measure the Big Five (John & Robins, 1993; McCrae & Costa, 1987; Paulhus & Reynolds, 1995; Watson, Hubbard, & Wiese, 2000). Generally, these studies confirm the presence of a substantial level of self–other agreement, usually well above .40 for closely acquainted persons. For instance, Watson et al. (2000) found mean self–other correlations ranging from .42 for Agreeableness to .53 for Openness to Experience for the Big Five factors in a study of friend pairs, dating couples, and married couples.

However, if a sample includes a great number of dyads that consist of casual acquaintances or strangers, the size of these correlations may be limited. In a number of studies, it has been shown that higher levels of self–other agreement are found at increasing levels of acquaintanceship. The finding that the level of self–other agreement is dependent on the level of acquaintanceship has been dubbed the *acquaintanceship effect* (Funder & Colvin, 1988). The highest self–other agreement is generally found for spouses, with self–other agreement levels reaching the .60 levels (Watson et al., 2000), whereas self–other agreement among strangers is weak or even nonexistent (Funder & Colvin, 1988).

Among the major personality dimensions, Honesty-Humility may be especially susceptible to acquaintanceship effects. It is not surprising that researchers have tried to find out whether people can accurately detect dishonest behaviors, such as lying (DePaulo et al., 2003; Frank & Ekman, 2004). These behaviors, if they are to have the desired effect, will not be visible to casual acquaintances. However, these behaviors are more likely to be detected at high acquaintanceship levels, such as with partners or family. One of the reasons for this may lie in the "strength" of the situational demands. When people are relatively unacquainted or when they usually meet in "strong" situations, that is, situations that determine the types of behaviors that are allowed, the frequency and observability of behaviors associated with honesty and humility are particularly low. Even friends may have a harder time judging honesty, both because friends tend to associate in settings in which expected behaviors are well defined and also because people may be somewhat less dishonest toward a friend than toward a relative stranger. However, in a "high-stakes" relationship such as a marriage, dishonest behaviors are harder to conceal because a person will see his or her partner in both strong and weak situations and because a person is more likely to observe his or her partner during interactions with third parties. Consequently, our first hypothesis (H) is as follows:

H1: At high levels of acquaintanceship, self–other agreement on Honesty-Humility is stronger than at low levels of acquaintanceship.

Psychopathy

Another important theoretical and practical question is that of whether the HEXACO model, and especially HEXACO–PI Honesty-Humility, is able to predict outcomes or behaviors that are not well predicted by Big Five measures. Several studies have investigated this question including two that have examined work-related behaviors and two others that have examined more general deviant behaviors. Lee, Ashton, and Shin (2005), using self-ratings on adjective marker scales, showed that Honesty-Humility was able to explain a significant amount of variance beyond the Big Five in predicting antisocial behaviors directed

at individuals and toward organizations. Lee, Ashton, and De Vries (2005), who used questionnaire scales to measure the Big Five and the HEXACO dimensions in four participant samples, found that the HEXACO factors explained a significantly greater amount of variance in workplace delinquency and that this predictive superiority was the result of the inclusion of Honesty-Humility. Also, a study (Ashton, Lee, & Son, 2000) that investigated the relationship of HEXACO adjectives marker scales with Machiavellianism, primary psychopathy, and social adroitness showed that Honesty-Humility had significant negative relations with all of the three personality traits (all rs $<-.40$), whereas none of the other HEXACO adjectives marker scales shared a substantial relation with these traits. Finally, in a study (Lee & Ashton, 2005) using the HEXACO–PI, Honesty-Humility had strong significant relations with Primary Psychopathy ($r = -.72$), Machiavellianism ($r = -.57$), and Narcissism ($r = -.53$), whereas none of the Big Five variables consistently showed strong relations with these three personality traits. The observed pattern of relations suggests that the HEXACO model through the addition of Honesty-Humility may be better able to capture important variance associated with psychopathy than is the Big Five model.

The previously mentioned results suggest that Honesty-Humility is strongly (and negatively) associated with psychopathy and related variables. However, none of these studies has investigated whether the relations between Honesty-Humility and psychopathy can be generalized across observers or whether those relations are instead attributable only to the use of self-reports on both variables. Consequently, our second main hypothesis is as follows:

H2: Both self-reported and other-reported Honesty-Humility are negatively related to self-reported psychopathy.

As argued in the self–other agreement section, the level of acquaintanceship may play an important role in establishing the amount of convergence between self-reports and other reports. As the level of acquaintanceship is low, people are less likely to be able to report accurately on a target person's Honesty-Humility. Therefore, at low levels of acquaintanceship, other reported Honesty-Humility is unlikely to be related to self-reported psychopathy. Conversely, at high levels of acquaintanceship, people are more likely to report accurately on another person's Honesty-Humility. Consequently, we expect that at higher levels of acquaintanceship, other reports of Honesty-Humility are likely to be more strongly related to self-reports of psychopathy. The resulting third hypothesis is as follows:

H3: At high levels of acquaintanceship, the relation between other-reported Honesty-Humility and self-reported psychopathy is stronger than at low levels of acquaintanceship.

Previous studies that have investigated the HEXACO factors and psychopathy (Ashton et al., 2000; Lee & Ashton, 2004, 2005) have focused on one of the two broad aspects of psychopathy, namely, on the component of Primary Psychopathy (Harpur, Hare, & Hakstian, 1989; Levenson, Kiehl, & Fitzpatrick, 1995). Primary Psychopathy is associated with elements of self-entitlement and exploitation of others, and thus it was not surprising that Honesty-Humility was found to be by far the strongest correlate of Primary Psychopathy among the HEXACO factors. In this study, however, we examined a broader, multidimensional psychopathy construct as measured by the Self-Report Psychopathy Scale–III (SRP–III; Williams, Nathanson, & Paulhus, 2003). The SRP–III is a relatively new measure that is based on a recently proposed four-factor model of psychopathy (Hare, 2003; Hare & Neumann, 2005; Hill, Neumann, & Rogers, 2004; Vitacco, Neumann, Caldwell, Leistico, & Van Rybroek, 2006; Vitacco, Neumann, & Jackson, 2005), which includes components of Antisocial Behavior, Erratic Lifestyle, Interpersonal Manipulation, and Callous Affect (Williams, Paulhus, & Hare, 2007). According to Neumann, Vitacco, Hare, and Wupperman (2005), the proposed four-factor structure of psychopathy is more consistent with the traditional clinical conceptualization of psychopathy in terms of interpersonal-affective and behavioral-antisocial features than are models that exclude one or more of the four components. The diversified content within this broader conceptualization of psychopathy leads to the suggestion that other factors in the HEXACO model, beyond Honesty-Humility, may play a role in predicting this construct. In a study by Nathanson, Paulhus, and Williams (2006), SRP–III correlated significantly (and negatively) with self-reports on Big Five Agreeableness ($r = -.46$) and Conscientiousness ($r = -.23$), but did not correlate significantly with Extraversion, Emotional Stability, or Openness to Experience. These results might suggest some role for HEXACO Agreeableness in predicting psychopathy. Recall, however, that the HEXACO Agreeableness and Emotionality factors differ in some respects from Big Five Agreeableness and (low) Emotional Stability. Of particular relevance for psychopathy, the HEXACO Emotionality facets of sentimentality and fearfulness—which are generally not subsumed within measures of Big Five (low) Emotional Stability—are expected to be strongly and negatively related to Callous Affect and Erratic Lifestyle, respectively. In addition, the prudence facet of HEXACO–PI Conscientiousness is expected to be negatively related to Erratic Lifestyle. Therefore, on the basis of these considerations of content and the findings of Nathanson et al. (2006), we hypothesize that HEXACO–PI Agreeableness, Conscientiousness, and Emotionality will be associated with SRP–III psychopathy:

H4: Both self-reported and other-reported Agreeableness are negatively related to self-reported psychopathy.

H5: Both self- and other-reported Conscientiousness are negatively related to self-reported psychopathy.

H6: Both self-reported and other-reported Emotionality are negatively related to self-reported psychopathy.

METHOD

Sample and Procedure

The data of this study are from two separate samples. The first sample consists of 349 Dutch psychology and educational science students (82% female), with a mean age of 20.9 years ($SD = 4.3$), who participated as part of an undergraduate course requirement. The second sample is a Dutch community sample consisting of 289 respondents (53.3% women), with a mean age of 31.0 years ($SD = 13.0$). To obtain the second sample, each of five student assistants was asked to obtain an approximately equal number of participant dyads of each of the following five acquaintanceship levels: casual acquaintances, coworkers,

friends, family, and spouses (or other romantic partners). In the first instance, the student assistants contacted people through their personal networks. Using a "snowballing" procedure, people in their network were asked to nominate others for the study who were consecutively approached personally by the student assistant themselves. In this way, each of the student assistants secured the participation of approximately 30 dyads.

The 289 respondents of the community sample represented a wide range of educational backgrounds: 35.3% had a university degree or had fulfilled postacademic training, 28.7% had done higher level vocational training, 14.7% had fulfilled "medium"-level vocational training, and 15.1% had fulfilled secondary or lower levels of education (6.3% had marked "other" forms of education). Among the 289 respondents, 248 were part of a complete pair or dyad (i.e., 124 dyads). Of these 248 respondents, 6 dyads or 12 respondents (4.8%) disagreed on the type of relationship involved. Three of them involved mismatches between casual acquaintances and work relationships, two of them involved mismatches between casual acquaintances and friends, and one involved a mismatch between a friend and family (cousin). In these cases, when matching other ratings with self-ratings, we used the relationship definition from the person who provided the self-rating. Five of the respondents did provide self-report data but did not provide complete or adequate other-report data (long rows of the same number). The other-report data from these respondents were removed from the analysis. Consequently, in total, 243 respondents (119 dyads + 5 "single" respondents) provided complete self-data and other data, of whom there were 37 casual acquaintances, 28 work acquaintances, 51 friends, 79 family members, and 48 (romantic or married) partners.

Respondents from the student sample and the community sample were asked to fill out a computerized version of the self-report HEXACO–PI through the Internet at their own convenience. Apart from the HEXACO–PI, the community sample also filled out two additional questionnaires through the Internet, specifically, the SRP–III (always filled out after the self-report HEXACO–PI) and the other report form of the HEXACO–PI (always filled out at the end). In return for participating, all student and community sample respondents obtained feedback about their own HEXACO personality profile.

Measures

HEXACO–PI. The HEXACO–PI is a questionnaire operationalization of the six-dimensional HEXACO personality model (Lee & Ashton, 2004, 2006). It includes 24 facet scales that define the six HEXACO factors (i.e., with four facet scales assigned univocally to each factor). All items use a 5-point response scale. The psychometric properties of the English-language HEXACO–PI scales are reported in Lee and Ashton (2004, 2006). To construct a Dutch self-report version, the English self-report version was translated and back translated by R. E. de Vries and a professional English translator. To obtain a Dutch peer report version, we used the Dutch translation of the English peer report HEXACO–PI in which items have been converted to the third-person singular. An earlier 108-item Dutch self-report version of the HEXACO–PI, with adequate psychometric properties, has been reported in De Vries et al. (2004), Lee, Ashton, and De Vries (2005), and Ashton et al. (2006). This is the first report of the psychometric properties of the full Dutch HEXACO–PI.

SRP–III. To measure psychopathy, we used the SRP–III scale (Nathanson et al., 2006; Paulhus, Hemphill, & Hare, in press; Williams et al., 2007). The SRP–III is based on the Psychopathy Checklist–Revised (PCL–R; Hare, 2003), which many regard as the gold standard of clinical psychopathy assessment (Cooke, Kosson, & Michie, 2001; Nathanson et al. 2006). A precursor of the SRP–III, the SRP–II (Hare, 1990; Williams & Paulhus, 2004), has been found to be correlated .54 with PCL–R among a sample of 100 offenders (Hare, 1991), and, respectively, .55 (among females) and .62 (among males) with the screening version of the PCL–R in a noncriminal sample (Forth, Brown, Hart, & Hare, 1996). Furthermore, Widiger et al. (1996) have reported significant moderate correlations between the SRP–II and the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; American Psychiatric Association, 1994) criteria for antisocial personality disorder, the International Classification of Diseases–10 criteria for dissocial personality disorder (World Health Organization, 1990), and the 10-item Psychopathy Criteria Set (Hare, Hart, & Harpur, 1991); these correlations were equal to those observed for the Antisocial Personality Disorder scale of the widely used Millon Clinical Multiaxial Inventory–Version II (MCMI–II; Millon, 1987). To construct a Dutch version of the SRP–III, all items were translated and back translated. Any disagreement about the final Dutch items was resolved through discussion. As administered in this study, the Dutch version of the SRP–III contained 41 items.[1] The reliability of the overall Psychopathy scale was .88, a value comparable to that found by Nathanson et al. (2006) and Williams et al. (2003).

RESULTS

The factor-level scales of the self-reported Dutch HEXACO–PI showed satisfactory psychometric properties in the student and community samples. In the combined sample, all of the factor-level scales had internal-consistency reliabilities above .85, and none of the correlations among those scales exceeded .30. In Table 1 the reliabilities, descriptive statistics, and factor loadings of the 24 HEXACO–PI facets are reported. A principal components analysis (PCA) on the 24 facets revealed a clear break after the sixth factor, with the first 10 unrotated eigenvalues being 3.86, 3.24, 2.53, 2.10, 2.00, 1.66, 0.90, 0.72, 0.71, and 0.67. The varimax rotated factor loading matrix of the first six principal components showed high primary loadings for each facet on its intended factor (all above .50) and relatively low secondary loadings (all below .40).

The psychometric properties of the other-report HEXACO–PI are in many respects similar to the results from the self-report HEXACO–PI. On the factor-scale level, the other-report data showed a somewhat higher correlation (.48) between Agreeableness and Honesty-Humility. The PCA of the other-reported facet-level scales again showed a pattern of high primary and

[1] One item was added to the Erratic Lifestyle subscale because one of the original English items showed very low factor loadings on the Erratic Lifestyle factor in the Williams et al. (2003) study. We retained the Dutch translation of the original item but added a somewhat differently worded item to better capture the essence of the Erratic Lifestyle concept. Consequently, the Erratic Lifestyle subscale and the full Psychopathy scale contained 11 and 41 items, respectively.

TABLE 1.—Psychometric properties of the Dutch HEXACO–Personality Inventory facet- and factor-level scales and varimax rotated principal component loadings of the facets (self-reports) in the combined student and community sample.

	α	*M*	*SD*	H	E	X	A	C	O	h^2
Honesty-Humility (H)	.92	3.64	.49							
Sincerity	.79	3.54	.57	***.81***	−.08	−.09	.00	.10	−.02	.68
Fairness	.81	3.76	.66	***.73***	.12	.04	.15	.23	.02	.62
Greed avoidance	.87	3.39	.71	***.82***	−.09	−.14	.11	−.08	.07	.72
Modesty	.83	3.88	.55	***.70***	.23	.01	.21	−.02	−.22	.64
Emotionality (E)	.88	3.27	.48							
Fearfulness	.77	2.79	.60	.13	***.58***	−.25	−.01	.17	−.18	.48
Anxiety	.82	3.23	.69	−.20	***.77***	−.24	−.19	−.03	.00	.73
Dependence	.84	3.47	.66	.11	***.72***	.18	−.04	−.05	−.09	.58
Sentimentality	.79	3.58	.62	.05	***.80***	.17	−.03	.01	.11	.68
Extraversion (X)	.91	3.34	.47							
Expressiveness	.79	3.04	.60	−.11	.20	***.68***	−.29	−.12	.21	.66
Social boldness	.83	3.18	.67	−.07	−.37	***.64***	−.17	.16	.24	.66
Sociability	.81	3.56	.62	−.21	.33	***.70***	.03	−.10	−.10	.66
Liveliness	.87	3.57	.64	.09	−.19	***.80***	.14	.12	.03	.72
Agreeableness (A)	.90	3.01	.45							
Forgiveness	.85	2.73	.66	.17	−.10	.24	***.61***	−.18	.18	.53
Gentleness	.76	3.07	.54	.07	.10	−.08	***.82***	.08	−.01	.70
Flexibility	.69	2.89	.53	.11	−.04	−.14	***.72***	.00	−.16	.58
Patience	.83	3.33	.62	.08	−.21	−.06	***.81***	.02	.10	.72
Conscientiousness (C)	.88	3.32	.44							
Organization	.84	3.19	.78	.16	−.06	−.02	−.02	***.71***	−.17	.56
Diligence	.80	3.44	.58	.05	−.05	.32	−.06	***.71***	.06	.62
Perfectionism	.79	3.46	.60	−.07	.24	−.03	−.07	***.72***	.16	.61
Prudence	.79	3.17	.57	.10	−.10	−.35	.25	***.59***	−.06	.56
Openness to Experience (O)	.90	3.27	.52							
Aesthetic appreciation	.85	3.33	.77	.11	.17	−.02	.09	.07	***.82***	.73
Inquisitiveness	.78	3.25	.69	−.05	−.21	−.04	.08	.13	***.70***	.56
Creativity	.78	3.28	.65	−.07	−.05	.27	−.01	−.03	***.77***	.67
Unconventionality	.67	3.21	.51	−.08	−.05	.07	−.12	−.19	***.78***	.67
% Explained variance				10.89	11.34	10.87	10.75	8.94	11.30	64.09

Note. $N = 638$. Factor loadings of the four facet-level scales that a priori belonged to one of the six HEXACO domains are printed in italic; factor loadings > .50 are printed in bold.

low secondary factor loadings except for the expressiveness facet, which loaded slightly more strongly on the Agreeableness factor than on the Extraversion factor. Table 2 shows these factor loadings, together with the reliabilities and descriptive statistics of the HEXACO–PI factor- and facet-level scales.

To establish the level of self–other agreement, we calculated the zero order correlations between the HEXACO–PI self-report and other-report factor-level scales. However, first of all, to determine the extent to which such self–other correlations were influenced by actual similarity between dyads, we examined the intraclass correlations of the dyads' self-reports (see Watson et al., 2000). The intraclass correlations were .08 for Honesty-Humility, .23 for Emotionality, .11 for Extraversion, .26 for Agreeableness, .10 for Conscientiousness, and .34 for Openness to Experience; all except the last value are below the .30 level of nonindependence suggested by Kenny (1995). Second, to control for both assumed and actual similarity, we also computed partial self–other correlations controlling for self-reports of the other member of the dyad. These partial correlations remained very similar to the self–other correlations reported in Table 3; the largest differences were observed for the correlations involving Agreeableness and Openness to Experience, which were .04 and .06 units lower than the corresponding zero-order correlations, respectively. These results suggest that observed self–other agreement is not a spurious result of the joint effects of actual and assumed similarity within dyads.

As is shown in Table 3, all of the self–other convergent correlations exceeded .40, whereas none of the discriminant correlations reached an absolute value of .30. The lowest convergent correlation was observed for Honesty-Humility (.42), and the highest was observed for Emotionality (.67). After conversion to z scores using Fisher's r-to-z transformation for within sample correlated coefficients (Meng, Rosenthal, & Rubin, 1992), the difference between the highest absolute discriminant correlation ($r = .26$) and the lowest convergent correlation ($r = .42$) was found to be significant ($z = 1.90$, $p = .03$, one-tailed).

The somewhat lower level of self–other agreement for Honesty-Humility may be better understood when taking the level of acquaintanceship into account. To inspect the influence of acquaintanceship, we correlated self-report and other-report scores on the HEXACO–PI factor scales at each of the five acquaintanceship levels (specifically, casual acquaintances, work relationships, friends, family members, and spouses or other romantic partners). The results, shown in Table 4, indicate that more intimate relationships (i.e., family members or partners) are characterized by much stronger correlations between self-reports and other-reports than are less intimate relationships (i.e., casual acquaintances and coworkers). Self–other convergent correlations tended to be low for the less intimate relationships, with only a few exceptions; for example, Emotionality showed significant self–other convergent correlations for casual acquaintances, as did Conscientiousness

TABLE 2.—Psychometric properties of the Dutch HEXACO–Personality Inventory facet- and factor-level scales and varimax rotated principal component loadings of the facets (other reports) in the community sample.

	α	M	SD	H	E	X	A	C	O	h^2
Honesty-Humility (H)	.90	3.70	.49							
Sincerity	.79	3.68	.57	***.85***	−.05	−.06	.06	.05	.06	.74
Fairness	.81	3.81	.67	***.62***	.23	−.03	.22	.29	−.02	.57
Greed avoidance	.86	3.43	.71	***.76***	.04	−.11	.29	.02	.12	.69
Modesty	.83	3.89	.59	***.59***	.16	.01	.49	.09	−.13	.64
Emotionality (E)	.89	3.15	.48							
Fearfulness	.80	2.86	.64	−.08	***.64***	−.35	−.06	.17	−.10	.58
Anxiety	.75	3.02	.58	.00	***.75***	−.28	−.21	.02	.08	.70
Dependence	.85	3.40	.61	.12	***.80***	.18	.06	−.09	.07	.71
Sentimentality	.84	3.31	.64	.17	***.83***	.15	.12	.05	.00	.76
Extraversion (X)	.86	3.27	.44							
Expressiveness	.78	2.89	.61	−.11	.29	***.50***	**−.51**	−.28	.15	.70
Social Boldness	.82	3.25	.64	−.06	−.13	***.72***	−.10	.15	.18	.60
Sociability	.76	3.39	.59	−.27	.32	***.71***	.05	−.15	−.04	.71
Liveliness	.83	3.56	.57	.04	−.19	***.83***	.13	.03	.05	.74
Agreeableness (A)	.90	3.08	.49							
Forgiveness	.86	2.82	.62	.08	−.04	.12	***.60***	−.14	.18	.44
Gentleness	.84	3.16	.64	.18	.06	−.01	***.81***	.10	.02	.70
Flexibility	.76	3.00	.57	.19	.11	−.02	***.80***	−.05	−.12	.70
Patience	.82	3.34	.61	.15	−.17	−.04	***.83***	.16	.09	.77
Conscientiousness (C)	.92	3.36	.56							
Organization	.91	3.26	.86	.07	.14	.03	.05	***.76***	−.12	.61
Diligence	.85	3.49	.66	.16	−.09	.35	−.11	***.74***	.09	.72
Perfectionism	.88	3.38	.74	.02	.07	−.07	−.09	***.81***	.18	.71
Prudence	.79	3.30	.60	.15	−.07	−.22	.33	***.74***	−.03	.73
Openness to Experience (O)	.90	3.03	.53							
Aesthetic appreciation	.89	3.10	.86	.10	.32	−.05	.18	.14	***.77***	.76
Inquisitiveness	.85	3.08	.74	−.08	−.15	−.14	.16	.39	***.68***	.69
Creativity	.77	3.08	.64	.04	.07	.28	−.03	−.07	***.74***	.63
Unconventionality	.73	2.88	.53	.04	−.11	.13	−.10	−.13	***.80***	.69
% Explained Variance				9.72	11.91	10.58	13.61	11.78	10.23	67.83

Note. $N = 281$. Facet-level scales that a priori belonged to a HEXACO domain are printed in italic; loadings > .50 are printed in bold.

and Emotionality for coworkers.[2] Among friends, all self–other convergent correlations, except that for Honesty-Humility, reached levels comparable to those observed among family members and partners. For family members, but even more so for partners, self–other convergent correlations for Honesty-Humility reached levels comparable to those observed for the self–other convergent correlations of the other HEXACO–PI scales.

To test H1, we divided the sample between respondents with a lower level of acquaintanceship (i.e., casual acquaintances, work relations, and friends; $N = 116$), and respondents with a higher level of acquaintanceship (i.e., family and partners; $N = 127$). A multiple regression analysis revealed that the level of acquaintanceship, as operationalized through this dichotomous variable, was a significant moderator of the relationship between other-rated Honesty-Humility and self-rated Honesty-Humility (semipartial $r = .17$, $p < .01$), confirming H1.

To specify this finding, we conducted additional analyses on the Honesty-Humility facet-level scales. These analyses reveal that self–other agreement at the Honesty-Humility facet level was stronger at a high acquaintanceship level (correlations ranging between .35 and .57) than at a low acquaintanceship level (correlations ranging between .16 and .33). Among high-acquaintanceship respondents, the level of agreement was high for the facets fairness ($r = .57$) and greed avoidance ($r = .55$), and medium for the facets sincerity ($r = .35$) and modesty ($r = .42$). Separate multiple regression analyses on the facets revealed that acquaintanceship level significantly moderated the relationships between the other-rated and self-rated Honesty-Humility facets fairness (semipartial $r = .23$, $p < .01$) and modesty (semipartial $r = .14$, $p = .02$) but not sincerity (semipartial $r = .05$, $p = .41$) and greed avoidance (semipartial $r = .09$, $p = .11$).

TABLE 3.—Correlations of self-rated and other-rated HEXACO–Personality Inventory scales

	Other Reports					
Self-Reports	H	E	X	A	C	O
Honesty-Humility (H)	**.42****	.21**	−.13*	.19**	.09	.14*
Emotionality (E)	.09	**.67****	−.04	−.06	.06	−.07
Extraversion (X)	−.26**	.01	**.56****	−.11	−.07	.08
Agreeableness (A)	.19**	−.12	−.09	**.51****	−.09	.09
Conscientiousness (C)	.07	.03	−.08	−.07	**.56****	−.08
Openness to Experience (O)	−.04	−.07	.08	−.06	−.02	**.61****

Note. $N = 243$.
$^{*}p < .05$. $^{**}p < .01$.

[2]However, when controlling for the gender of the target, both of these low-acquaintanceship, self–other convergent correlations of Emotionality became weaker, declining from .52 to .32 for casual acquaintances and from .43 to .26 for coworkers. In contrast, the self–other convergent correlation of Conscientiousness was largely unchanged when target gender was controlled, declining from .53 to .51.

TABLE 4.—Self–other agreement among casual acquaintances,[a] coworkers,[b] friends,[c] family members,[d] and partners.[e]

Type of Relationship	Self–Other Convergent Correlations						
	H	E	X	A	C	O	*M*
Casual acquaintances	.22	.52**	.27	.30	−.04	.29	0.26
Coworkers	.28	.43*	.33	.07	.53**	.17	0.30
Friends	.30*	.66**	.61**	.65**	.66**	.67**	0.59
Family members	.49**	.77**	.52**	.56**	.62**	.74**	0.62
Partners	.60**	.74**	.79**	.60**	.70**	.69**	0.69

Note. H = Honesty-Humility; E = Emotionality; X = Extraversion; A = Agreeableness; C = Conscientiousness; O = Openness to Experience.
[a] $N = 37$. [b] $N = 28$. [c] $N = 51$. [d] $N = 79$. [e] $N = 48$.
* $p < .05$. ** $p < .01$.

To test H2 and H3, we conducted multiple regressions with the SRP–III Psychopathy as the dependent variable and the HEXACO–PI factor scales as independent variables. We conducted the analysis four times, once with self-reported HEXACO–PI factor scales as independent variables and three times with other reported HEXACO–PI factor scales as independent variables. Of these latter three analyses, we conducted one using all of the other reports, one using other reports only from dyads involving lower levels of acquaintanceship, and one using other reports only from dyads involving higher levels of acquaintanceship with the focal person. To control for the effects of background variables, we entered the gender and age of the target first followed by the HEXACO factor scales. We expected Honesty-Humility to be a significant correlate of Psychopathy (H2), and we expected this correlation to be stronger in the high acquaintanceship condition than in the low acquaintanceship condition (H3).

The results in Table 5 show that both gender and age are related to Psychopathy; younger and male respondents had on average higher Psychopathy scores than did older and female respondents. Secondly, Honesty-Humility was significantly related to Psychopathy in both the self-report condition and the observer-report condition, confirming H2. However, at low acquaintanceship, there was a rather weak relation between other-rated Honesty-Humility and self-rated Psychopathy ($r = -.18$), whereas the relation between these variables was significant when acquaintanceship level was high ($r = -.47$). A multiple regression analysis revealed that the level of acquaintance was a significant moderator of the relationship between other-rated Honesty-Humility and self-rated psychopathy (semipartial $r = -.15$, $p = .01$), confirming H3. To further specify these findings, we conducted additional analyses at the facet level. These analyses revealed that the zero-order correlations of the Honesty-Humility facets with Psychopathy were stronger among high-acquaintanceship dyads (zero order correlations ranged from −.29 to −.43) than among low-acquaintanceship dyads (zero order correlations ranged from .03 to −.23). Multiple regression analyses on the separate Honesty-Humility facets showed that acquaintanceship level significantly moderated the relations between the self-reports on Psychopathy and the other-reports on the Honesty-Humility facets sincerity (semipartial $r = -.16$, $p = .01$) and fairness (semipartial $r = -.14$, $p = .02$) but not greed avoidance (semipartial $r = -.06$, $p = .35$) and modesty (semipartial $r = -.07$, $p = .30$).

With respect to the last three hypotheses, only self-reports of Agreeableness and Conscientiousness were significantly related to psychopathy, providing only partial support for H4 and H5. However, both self-reports and other reports of Emotionality were found to be significantly related to psychopathy, and therefore H6 received strong support.

DISCUSSION

The findings from this study support the validity of the Dutch HEXACO–PI as an operationalization of the HEXACO model of personality structure. The psychometric properties of the Dutch HEXACO–PI were satisfactory as judged in terms of internal-consistency reliability, factor structure, and scale intercorrelations. Additionally, self–other agreement on the HEXACO–PI scales was strong, especially among high-acquaintanceship dyads, and the Honesty-Humility factor showed the hypothesized negative correlations with Psychopathy, again among high-acquaintanceship dyads.

TABLE 5.—Multiple regressions of Psychopathy (SRP–III) on the background variables and the HEXACO–Personality Inventory factor scales rated, respectively, by the self, all others, low-acquaintanceship others, and high-acquaintanceship others.

Predictors	Psychopathy (SRP–III)							
	Self[a]		All Others[b]		Low-Acquaintanceship Others[c]		High-Acquaintanceship Others[d]	
	r	Semipartial *r*	*r*	Semipartial *r*	*r*	Semipartial *r*	*r*	Semipartial *r*
Gender (F = 0/M = 1)	.48**	.16**	.49**	.27**	.52**	.34**	.46**	.23**
Age	−.26**	−.10**	−.30**	−.25**	−.20*	−.28**	−.38**	−.20**
Adjusted *R*		.56**		.58**		.58**		.58**
Honesty-Humility	−.62**	−.41**	−.32**	−.11*	−.18*	.03	−.47**	−.27**
Emotionality	−.47**	−.30**	−.50**	−.20**	−.50**	−.25**	−.51**	−.13*
Extraversion	.09	.01	.10	.09	.07	.12	.14	.08
Agreeableness	−.14*	−.12**	−.11	−.03	−.05	−.11	−.16	.05
Conscientiousness	−.21**	−.10**	−.16*	−.04	−.08	−.02	−.24**	−.08
Openness to Experience	.11	.06	.01	.05	−.16	.03	.15	.11
Overall Adjusted *R*		.79**		.65**		.63**		.69**

Note. SRP–III= Self-Report Psychopathy Scale–III; F = female; M = male.
[a] $N = 289$. [b] $N = 243$. [c] $N = 116$. [d] $N = 127$.
* $p < .05$. ** $p < .01$.

We noted that the demonstration of adequate psychometric properties for the HEXACO–PI does not in any way resolve the debate on the optimal structure of personality. It is highly plausible that other six-dimensional or higher dimensional structures could be conceptualized and operationalized with instruments having similarly adequate psychometric properties. However, we stress that the HEXACO–PI was based on the cross-culturally replicated results of factor-analytic investigations derived from indigenous variable sets that were representative of the full personality domain and not from imported markers of any hypothesized factors (see Ashton, Lee, & Goldberg, 2004; Ashton, Lee, Perugini, et al., 2004). High levels of convergence have been found between the factor scales of the HEXACO–PI and the lexical dimensions observed in English, Italian, Dutch, and German (Ashton et al., 2006; Ashton, Lee, Marcus, & De Vries, 2007), thus supporting the construct validity of the HEXACO–PI.

Self–Other Agreement and Acquaintanceship

As noted by Watson et al. (2000), self-peer correlations play a crucial role in establishing convergent validity. Evidence of the convergent and discriminant validity of the HEXACO–PI factor scales was obtained by correlating self-ratings and other ratings at different levels of acquaintanceship. The overall levels of self–other agreement in this study, ranging from .42 for Honesty-Humility to .67 for Emotionality, are comparable to those recently reported by Lee and Ashton (2006), who found self–peer correlations ranging from .55 (Agreeableness) to .65 (both Emotionality and Extraversion). These results are also consistent with those observed in previous studies, many of which examined the Big Five dimensions. The median overall self–other agreement was .56 in this study, whereas in Watson et al. (2000), the median overall agreement was .47 (with values of .41, .47, and .56 for friend pairs, dating couples, and married couples, respectively). Similarly, Costa and McCrae (1992) reported self–spouse correlations ranging from .34 to .73 for the five domains, and self–peer correlations ranging from .36 to .53.

As in the previous studies we mentioned, strong differences were observed in this study according to the level of acquaintanceship of the dyads. Self–other agreement levels were low for casual acquaintances (median $r = .27$) but much higher among spouses or other romantic partners (median $r = .69$). That is, higher levels of acquaintanceship were associated with much stronger self–other convergent correlations than were lower levels of acquaintanceship.

Among the personality factors, Honesty-Humility in particular showed a gradual but marked rise in self–other agreement over the different types of relationships. At the facet level, greed avoidance appeared to be the most easily judged and consequently showed the smallest difference between low- and high-acquaintanceship raters, which may reflect the visibility or the (partial) social acceptability of the underlying behaviors (e.g., showing off wealth and status). Because of the nature of Honesty-Humility, the levels of self–other agreement for this trait are particularly noteworthy. Contrary to any concerns that one might not be able to judge the level of Honesty-Humility, the results suggest that, among well-acquainted people, there is considerable agreement on an individual's level of this dimension.

A noteworthy additional finding is the total lack of agreement of casual acquaintances on Conscientiousness, even though self–other agreement was particularly high on this trait among those sharing a work relationship. In the workplace, levels of conscientiousness may be especially important in determining which persons are one's preferred coworkers. In the study by Paulhus and Bruce (1992) in which students completed an assignment based on group discussions, the level of self–other agreement on Conscientiousness was surpassed only by that on Extraversion. For casual acquaintances, by contrast, Conscientiousness may be a less important trait to consider, and moreover, there may also be less opportunity to observe another person in a task-relevant setting. Future studies might investigate self–other agreement on Conscientiousness by varying the settings in which people meet and the type and importance of the outcomes for the dyads or group members involved.

Psychopathy, Honesty-Humility, and Emotionality

This study lends further support for the relationship between Honesty-Humility and Psychopathy and the incremental validity of the sixth factor when the HEXACO model is used to predict Psychopathy scores. Two earlier studies have also examined the relations between HEXACO Honesty-Humility and Psychopathy (see Ashton et al., 2000; Lee & Ashton, 2005). In the first, a lexical marker scale of Honesty-Humility correlated $-.45$ with Primary Psychopathy. In the second, a short questionnaire measure of Honesty-Humility correlated $-.72$ with Primary Psychopathy. However, these studies pertained to a narrow conceptualization of psychopathy and did not involve different observers of psychopathy and of the HEXACO personality dimensions. Consequently, our study confirms and extends the findings by Ashton et al. (2000) and Lee and Ashton (2005). Not only did we find a strong relationship ($r = -.62$) between the full self-report Honesty-Humility measure and Psychopathy, but other-reported Honesty-Humility also showed a medium-sized relation with self-reported Psychopathy ($r = -.32$), a value that increased when we considered only well-acquainted respondents ($r = -.47$).

In contrast to the earlier study on the relations between the HEXACO model and Psychopathy (Lee & Ashton, 2005), this study revealed a strong negative relation between Emotionality and Psychopathy in both self-report and other-report data. This relation is noteworthy for two reasons. First, no relation was observed between Big Five Emotional Stability and SRP–III in previous research (Nathanson et al., 2006). Also, the SRP–III was specifically designed to exclude items that refer to anxiety (Williams et al., 2007), an important aspect of Emotionality. Items referring to anxiety were present in the SRP–II but were eliminated in the SRP–III because a literature review failed to establish a connection between psychopathy and low anxiety (Hare, 2003).

With regard to the differential links of Psychopathy with the HEXACO and Big Five dimensions of the Agreeableness and Emotionality (or low Emotional Stability), recall that the axes within this plane are located in different rotational positions in the two models. For example, the trait of sentimentality, which in this study is found to have a medium-size negative correlation with Psychopathy, is mainly associated with Agreeableness in the Big Five model but is part of Emotionality in the HEXACO model. Consequently, not only do the findings offer support for

the hypothesis with respect to Emotionality, they also constitute evidence that care should be taken when translating findings involving Big Five Agreeableness and Emotional Stability to the HEXACO model.

Despite the removal of low anxiety content from the SRP–III, Emotionality was hypothesized (and found) to correlate negatively with SRP–III because two facets in HEXACO–PI Emotionality, namely, sentimentality and fearfulness, have conceptual parallels with the low pole of the two facets in the SRP–III named callous affect and erratic lifestyle. Consistent with this hypothesis, the fearfulness facet showed a strong negative correlation with SRP erratic lifestyle ($r = -.53$) and the sentimentality facet a medium-size negative correlation with callous affect ($r = -.41$). The prominent role that fearfulness played in predicting psychopathy is particularly interesting. This relationship can be understood from Gray's (1987) notion that lack of fearfulness is associated with lower levels of sensitivity to punishment, which is one of the characteristics of psychopathic offenders.

Limitations

A number of limitations of this study should be noted. First of all, more than half of the participants who were used to establish the psychometric properties of the HEXACO–PI consisted of social science students. Therefore, the means on the HEXACO–PI scales reported in Table 1 will likely differ from those obtained from other participant samples, and other psychometric properties may also differ to some extent.

Second, although our analyses indicated that the observed self–other agreement is not an artifact of any joint influence of assumed and actual similarity between dyads, some may still wonder whether the strong agreement between closely acquainted members of a dyad is due to real personality similarity or due to mistaken but shared perceptions of their personalities. Some available evidence suggests that such shared impression is unlikely to be the primary source of self–other agreement. For example, both self-reports and other reports of personality have been shown to correlate with objective criteria (Bratko, Chamorro-Premuzic, & Saks, 2006) as well as observational criteria (Kolar, Funder, & Colvin, 1996). Moreover, some studies have shown that agreement can be obtained from multiple observers who have not even met before (e.g., Funder, Kolar, & Blackman, 1995). Nevertheless, these studies have not completely ruled out the possibility that self–other agreement is at least partly spurious, and future studies will be needed to resolve this issue.

Third, we were unable to include a clinical (or forensic) sample in this study. In studies involving such clinical/forensic samples, psychopathy has been commonly measured using the PCL–R (Hare, 2003), which involves an intensive interview and thorough review of archival records rather than simply using self-reports. Consequently, the representativeness of the results with respect to psychopathy may have been compromised. However, an earlier version of the SRP Scale has been found to be significantly and positively related to ratings using the PCL–R (Hare, 1985). Additionally, the SRP–III has been found to significantly predict measures of cheating behavior beyond the prediction achieved by the Big Five personality variables and dark triad variables (Nathanson et al., 2006). Furthermore, due to restriction of range in psychopathy, it is likely that the results are actually a conservative estimate of the true relations involving psychopathy. However, future research involving a clinical/forensic sample and the use of the PCL–R would offer a welcome addition to these findings.

ACKNOWLEDGMENTS

Grateful acknowledgement is provided to Jan Feij, Annebel de Hoogh, Ed Caffin, Marleen Haentjens-van Meeteren, Maarten de Groot, Tim van der Heijden, Elise van der Kooij, Ewa Petiet, and Marleen Vriend for their help in data collection and to Lisette Thooft and Dick van Kampen for their help in translating, respectively, the HEXACO–PI and the SRP–III.

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