THE MALADAPTIVE PERSONALITY TRAITS OF THE PERSONALITY INVENTORY FOR *DSM-5* (PID-5) IN RELATION TO THE HEXACO PERSONALITY FACTORS AND SCHIZOTYPY/DISSOCIATION

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The Personality Inventory for *DSM-5* (PID-5), a new measure of maladaptive personality traits, has recently been developed by the *DSM-5* Personality and Personality Disorders Workgroup. The PID-5 variables were examined within the seven-factor space defined by the six HEXACO factors and the Schizotypy/Dissociation factor (Ashton & Lee, 2012) using participant samples from Canada (N = 378) and the Netherlands (N = 476). Extension analyses showed that several PID-5 facet-level scales represented each of the Honesty-Humility, Emotionality, Extraversion, Conscientiousness, and Schizotypy/Dissociation factors. In contrast, only one PID-5 scale loaded strongly on HEXACO Agreeableness, and no PID-5 scales loaded strongly on Openness to Experience. In addition, a joint factor analysis involving the PID-5 variables and facets of the Five-Factor Model was conducted in the Canadian sample and recovered a set of seven factors corresponding rather closely to the HEXACO factors plus Schizotypy/Dissociation. The authors discuss implications for the assessment and structure of normal and abnormal personality.

A preliminary model of maladaptive personality traits has recently been constructed and evaluated under the auspices of the *DSM-5* Personality and Personality Disorders Workgroup (Krueger, Derringer, Markon, Watson, & Skodol, 2012). The 25 facet traits of this model are classified into five broad trait domains called Negative Affectivity, Detachment, Antago-

nism, Disinhibition, and Psychoticism. The model is operationalized in a self-report instrument called the Personality Inventory for *DSM-5* (PID-5).

In the present report, we examine the location of the PID-5 facets and domains within the seven-dimensional space that is spanned by the six factors of the HEXACO model of personality structure and by a factor of schizotypal and dissociative tendency. Most previous research in the area of maladaptive personality has been conducted within the framework of the Big Five (B5) or Five-Factor Model (FFM; e.g., Widiger, Trull, Clarkin, Sanderson, & Costa, 2002). However, cross-culturally replicated results from investigations based on the lexical approach to personality structure—the approach that underlies the B5 and the FFM—suggest six dimensions of personality (Ashton & Lee, 2010; Ashton, Lee, & De Vries, 2012; Ashton et al., 2004; Lee & Ashton, 2008; Saucier, 2009; cf. De Raad et al. 2010a, 2010b), which we call the HEXACO factors: Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness [versus Anger] (A), Conscientiousness (C), and Openness to Experience (O). In addition to these six dimensions of normal personality variation, we also consider in the present research a seventh factor defined by schizotypal and dissociative tendencies. This factor, which is defined by characteristics generally considered to fall outside the domain of normal personality variation, was recently found by Ashton and Lee (2012) to define a dimension roughly orthogonal to those of the HEXACO and the FFM frameworks. Because the PID-5 Psychoticism domain contains facets having substantial conceptual overlap with this Schizotypy/Dissociation factor, we included this factor as an addition to the six HEXACO dimensions. Our aim in the present research was to provide a better understanding of the constructs assessed by the PID-5, by finding the locations of the PID-5 variables within the space defined by the major axes of normal and abnormal personality variation. In doing so, we might also identify regions of the personality space that are underrepresented within the PID-5 framework.

PREDICTED LOCATIONS OF PID-5 VARIABLES WITHIN THE HEXACO-PLUS-SCHIZOTYPY/DISSOCIATION FACTOR SPACE

The five PID-5 domains derived by the *DSM-5* work group (e.g., Krueger et al., 2011) include four domains (Antagonism, Negative Affectivity, Detachment, and Disinhibition) suggested to be common to both normal and abnormal personality variation (e.g., Widiger & Simonsen, 2005) as well as a Psychoticism domain, which subsumes traits of schizotypy and dissociation (Chmielewski & Watson, 2008). Here we briefly consider the content of the PID-5 domains and facets, with the aim of predicting their likely locations within the seven-factor space spanned by the HEXACO factors plus Schizotypy/Dissociation.

The content of most facets of the PID-5 Antagonism domain (Attention Seeking, Grandiosity, Deceitfulness, and Manipulativeness) resembles that of the low pole of HEXACO Honesty-Humility. The remaining facet of

the PID-5 Antagonism domain, Callousness, suggests the opposite pole of altruistic tendency, which tends to divide its loadings among the HEXACO Honesty-Humility, Emotionality, and Agreeableness factors. Taken as a whole, therefore, the Antagonism domain is likely to be associated primarily, though not exclusively, with low Honesty-Humility.

Several facets of the PID-5 Negative Affectivity domain (Anxiousness, Emotional Lability, Separation Insecurity, and [lack of] Restricted Affectivity) are conceptually similar to facets of the HEXACO Emotionality factor. However, the Hostility facet of PID-5 Negative Affectivity is much closer in content to the low pole of HEXACO Agreeableness.[1]

The PID-5 domains of Detachment and Disinhibition are mainly defined by facets that correspond closely to the opposite poles of HEXACO Extraversion and Conscientiousness, respectively. The PID-5 Psychoticism domain, and particularly its facets of Perceptual Dysregulation and Unusual Beliefs and Experiences, closely resembles the Schizotypy/Dissociation factor. In addition, some items of the Eccentricity facet of PID-5 Psychoticism are suggestive of the unconventionality facet of Openness to Experience.

Based on these considerations of the content of the PID-5, we expect that the HEXACO Honesty-Humility, Emotionality, Extraversion, and Conscientiousness factors, as well as the Schizotypy/Dissociation factor, will be well represented within the PID-5. In contrast, the HEXACO Agreeableness factor will be less strongly represented, with only one PID-5 facet being primarily and strongly related to that factor. Also, the HEXACO Openness to Experience factor will be only weakly represented, because none of the PID-5 scales appear primarily to reflect that factor, and only a few appear to have a secondary element thereof.

JOINT FACTOR SPACE OF THE PID-5 AND FFM: SIMILAR TO HEXACO PLUS SCHIZOTYPY/DISSOCIATION?

The PID-5 is intended to represent five broad domains of personality variation, but these domains differ in two important respects from those of the B5/FFM. First, the B5/FFM Openness to Experience factor—which is nearly identical to the HEXACO dimension of the same name—appears to be nearly independent of the PID-5 domains, including Psychoticism. Second, the B5/FFM Agreeableness factor tends to be at least as strongly related to HEXACO Agreeableness as to HEXACO Honesty-Humility; in contrast, the low pole of the PID-5 Antagonism domain appears to be more similar to HEXACO Honesty-Humility than to HEXACO Agreeableness. Otherwise, the PID-5 and the B5/FFM seem largely similar, as Negative

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1. We remind readers that the negative pole of HEXACO Agreeableness includes traits of ill-temper and anger-proneness, which typically define the Neuroticism factor in the FFM. HEXACO Emotionality lacks such content, but includes the sentimentality that is associated with FFM Agreeableness.

Affectivity, Detachment, and Disinhibition correspond closely to Neuroticism, low Extraversion, and low Conscientiousness.

The situation described here concerning the differences between the PID-5 and the B5/FFM leads to the following prediction: When taken together, the PID-5 facet scales and a facet-level measure of the FFM should define a seven-factor space similar to that of the HEXACO factors plus Schizotypy/Dissociation. The specific correspondences between the factors of the two variable sets can be predicted as follows: HEXACO Openness to Experience would correspond to a factor defined by FFM Openness to Experience facets. Schizotypy/Dissociation would correspond to a factor defined by PID-5 Psychoticism facets. HEXACO Honesty-Humility would correspond to the low pole of a factor defined by most facets of PID-5 Antagonism and (negatively) by the FFM Agreeableness facets of Straightforwardness and Modesty (see Ashton & Lee, 2005). HEXACO Agreeableness would correspond to a factor defined negatively by the PID-5 Hostility facet and by the FFM Neuroticism facet of Angry Hostility, and positively by the FFM Agreeableness facet of Compliance. The remaining HEXACO factors—Emotionality, Extraversion, and Conscientiousness—would correspond to factors defined by various facets of PID-5 Negative Affectivity, Detachment, and Disinhibition, respectively, and of FFM Neuroticism, Extraversion, and Conscientiousness, respectively.

To the extent that this prediction concerning the joint structure of PID-5 and FFM facets is confirmed, such results would not constitute direct evidence regarding the structure of personality characteristics, because the PID-5-plus-FFM variable set cannot be assumed to be representative of the entire personality domain. But given that neither the PID-5 nor the FFM was developed with the aim of recovering the HEXACO factors, the recovery of those dimensions from the PID-5-plus-FFM variable set would illustrate their importance in personality description. Moreover, the emergence of separate factors for Openness to Experience and Schizotypy/Dissociation would support the claims that characteristics resembling those of the PID-5 Psychoticism domain are largely independent of Openness to Experience and that the latter factor is not directly implicated in maladaptive personality (Watson, Clark, & Chmielewski, 2008).

METHOD
PARTICIPANTS

Data were collected from two samples of participants. Characteristics of each sample are described here.

Canadian Sample. A total of 384 undergraduate students from two Canadian universities participated in the present research in return for either course credits or cash payment. Data from six participants were removed due to quasi-random response patterns. The mean age of the

remaining 378 participants was 20.4 years (*SD* = 3.8), and 55% of those participants were women.

Dutch Sample. The data of the Dutch sample are part of a multiple-wave Internet panel study (see De Vries & Van Kampen, 2010, for details), in which the HEXACO-PI-R was administered to 1,377 participants in 2008. Data involving the PID-5 and the CES were collected during 2011 in two waves about 2 weeks apart from a subsample of 476 participants. The mean age of the subsample was 51.5 years (*SD* = 13.7), and 50% of the participants were women.

MEASURES

Unless indicated otherwise here, participants were asked to indicate their responses on a 5-point scale (1 = *strongly disagree*; 5 = *strongly agree*). Means, standard deviations, and internal consistency reliabilities of the scales described here are shown in Table 1.

HEXACO-PI-R. The 100-item version of the HEXACO-PI-R (Lee & Ashton, 2004) was used for the Canadian sample, and the Dutch 200-item version of the HEXACO-PI-R (De Vries, Ashton, & Lee, 2009) was used for the Dutch sample. The Dutch translation of the inventory has been previously validated and its psychometric properties reported in De Vries et al. (2009). The HEXACO-PI-R contains 25 facets (four facets for each of the six HEXACO factors plus the interstitial Altruism facet).

CES. The 31-item Curious Experiences Scale (CES; Goldberg, 1999) was used in assessing the Schizotypy/Dissociation factor (see Ashton & Lee, 2012) in both the Canadian and the Dutch samples. The CES items were translated into the Dutch language for the present research by one of the authors (R.E.deV.), and back-translated by a professional translator. Differences between the original items and the back-translated items were resolved through discussion between the coauthor and the translator.

PID-5. The 220-item Personality Inventory for the *DSM-5* (PID-5) was administered to the Canadian and the Dutch samples. Krueger et al. (in press) recently reported the psychometric properties of the inventory, which assesses 25 facets subsumed within the five domains (see Table 1 for a list of the PID-5 facet- and domain-level scales). The Dutch version of the PID-5 used in the present research had been developed by a team of Dutch-speaking Belgian psychologists (De Clercq, De Fruyt, Mervielde, Krueger, & Markon, 2011). A 4-point response scale was used for the PID-5 (0 = *very false or often false*; 3 = *very true or often true*).[2]

NEO-PI-3FH. The half-length form of the NEO Personality Inventory 3, known as the NEO-PI-3 First Half (NEO-PI-3FH; McCrae & Costa, 2007,

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2. Three items of the PID-5 Depression scale describe suicidal tendencies and had to be omitted from the inventory that was administered at one of the Canadian universities, on the advice of the university's research ethics board. For this subsample of participants, Depression scores are calculated as the mean across the remaining items of that scale.

TABLE 1. Means, Standard Deviation, and Internal Consistency Reliabilities (Coefficient α) of the Study Variables

HEXACO and CES	Canadian			Dutch		
	Mean	SD	α	Mean	SD	α
Honesty-Humility	3.20	.65	.84	3.77	.46	.91
Sincerity	3.18	.82	.67	3.65	.56	.74
Fairness	3.30	1.01	.77	3.85	.66	.83
Greed Avoidance	2.73	.92	.80	3.70	.64	.83
Modesty	3.58	.80	.70	3.89	.54	.80
Emotionality	3.32	.63	.84	3.13	.46	.89
Fearfulness	3.00	.86	.70	2.91	.59	.74
Anxiety	3.67	.83	.69	3.10	.65	.79
Dependence	3.15	.94	.80	3.13	.61	.82
Sentimentality	3.43	.83	.70	3.37	.61	.79
Extraversion	3.39	.65	.88	3.31	.45	.89
Social Self-Esteem	3.76	.72	.69	3.84	.50	.79
Social Boldness	2.95	.92	.78	3.06	.68	.83
Sociability	3.41	.84	.75	2.99	.60	.72
Liveliness	3.42	.83	.80	3.36	.60	.81
Agreeableness	2.96	.57	.83	3.05	.42	.88
Forgiveness	2.66	.80	.74	2.69	.66	.86
Gentleness	3.14	.75	.66	3.18	.51	.74
Flexibility	2.79	.75	.60	3.06	.47	.63
Patience	3.26	.88	.78	3.27	.57	.76
Conscientiousness	3.48	.54	.81	3.46	.37	.84
Organization	3.44	.84	.68	3.56	.65	.82
Diligence	3.76	.67	.67	3.41	.52	.72
Perfectionism	3.50	.76	.68	3.59	.56	.74
Prudence	3.23	.77	.71	3.27	.50	.71
Openness to Exp.	3.19	.63	.81	3.21	.46	.87
Aesthetic Appreciation	3.06	.96	.67	3.28	.70	.79
Inquisitiveness	2.95	.96	.69	3.46	.69	.79
Creativity	3.36	.92	.73	3.08	.61	.73
Unconventionality	3.41	.65	.49	3.01	.52	.71
Interstitial						
Altruism	3.77	.70	.64	3.92	.48	.74
CES	1.86	.49	.91	1.52	.40	.93
Depersonalization	1.40	.52	.83	1.24	.44	.89
Absorption	2.46	.69	.76	1.87	.58	.79
Amnesia	1.50	.58	.70	1.38	.47	.74

PID-5	Canadian			Dutch		
	Mean	SD	α	Mean	SD	α
Negative Affectivity	1.30	.41	.93	1.08	.32	.91
Anxiousness	1.47	.74	.86	.93	.59	.84
Emotional Lability	1.19	.74	.89	1.03	.55	.83
Hostility	1.05	.55	.89	.87	.48	.83
Perseveration	1.15	.52	.80	.92	.49	.84
Restricted Affectiv.	1.05	.61	.82	1.00	.54	.81
Separation Insecurity	1.07	.69	.84	.93	.47	.73
Submissiveness	1.29	.69	.82	1.05	.55	.72
Detachment	.80	.44	.95	.75	.41	.95
Anhedonia	.83	.56	.91	.83	.48	.90
Depressivity	.64	.58	.94	.51	.48	.93
Intimacy Avoidance	.63	.57	.80	.77	.55	.82
Suspiciousness	1.11	.50	.70	1.01	.42	.64
Withdrawal	.88	.59	.89	.85	.60	.92
Antagonism	.87	.46	.95	.65	.39	.95
Attention Seeking	1.22	.66	.89	.85	.57	.89
Callousness	.56	.48	.89	.48	.40	.87
Deceitfulness	.93	.61	.87	.62	.46	.87
Grandiosity	.78	.57	.82	.60	.52	.84
Manipulativness	1.13	.73	.85	.90	.61	.85
Disinhibition	1.27	.36	.90	1.13	.25	.83
Distractibility	1.17	.60	.87	.87	.53	.89
Impulsivity	1.05	.69	.88	.96	.49	.77
Irresponsibility	.59	.46	.70	.53	.42	.77
Rigid Perfectionism	1.27	.60	.88	1.06	.57	.88
Risk Taking	1.43	.57	.90	1.08	.40	.82
Psychoticism	.96	.56	.95	.58	.44	.95
Eccentricity	1.19	.75	.95	.65	.55	.94
Perceptual dysregulation	.82	.54	.84	.48	.42	.87
Unusual beliefs and exp.	.81	.60	.81	.62	.55	.87

NEO-PI-3FH	Canadian		
	Mean	SD	α
Neuroticism	2.91	.56	.86
Anxiety	3.41	.83	.71
Angry Hostility	2.54	.79	.72
Depression	2.96	.90	.74
Self-Consciousness	2.83	.81	.64
Impulsiveness	2.99	.68	.42
Vulnerability	2.72	.74	.61
Extraversion	3.46	.50	.82
Warmth	3.88	.68	.60
Gregariousness	3.20	.87	.75
Assertiveness	3.17	.87	.78
Activity	3.21	.60	.28
Excitement-Seeking	3.64	.76	.41
Positive Emotions	3.68	.80	.65
Openness to Exp.	3.53	.45	.77
Fantasy	3.57	.75	.66
Aesthetics	3.34	.88	.68
Feelings	3.69	.70	.61
Actions	3.22	.63	.38
Ideas	3.47	.83	.63
Values	3.91	.64	.41
Agreeableness	3.22	.46	.81
Trust	2.91	.76	.72
Straightforwardness	3.00	.82	.66
Altruism	3.93	.58	.57
Compliance	2.93	.80	.59
Modesty	2.98	.80	.71
Tender-Mindedness	3.59	.70	.59
Conscientiousness	3.34	.47	.83
Competence	3.44	.63	.57
Order	3.32	.80	.71
Dutifulness	3.46	.62	.36
Achievement Striv.	3.68	.70	.72
Self-Discipline	3.33	.77	.66
Deliberation	2.81	.69	.61

Notes. The 100-item version of the HEXACO-PI-R was used for the Canadian sample (*N* = 378), and the 200-item version of the HEXACO-PI-R was used for the Dutch Sample (*N* = 476). The NEO-PI-3FH was administered only to the Canadian sample. CES = Curious Experiences Survey; PID-5 = Personality Inventory for *DSM-5*.

2010), was administered to the Canadian sample to examine the factor structure jointly defined by the PID-5 and the FFM facets. The NEO-PI-3FH provides facet-level assessments as does the full-length inventory, but consists of only the first 120 items of the NEO-PI-3.

RESULTS
LOADINGS OF PID-5 SCALES ON THE HEXACO
AND SCHIZOTYPY/DISSOCIATION FACTORS

We used extension analysis (Gorsuch, 1997; O'Connor, 2001) to locate the PID-5 scales in the seven-factor space defined by the scales of the HEXACO-PI-R and the CES. In extension analysis, the factor space to be examined is derived by an exploratory factor analysis involving a core set of variables, and then the loadings of the extension variables (i.e., variables external to the core variable set) on these factors are subsequently obtained. This method allows the researcher to estimate the loadings of the extension variables within a given factor space that is not affected by the inclusion of the extension variables. In the present analyses, the 25 HEXACO-PI-R facet scales and the three CES scales were used as the core variables, and the 25 PID-5 facet scales and five PID-5 domain scales were used as extension variables.

Tables 2 and 3 show the results of the extension analyses for the Canadian and the Dutch samples, respectively.[3] The upper part of each table shows results of the exploratory factor analyses involving the core variables. As expected, the two samples produced similar varimax-rotated seven-factor solutions containing the six HEXACO factors and the Schizotypy/Dissociaton factor, each similar to the result observed in Ashton and Lee (2012).[4]

The lower part of each table shows the extension loadings of the PID-5 scales. In interpreting these results, we note that in the Canadian sample the HEXACO-PI-R, CES, and PID-5 were administered together, whereas in the Dutch sample the HEXACO-PI-R was administered 4 years prior to the CES and the PID-5, which were administered 2 weeks apart. Therefore, the extension loadings of the PID-5 scales on the HEXACO-PI-R factors in the Dutch sample will generally be somewhat lower than the corresponding extension loadings in the Canadian sample.

The PID-5 Negative Affectivity domain scale showed moderate loadings on Emotionality (.43 for the Canadian sample, .36 for the Dutch sample), on Schizotypy/Dissociation (.32 Canadian, .34 Dutch), on Agreeableness (−.37 Canadian, −.25 Dutch), and on Extraversion (−.29 Canadian, −.16 Dutch). PID-5 Negative Affectivity thus appears to be a blend of Emotion-

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3. Correlation matrices for all variables of the study samples are available from the authors.

4. The size of the Canadian sample, $N = 378$, exactly equals that of the sample used in Study 2 of Ashton and Lee (2012). This is a coincidence, as the two samples do not overlap.

TABLE 2. Extension Loadings of the PID-5 Scales on Factors
of Normal and Abnormal Personality (Canadian Sample)

	H	E	X	A	C	O	S/D	h²
Core Variables (HEXACO-PI-R and CES)								
Sincerity	**.60**	−.08	−.07	.09	−.02	.09	−.11	.40
Fairness	**.52**	.27	−.11	.12	.15	.01	−.12	.41
Greed Avoidance	**.61**	.07	−.05	.13	−.09	.21	.05	.45
Modesty	**.59**	.20	−.17	.11	−.06	.01	.00	.43
Fearfulness	.04	**.52**	**−.31**	−.05	.08	−.22	.04	.43
Anxiety	.17	**.38**	−.28	**−.36**	.19	−.04	.19	.46
Dependence	.02	**.69**	.07	−.16	.04	−.04	−.03	.51
Sentimentality	.13	**.72**	.04	−.03	.10	.05	.01	.55
Social Self-Esteem	−.10	−.12	**.70**	.07	.09	.01	−.10	.54
Social Boldness	−.16	−.12	**.65**	−.06	.01	.20	.02	.51
Sociability	−.05	.29	**.62**	.09	−.11	.07	−.03	.50
Liveliness	−.04	.04	**.79**	.17	.04	−.03	−.05	.66
Forgiveness	.15	.04	.14	**.55**	.08	−.02	−.02	.37
Gentleness	.27	.00	.04	**.46**	−.09	−.04	.02	.30
Flexibility	.12	−.01	.05	**.67**	.01	−.03	−.05	.47
Patience	.00	−.13	−.01	**.68**	.09	.12	−.05	.50
Organization	−.11	.13	−.01	−.04	**.53**	−.06	−.14	.33
Diligence	.00	.04	**.35**	−.14	**.67**	.12	−.02	.61
Perfectionism	.04	.18	−.04	−.09	**.69**	.12	.00	.53
Prudence	.01	−.09	−.13	.15	**.47**	−.02	−.22	.32
Aesthetic Appreciation	.10	.12	−.12	.06	.15	**.67**	.02	.51
Inquisitiveness	.10	−.23	.04	−.02	.05	**.49**	−.09	.32
Creativity	.11	.14	.16	.07	.03	**.70**	.08	.56
Unconventionality	.02	−.15	.16	.03	−.11	**.52**	.13	.35
Altruism	**.33**	**.54**	.12	.23	.10	.06	−.09	.49
CES Depersonalization	−.09	−.03	−.11	.01	−.07	.12	**.74**	.59
CES Absorption	−.07	.09	−.01	−.08	−.14	.15	**.72**	.58
CES Amnesia	.00	−.09	−.03	−.04	−.10	−.13	**.74**	.59
Extension Variables (PID-S)								
Negative affectivity	−.03	**.43**	−.29	**−.37**	−.10	−.07	**.32**	.52
Anxiousness	.03	**.31**	**−.42**	**−.30**	.02	−.06	.26	.44
Emotional lability	.03	**.40**	−.22	−.24	−.09	.03	**.32**	.38
Hostility	−.17	−.01	−.11	**−.58**	−.08	−.07	.19	.42
Perseveration	−.06	.08	−.27	−.17	−.17	−.05	**.42**	.32
Restricted affectivity	−.13	**−.57**	−.18	.05	−.07	−.01	.19	.42
Separation insecurity	−.07	**.38**	−.11	−.15	−.12	−.13	.23	.27
Submissiveness	−.05	.17	**−.31**	.07	−.10	.00	.11	.15
Detachment	.00	−.16	**−.65**	−.13	−.10	.00	**.31**	.57
Anhedonia	.01	−.16	**−.65**	−.10	−.09	−.03	.21	.51
Depressivity	.04	.02	**−.55**	−.08	−.19	.07	**.32**	.45
Intimacy avoidance	.02	−.14	**−.32**	−.01	−.02	.01	.15	.15
Suspiciousness	−.14	−.07	−.20	−.25	−.06	−.07	.29	.22
Withdrawal	.01	−.27	**−.60**	−.08	.05	−.03	.18	.48
Antagonism	**−.54**	−.22	.17	−.23	−.12	−.04	.25	.50
Attention seeking	**−.36**	.07	**.40**	−.14	−.08	.03	.14	.34
Callousness	**−.38**	**−.40**	−.02	−.27	−.11	−.04	.27	.46
Deceitfulness	**−.49**	−.15	.02	−.15	−.17	−.09	.22	.37
Grandiosity	**−.46**	−.17	.18	−.14	.01	.00	.13	.31
Manipulativeness	**−.43**	−.16	.19	−.17	−.04	.00	.19	.31
Disinhibition	−.05	−.17	.23	.01	**−.56**	.06	.21	.45
Distractibility	.01	.05	−.14	−.04	**−.45**	.01	**.33**	.34
Impulsivity	−.08	−.00	.16	−.13	**−.37**	.03	**.32**	.29
Irresponsibility	−.14	−.14	−.02	−.07	**−.42**	−.02	.23	.27
Rigid perfectionism	−.14	.14	−.17	−.23	**.42**	.00	.14	.32
Risk taking	−.10	−.23	**.37**	−.03	−.18	.10	.06	.25
Psychoticism	−.10	−.08	−.14	−.05	−.20	.23	**.56**	.45
Eccentricity	−.06	−.11	−.14	−.08	−.21	.26	**.39**	.31
Perceptual dysregulation	−.08	−.00	−.16	−.03	−.18	.13	**.62**	.47
Unusual beliefs and experiences	−.15	−.08	−.02	.00	−.08	.18	**.49**	.31

Notes. N = 378. H = Honesty-Humility; E = Emotionality; X = Extraversion; A = Agreeableness; C = Conscientiousness; O = Openness to Experience; S/D = Schizotypy/Dissociation; CES = Curious Experiences Survey; PID-5 = Personality Inventory for *DSM-5*. Loadings with absolute values of .30 or above are given in bold type.

**TABLE 3. Extension Loadings of the PID-5 Scales on Factors
of Normal and Abnormal Personality (Dutch Sample)**

	H	E	X	A	C	O	S/D	h^2
Core Variables (HEXACO-PI-R and CES)								
Sincerity	**.69**	−.07	.03	.02	.08	.00	−.09	.50
Fairness	**.55**	.18	.07	.22	.13	−.05	−.11	.42
Greed Avoidance	**.76**	−.02	−.11	.18	−.05	−.06	.02	.63
Modesty	**.66**	.13	−.08	.19	.08	−.14	−.01	.52
Fearfulness	−.01	**.48**	−.25	−.11	.03	−.14	−.07	.33
Anxiety	−.03	**.62**	**−.30**	−.21	.00	−.03	.22	.57
Dependence	.02	**.66**	−.01	−.12	−.06	−.07	.06	.46
Sentimentality	.19	**.76**	.15	.10	.06	.01	.14	.67
Social Self-Esteem	.08	−.13	**.59**	.20	.23	.05	−.18	.50
Social Boldness	−.06	−.15	**.62**	−.12	.01	**.33**	−.05	.54
Sociability	−.06	.23	**.66**	−.01	−.13	−.02	−.04	.51
Liveliness	−.01	−.17	**.72**	.16	.14	.07	−.11	.61
Forgiveness	.07	−.07	.14	**.55**	−.12	.14	.03	.37
Gentleness	.21	.03	−.08	**.75**	.04	−.06	.02	.62
Flexibility	.26	.02	.07	**.58**	.03	−.13	−.07	.43
Patience	.10	−.19	.04	**.72**	.08	.04	−.05	.58
Organization	.14	.04	.14	−.04	**.50**	−.19	−.11	.34
Diligence	−.02	−.05	**.45**	−.06	**.49**	.19	.01	.49
Perfectionism	.07	.15	.00	−.06	**.57**	.21	.12	.41
Prudence	.08	−.19	−.08	**.31**	**.52**	.04	−.17	.45
Aesthetic Appreciation	.09	.20	.08	.04	.10	**.65**	.11	.50
Inquisitiveness	−.06	−.22	.02	.11	.19	**.55**	.03	.40
Creativity	−.10	−.04	.24	−.04	.00	**.65**	.13	.51
Unconventionality	−.15	−.16	.03	−.08	−.15	**.61**	.19	.49
Altruism	**.49**	**.50**	.14	**.30**	.15	.18	.07	.66
CES Depersonalization	−.06	.07	−.16	.02	−.04	.18	**.74**	.62
CES Absorption	.00	.12	.00	−.01	−.02	.20	**.78**	.66
CES Amnesia	−.09	.06	−.12	−.06	−.02	.03	**.73**	.56
Extension Variables (PID-S)								
Negative affectivity	−.17	**.36**	−.16	−.25	−.10	.02	**.34**	.37
Anxiousness	−.15	**.34**	−.27	−.16	−.08	.01	**.32**	.35
Emotional lability	−.01	**.37**	−.07	−.17	−.08	.03	**.33**	.29
Hostility	−.24	−.03	−.12	**−.47**	−.14	.03	.20	.35
Perseveration	−.19	.11	−.21	−.15	−.06	.09	**.33**	.24
Restricted affectivity	−.18	**−.40**	−.29	−.09	−.08	−.02	.06	.30
Separation insecurity	−.13	.27	−.03	−.09	−.06	−.09	.12	.12
Submissiveness	−.15	.12	−.18	.04	−.03	−.05	.15	.10
Detachment	−.09	.03	**−.51**	−.12	−.15	.00	**.30**	.40
Anhedonia	−.08	.04	**−.50**	−.11	−.20	−.10	.22	.37
Depressivity	−.08	.17	**−.38**	−.13	−.17	.02	**.33**	.33
Intimacy avoidance	.03	−.02	**−.31**	−.03	−.07	.03	.16	.13
Suspiciousness	−.15	.09	−.20	−.14	−.03	−.06	.21	.14
Withdrawal	−.07	−.15	**−.54**	−.08	−.08	.06	.21	.38
Antagonism	**−.50**	−.17	.03	−.24	−.16	.13	.16	.41
Attention seeking	**−.38**	.04	.23	−.18	−.08	.23	.18	.32
Callousness	**−.37**	−.29	−.14	−.26	−.21	−.04	.11	.37
Deceitfulness	**−.48**	−.13	−.08	−.19	−.18	.05	.16	.35
Grandiosity	**−.40**	−.19	.06	−.16	−.06	.21	.08	.28
Manipulativeness	**−.41**	−.11	.16	−.15	−.05	.17	.12	.27
Disinhibition	−.21	−.10	.06	−.09	**−.45**	.11	.18	.31
Distractibility	−.16	.09	−.25	−.14	−.27	.02	**.31**	.29
Impulsivity	−.12	.06	.08	−.17	**−.30**	.04	.24	.20
Irresponsibility	**−.32**	−.05	−.16	−.11	**−.33**	.04	.19	.29
Rigid perfectionism	−.13	.08	−.15	−.13	.22	.05	.26	.18
Risk taking	−.19	−.21	.23	−.06	−.14	.21	.14	.22
Psychoticism	−.23	−.04	−.18	−.14	−.17	.17	**.39**	.32
Eccentricity	−.24	−.13	−.20	−.21	−.21	.18	.28	.31
Perceptual dysregulation	−.18	.06	−.21	−.07	−.14	.06	**.43**	.29
Unusual beliefs and experiences	−.16	.02	−.03	−.04	−.05	.20	**.34**	.19

Notes. N = 476. H = Honesty-Humility; E = Emotionality; X = Extraversion; A = Agreeableness; C = Conscientiousness; O = Openness to Experience; S/D = Schizotypy/Dissociation; CES = Curious Experiences Survey; PID-5 = Personality Inventory for *DSM-5*. Loadings with absolute values of .30 or above are given in bold type.

ality, Schizotypy/Dissociation, (low) Agreeableness, and to a lesser degree (low) Extraversion. The various facets within the Negative Affectivity domain differed in their locations within the factor space. For example, (low) Restricted Affectivity loaded mainly on Emotionality, Hostility loaded mainly on the low pole of Agreeableness, and Perseveration loaded mainly on Schizotypy/Dissociation. Anxiousness and Emotional Lability showed loadings that were similar to those of the overall domain, and Submissiveness showed rather weak loadings, the strongest of which were on the low pole of Extraversion.

The PID-5 Detachment domain scale showed its strongest loading on the low pole of Extraversion (–.65 and –.51 for the Canadian and the Dutch samples, respectively), with a secondary loading on Schizotypy/Dissociation (.31 Canadian, .30 Dutch). In both samples, all facets of PID-5 Detachment except Suspiciousness showed loadings of –.30 or stronger on the Extraversion factor. The facets in the Detachment domain generally showed secondary loadings on the Schizotypy/Dissociation factor, with the Depressivity scale loading above .30 on this factor in both samples.

The PID-5 Antagonism domain scale showed its strongest loading on the low pole of Honesty-Humility in both samples (–.54 Canadian, –.50 for Dutch). All of the facets in this domain (Attention Seeking, Callousness, Deceitfulness, Grandiosity, and Manipulativeness) showed loadings of –.30 or stronger on this factor. The Attention Seeking facet also loaded on Extraversion, and the Callousness facet also loaded on low Agreeableness and low Emotionality.

The PID-5 Disinhibition domain scale loaded primarily on the low pole of Conscientiousness in both samples (–.56 Canadian, –.45 Dutch). Although most of the facets in the domain showed moderate negative loadings on Conscientiousness (especially in the Canadian sample), Risk Taking showed only a weak loading on this factor in both samples. Instead, Risk Taking showed its largest loadings on Extraversion and on the low pole of Emotionality (.37 and –.23 for the Canadian sample, .23 and –.21 for the Dutch sample).

The PID-5 Psychoticism domain scale showed its highest loading on Schizotypy/Dissociation in both samples (.56 Canadian, .39 Dutch). In both samples, PID-5 Psychoticism showed only a modest secondary loading on Openness to Experience. All three facets of the Psychoticism domain loaded more highly on Schizotypy/Dissociation than on Openness to Experience, but Perceptual Dysregulation had the weakest secondary loading and Eccentricity had the strongest secondary loading on the latter factor. The Psychoticism construct included in the PID-5 appears primarily to assess distorted perceptions of reality, rather than the imagination or unconventionality associated with Openness to Experience.

These results indicate that several PID-5 facet scales showed fairly high loadings on each of the HEXACO Honesty-Humility, Emotionality, Extraversion, and Conscientiousness factors and on the Schizotypy/Dissociation factor. In contrast, only one facet, PID-5 Hostility, showed a strong

loading on the Agreeableness factor, and there were no PID-5 facets whose loadings on the Openness to Experience factor were greater than .30.

JOINT FACTOR ANALYSIS OF PID-5 AND FFM FACET-LEVEL SCALES

As explained in the Introduction, we also planned to conduct a joint factor analysis of the FFM (i.e., NEO-PI-3FH) and the PID-5, with the aim of obtaining seven factors and comparing them with those of the HEXACO-plus-Schizotypy/Dissociation space.

We conducted a common factor analysis involving the 30 NEO-PI-3 facet scales and the 25 PID-5 facet scales. The first 12 eigenvalues obtained from this analysis were 10.08, 6.73, 5.14, 3.98, 2.43, 2.08, 1.48, 1.44, 1.11, 1.07, 1.05, and 0.99. Thus, the scree plot suggested as many as eight factors. At the end of this section, we note the results of the eight-factor solution. However, because the primary purpose of the analysis is to examine whether the combined NEO-PI-3 and PID-5 variable set can recover the same seven-factor structure as that defined by the HEXACO and Schizotypy/Dissociation variables, we focus here on the seven-factor solution. Table 4 shows the loadings of the NEO-PI-3 and PID-5 facets on seven varimax-rotated factors.

The first factor was defined by facets from the NEO-PI-3 Neuroticism and PID-5 Negative Affectivity domains. (Note, however, that the NEO-PI-3 facets of Angry Hostility and Impulsivity did not show their primary loadings on this factor.) The second factor was primarily defined by facets in NEO-PI-3 Extraversion and (low) PID-5 Detachment. We note that the PID-5 variables that loaded on the first factor were generally those that were associated with HEXACO Emotionality and low Extraversion, and the PID-5 variables that loaded on the second factor were generally those that were associated with HEXACO Extraversion and high Emotionality. Thus, if considered from the perspective of the HEXACO framework, the first factor can be interpreted as an introverted form of Emotionality, and the second factor can be interpreted as an emotional form of Extraversion.[5]

The third factor was defined by several facets from PID-5 Antagonism and two facets from NEO-PI-3 Agreeableness, namely, Straightforwardness and Modesty. The latter two scales have been found to show strong correlations with Honesty-Humility in previous studies (Ashton & Lee, 2005; De Vries et al., 2009; Miller, Gaughan, Maples, & Price, 2011). Therefore, this factor strongly resembles the Honesty-Humility factor of the HEXACO model.

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5. From the perspective of the FFM, HEXACO Extraversion would represent a blend of FFM Extraversion and (low) Neuroticism, and HEXACO Emotionality would represent a blend of FFM Neuroticism and Extraversion (with some additional element of FFM Agreeableness). We believe that the HEXACO factor axis locations are to be preferred on the grounds of their theoretical interpretability (see Ashton & Lee, 2007); moreover, we note that HEXACO Emotionality is roughly independent of the other HEXACO dimensions, whereas FFM Neuroticism tends to be negatively correlated with other FFM dimensions.

TABLE 4. Joint Factor Analysis of the NEO-PI-3FH and PID-5 Facets

	Factor						
	1	**2**	**3**	**4**	**5**	**6**	**7**
Anxiousness	**.77**	−.21	−.02	.02	−.17	.15	.02
Vulnerability (N6)	**.74**	−.05	.13	−.13	−.14	.05	.01
Anxiety (N1)	**.73**	−.03	.18	.11	−.10	−.03	−.01
Depression (N3)	**.72**	−.29	.08	−.24	−.12	.01	.09
Self-Consciousness (N4)	**.68**	**−.30**	.18	−.11	.05	−.06	−.09
Emotional lability	**.67**	.04	.04	−.08	−.25	**.38**	.08
Separation insecurity	**.60**	.14	−.15	−.12	.01	.13	−.07
Depressivity	**.54**	**−.47**	−.06	**−.34**	.01	.15	.12
Submissiveness	**.47**	−.15	−.11	−.17	**.32**	.04	−.04
Assertiveness (E3)	**−.40**	**.36**	**−.35**	.24	−.22	.02	.04
Withdrawal	.15	**−.82**	−.08	.01	−.05	.13	.01
Warmth (E1)	−.05	**.75**	.04	−.05	.13	−.08	.16
Anhedonia	**.37**	**−.71**	−.01	−.23	−.04	.08	−.01
Gregariousness (E2)	−.11	**.70**	−.07	−.14	.08	−.01	−.07
Positive Emotions (E6)	−.07	**.65**	.06	.14	.02	.04	.15
Restricted affectivity	**−.30**	**−.59**	**−.36**	−.12	.13	.17	−.08
Intimacy avoidance	.05	**−.52**	.00	−.05	.05	.16	−.05
Altruism (A3)	.15	**.47**	**.31**	.00	.25	−.01	.14
Activity (E4)	−.14	**.46**	−.15	**.30**	−.19	.03	−.08
Actions (O4)	−.24	**.35**	.02	−.15	.14	−.07	.24
Risk taking	**−.32**	**.33**	−.25	−.26	−.20	.20	.08
Excitement-Seeking (E5)	−.06	**.32**	−.23	−.11	−.13	.04	.03
Deceitfulness	.14	−.09	**−.82**	−.23	.01	.09	−.11
Manipulativeness	−.01	.03	**−.82**	−.01	−.10	.10	.02
Straightforwardness (A2)	.05	.04	**.80**	.01	.17	.11	−.15
Callousness	−.14	**−.34**	**−.63**	−.15	−.28	.22	−.11
Attention seeking	.06	**.43**	**−.60**	−.04	−.05	.27	−.11
Grandiosity	−.13	.13	**−.59**	.12	−.06	**.31**	−.15
Modesty (A5)	.28	−.26	**.47**	−.15	.14	−.12	.07
Tender-Mindedness (A6)	.24	.27	**.37**	.03	.06	.02	.17
Suspiciousness	.25	−.29	**−.32**	−.08	−.26	.29	−.07
Competence (C1)	**−.31**	.09	−.01	**.74**	−.05	−.03	−.04
Self-Discipline (C5)	−.19	.12	−.08	**.67**	−.04	.05	−.03
Distractibility	.24	−.09	−.07	**−.64**	.05	**.43**	−.02
Deliberation (C6)	.01	−.25	.08	**.59**	.27	−.19	−.15
Irresponsibility	.02	−.07	−.29	**−.57**	−.07	.28	−.07
Impulsivity	.02	.19	−.16	**−.56**	−.29	**.44**	.01
Achievement Striving (C4)	−.21	**.32**	−.06	**.56**	−.19	.02	.00
Dutifulness (C3)	.08	−.01	.14	**.50**	.14	.01	−.12
Order (C2)	.06	.01	−.06	**.47**	−.04	−.03	.00
Impulsiveness (N5)	.29	.11	−.02	**−.40**	−.26	.09	.10
Rigid perfectionism	**.36**	−.12	−.14	**.39**	−.13	**.35**	−.01
Angry Hostility (N2)	.24	−.03	−.05	−.10	**−.78**	.05	−.12
Compliance (A4)	−.03	.00	**.31**	.03	**.67**	.03	−.01
Hostility	.27	−.16	**−.37**	−.06	**−.61**	.19	−.11
Trust (A1)	−.12	**.33**	**.32**	−.03	**.38**	−.08	−.03
Perceptual dysregulation	.26	−.23	−.22	**−.30**	.00	**.61**	.23
Unusual beliefs and experiences	.06	−.15	**−.30**	−.12	−.04	**.56**	**.31**
Perseveration	**.44**	−.25	−.15	−.27	−.05	**.55**	−.05
Eccentricity	.07	−.26	−.22	**−.32**	−.08	**.49**	**.41**
Aesthetics (O2)	.16	.08	.10	.02	.05	.14	**.59**
Ideas (O5)	−.20	−.06	−.06	−.07	.08	.04	**.58**
Fantasy (O1)	.06	.17	.07	−.08	−.02	.14	**.54**
Feelings (O3)	**.40**	**.30**	.06	.12	−.20	−.03	**.44**
Values (O6)	−.14	.10	.15	−.07	.06	−.17	**.37**

Notes. N = 378. NEO-PI-3FH = NEO Personality Inventory-3 (First Half); PID-5 = Personality Inventory for *DSM-5*. Loadings with absolute values of .30 or above are given in bold type.

All facets within NEO-PI-3 Conscientiousness and (low) PID-5 Disinhibition showed their highest loadings on the fourth factor. In addition, one facet from NEO-PI-3 Neuroticism, Impulsiveness, also showed its highest loading on this factor. Given the content of its defining scales, this factor can be interpreted as Conscientiousness.

The fifth factor was primarily defined by NEO-PI-3 Angry Hostility, PID-5 Hostility, and (low) NEO-PI-3 Compliance. This factor therefore resembled the low pole of HEXACO Agreeableness.

The sixth factor was defined by all three facets of the PID-5 Psychoticism domain and by the Perseveration facet of the PID-5 Negative Affectivity domain. The seventh factor was defined by all NEO-PI-3 Openness to Experience facets except Openness to Actions, which loaded more strongly on the second factor. Therefore, the sixth and seventh factors can be interpreted as resembling Schizotypy/Dissociation and Openness to Experience, respectively.

Thus, the joint factor analysis involving the NEO-PI-3 and PID-5 produced seven factors that show strong resemblance to those found from the factor analysis involving the HEXACO-PI-R and CES (see Table 2). To quantify the resemblance of the two solutions, we computed factor scores from the NEO-plus-PID-5 solution described earlier and correlated them with factor scores from the seven HEXACO-plus-Schizotypy/Dissociation factors shown in Table 2. These correlations are shown in Table 5. Consistent with the interpretations provided in this article, Factors 3 to 7 showed nearly one-to-one correspondences to Honesty-Humility ($r = .67$), Conscientiousness ($r = .76$), Agreeableness ($r = .75$), Schizotypy/Dissociation ($r = .55$), and Openness to Experience ($r = .71$). Factors 1 and 2 appeared to represent rotated variants of HEXACO Emotionality and Extraversion: Factor 1 correlated positively with Emotionality ($r = .62$) and negatively with Extraversion ($r = −.46$), whereas Factor 2 correlated positively both with Extraversion ($r = .74$) and with Emotionality ($r = .46$). None of the other correlations in Table 5 showed absolute values of .30 or higher, and only five of those correlations showed absolute values of .20 or higher. The pattern of the correlations thus generally supported the interpretations described earlier in this section.

As noted, the eigenvalues from our analysis of the NEO-PI-3FH and PID-5 scales suggested as many as eight factors. We therefore examined the varimax-rotated eight-factor solution. Seven of the factors of that solution were essentially identical to those of the seven-factor solution, and the eighth factor was very small, with no variables having their highest loading (or any absolute loading reaching .35) on that factor.[6]

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6. In the six-factor solution, the Openness to Experience and Schizotypy/Dissociation variables formed a single factor, and in the five-factor solution, the Honesty-Humility and Agreeableness variables also formed a single factor. The solutions are available from the authors.

**TABLE 5. Correlations of NEO-PI-3FH and PID-5 Factors
with HEXACO-plus-Schizotypy/Dissociation Factors**

HEXACO plus S/D Factors	NEO-PI-3FH-plus-PID-5 Factors						
	1	2	3	4	5	6	7
Emotionality	**.62**	**.46**	.27	.09	.02	.01	.03
Extraversion	**−.46**	**.74**	−.19	.09	−.05	.11	−.02
Honesty-Humility	.01	−.03	**.67**	−.05	.00	−.03	.16
Conscientiousness	.02	−.04	.04	**.76**	.00	−.04	.06
Agreeableness	−.25	.04	.22	−.06	**.75**	.02	.07
Schizotypy/Dissociation	.20	−.15	−.18	−.19	−.05	**.55**	.20
Openness to Experience	−.09	.05	.00	.00	.02	.12	**.71**

Notes. N = 378. NEO-PI-3FH = NEO Personality Inventory-3 (First Half); PID-5 = Personality Inventory for *DSM-5*; S/D = Schizotypy/Dissociation. Correlations with absolute values of .30 or above are given in bold type.

DISCUSSION

One of the main findings of this report was that the PID-5 scales spanned most, but not all, of the seven-dimensional space that is defined by the HEXACO factors and the factor of schizotypal and dissociative tendency. In the following discussion, we begin by considering the regions of this seven-dimensional space that were relatively weakly represented within the PID-5, with attention to the question of whether this underrepresentation is problematic. We will then discuss the other main finding of this report, namely, the close correspondence between the HEXACO-plus-Schizotypy/Dissociation factor space and the seven-factor solution from the FFM and PID-5 variables.

OPENNESS TO EXPERIENCE IN THE PID-5

None of the PID-5 scales loaded strongly in either direction on the Openness to Experience factor. In fact, the only PID-5 scale to show any appreciable loading on that factor was Eccentricity. In previous work, high levels of Openness to Experience have been suggested to be relevant to schizotypal tendencies. However, these schizotypal tendencies seem to be captured within the PID-5 scales of the Psychoticism domain—scales that chiefly defined the Schizotypy/Dissociation factor in our extension analyses, with only modest secondary loadings on Openness to Experience. Therefore, it does not seem that the absence of PID-5 scales directly assessing high Openness to Experience limits the comprehensiveness of the PID-5 with regard to schizotypal tendencies.

The absence of any PID-5 scales that are primarily related to Openness to Experience is consistent with meta-analytic findings indicating that FFM Openness to Experience shows essentially no association with schizotypal personality disorders (e.g., Samuel & Widiger, 2008; Saulsman & Page, 2004). Furthermore, it has been found difficult to increase the associations of FFM Openness to Experience scales with scales assessing

schizotypal personality disorders by modifying the Openness to Experience items. For example, Haigler and Widiger (2001) modified items in each of the five NEO-PI-R domain-level scales such that those items would represent excessive (and hence maladaptive) forms of the respective factors, while otherwise preserving the substantive content of the items. The modified Conscientiousness and Agreeableness scales yielded strong correlations with measures of obsessive-compulsive personality disorder (average r = .62 with Conscientiousness) and dependent personality disorder (average r = .56 with Agreeableness), but in contrast, the modified Openness to Experience scale showed only modest associations with measures of schizotypal personality disorder (average r = .28). These results suggest that high levels of Openness to Experience cannot properly be considered as the normal personality substrate of schizotypal and dissociative tendency.[7]

   We should note that, despite the existence of a separate Schizotypy/Dissociation dimension, Openness to Experience may nevertheless be implicated in abnormal personality, if this domain is considered to include a propensity to hold extreme and inflexible attitudes. For example, high Openness might contribute to aggressive rebelliousness, and low Openness might promote dogmatism or authoritarianism (see, e.g., Piedmont, Sherman, Sherman, Dy-Liacco, & Williams, 2009).

HEXACO AGREEABLENESS AND HONESTY-HUMILITY IN THE PID-5

Of the remaining HEXACO factors, Agreeableness was the least widely represented within the PID-5. Of the 25 PID-5 scales, only the Hostility scale loaded strongly on (low) Agreeableness. This result suggests that the PID-5 does not provide particularly differentiated information about respondents' levels of the traits that define this dimension of personality. In the preliminary set of PID-5 facets, a separate facet of Oppositionality had been included, but this was eliminated after the first round of data collection (Krueger et al., 2012), with some of its items apparently subsumed within the Hostility facet. Nevertheless, it seems certain that Oppositionality could be differentiated from Hostility, given that existing personality inventories do discriminate between similar facets: Consider (low) Compliance and Angry Hostility in the NEO-PI-R, or (low) Flexiblity and (low) Patience in the HEXACO-PI-R. In addition, a trait of resentment (perhaps similar to the low pole of Forgivingness in the HEXACO-PI-R Agreeableness factor) would also be relevant to personality pathology and could also be differentiated from other aspects of low Agreeableness. We therefore suggest that scales assessing these or similar constructs be developed for

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7. Of course, one can create scales that represent a blend of Openness to Experience and Schizotypy/Dissociation, by generating items that describe fantasy proneness and paranormal beliefs.

the next version of the PID-5, with particular attention to the task of en-
suring that these variables are roughly independent of those assessing
low Honesty-Humility.

In contrast to the situation for HEXACO Agreeableness, the HEXACO
Honesty-Humility factor seems to be heavily represented within the PID-5.
In our extension analyses, Honesty-Humility was defined (at its negative
pole) by several PID-5 scales, including Deceitfulness, Grandiosity, Ma-
nipulativeness, and to a lesser extent Callousness and Attention Seeking.
Moreover, the PID-5 Antagonism domain as a whole mainly loaded on low
Honesty-Humility, with secondary loadings on low Agreeableness and low
Emotionality. This heavy coverage of low Honesty-Humility seems appro-
priate in an inventory designed to measure traits associated with person-
ality disorder, given that the exploitation of others—a hallmark of low-
Honesty-Humility persons—is prominent in personality pathology.

SCHIZOTYPY/DISSOCIATION IN THE PID-5 AND THE ISSUE OF RESPONSE STYLES

The extension analysis also confirmed the expectation that the PID-5
scales with the strongest loadings on the Schizotypy/Dissociation factor
would be those of the PID-5 Psychoticism domain. In particular, the two
PID-5 scales with the highest extension loadings on this factor were Per-
ceptual Dysregulation followed by Unusual Beliefs and Experiences. How-
ever, it is interesting that in both of our samples, the Schizotypy/Dissocia-
tion factor had appreciable loadings from several PID-5 scales, including
Perseveration, Depressivity, Emotional Lability, and Distractibility, whose
content does not describe psychotic or dissociative tendencies. Moreover,
it is noteworthy that every single PID-5 scale loaded at least slightly in the
positive direction on the Schizotypy/Dissociation factor, including certain
pairs of PID-5 scales whose content is conceptually opposite (e.g., Emo-
tional Lability and Restricted Affect, Distractibility and Rigid Perfection-
ism).

Taken together, these results provide some insights into the constructs
represented by the Schizotypy/Dissociation factor and by the entire set of
PID-5 scales. Consider that the scales defining the Schizotypy/Dissocia-
tion factor (specifically, the three subscales of the Curious Experiences
Scale) consist entirely of positively keyed items having relatively low en-
dorsement levels, and that most PID-5 scales also consist mainly or en-
tirely of such items. These facts suggest that the tendency for all PID-5
scales to load at least slightly on the Schizotypy/Dissociation factor can
be attributed to individual differences in elevation of responses to rela-
tively undesirable, "low base-rate" items in general. However, given that
the PID-5 scale with the strongest extension loading on the Schizotypy/
Dissociation factor was Perceptual Dysregulation—the scale whose con-
tent most closely corresponds to Schizotypy/Dissociation—it does seem
that the Schizotypy/Dissociation factor also has a strong substantive ele-

ment.[8] This problem of response styles could be mitigated somewhat by constructing revised PID-5 scales that are more nearly balanced for direction of item keying.

JOINT FACTOR ANALYSIS OF PID-5 AND NEO-PI-3-FH SCALES

Our joint factor analysis of PID-5 and NEO-PI-3FH scales showed that this combined variable set produced a seven-factor space corresponding closely to that spanned by the six HEXACO factors plus Schizotypy/Dissociation. We find it noteworthy that even though neither the PID-5 nor the NEO-PI-3 was constructed with the aim of defining separate factors corresponding to HEXACO Honesty-Humility and Agreeableness (versus Anger), the two inventories in combination were able to recover both of those factors. Honesty-Humility is represented heavily (if not broadly) by several PID-5 scales as well by NEO-PI-3 Straightforwardness and Modesty, and Agreeableness (versus Anger) is represented by (low) PID-5 Hostility and by NEO-PI-3 Compliance and (low) Angry Hostility. Thus, the combined PID-5/NEO-PI-3 variable set produced six dimensions closely approximating the HEXACO factor space. Researchers will likely disagree as to whether the additional factor, Schizotypy/Dissociation, should be considered a dimension of personality at all (see discussion in Ashton & Lee, 2012), but it is clear that that factor is empirically distinct from the HEXACO (and FFM) dimensions, including Openness to Experience.

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8. In the Canadian sample, the correlations of Schizotypy/Dissociation with the mean of all PID-5 scales (except the three Psychoticism scales) and with the Perceptual Dysregulation scale were .54 and .73, respectively; in the Dutch sample, the corresponding values were .41 and .50, respectively. The problem of elevation of responses to low base-rate items thus appears to be somewhat more pronounced in the Dutch sample, in which mean responses to the items were lower than in the Canadian sample (see Table 1). These results suggest that when a sample has low mean scores on the PID-5 scales, a greater proportion of the variation (and covariation) of these scales is attributable to overall elevation in responses rather than to the specific substantive content of the scales.

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