Technical Supplement

Form 5

HDS

HOGAN DEVELOPMENT SURVEY

HOGAN

THE SCIENCE OF PERSONALITY

Technical Supplement

Form 5

HOGANPRESS

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INTRODUCTION

Since its introduction, the HDS has been used by organizations across the globe to identify and mitigate personality derailers through applicant screening or employee development. The 11 primary scales of the HDS fill a niche in personality assessment by providing valid information that can be used by organizations and individual employees about derailing personality characteristics. Because each HDS scale manifests itself through different behaviors, cataloging these behavioral themes provides a finer-grained description of each person's derailers. For example, two individuals with high Excitable scale scores may behave differently when under stress. One may become emotionally volatile and moody, whereas the other may give up on people or projects. Thus, when interpreting HDS results it is useful to explore deeper levels of how each derailer manifests itself. This technical supplement details the development of a subscale structure for the HDS, presents new psychometric evidence, provides an overview of scale and subscale interpretation, and describes testimonials from experts using HDS subscales in applied contexts.

Development of HDS Subscale Structure

Two separate lines of inquiry led to the development of a subscale structure for the HDS. First, years of interpreting HDS results led to the recognition of predictable behavioral themes associated with each of the 11 primary scales. Second, clients began asking for more detailed information for each HDS scale. These observations signaled a need to review each HDS scale to identify subscales represented by behavioral themes. To address this need, the Hogan Research Division created a task force led by four senior psychologists with Ph.D.s and an average of 24 years of professional experience. They reviewed the content of the scales and identified three behavioral subscale themes for each of the 11 primary scales.

Although most HDS items fit well with this new subscale structure, we piloted over 250 candidate items to better define the new HDS subscale structure. In 18 separate research studies, an average of 2,435 individuals completed the HDS and sets of experimental items as part of personnel selection, employee coaching, leadership development, and other applications. This helped ensure adequate representation of occupational (i.e., job family, job level, tenure) and demographic (i.e., age, sex, race/ethnicity) variables of interest. After each round of testing, we analyzed the psychometric properties of HDS items, subscales, and scales (i.e., descriptive statistics, differences across applications of HDS data, item-scale correlations, subscale and scale reliability) and retained items for further testing that correlated with existing HDS scales.

Following pilot testing, we worked with Dr. Lew Goldberg from the Oregon Research Institute (ORI) to obtain reliability and validity evidence for the HDS subscale structure. Specifically, we obtained data for the HDS subscale structure through the longitudinal Eugene-Springfield Community Sample (ESCS). This sample contains over 1,000 individuals recruited by Dr. Goldberg to participate in longitudinal research, completing over 30 different psychological instruments over several years. One hundred sixty-two of these participants provided HDS subscale data, allowing us to determine the viability of this structure through descriptive statistics, reliability evidence, and convergent and discriminant construct validity via correlations with other instruments completed by ESCS participants. Information obtained from this testing supported the reliability and validity of the new HDS subscale structure. We provide this evidence in subsequent sections of this technical supplement.

These results supported the psychometric properties of the new HDS subscale structure, but conveyed no meaningful information about how individuals behave in stressful situations. To investigate how well the HDS subscale structure describes individual behavior, we collected HDS scale and subscale data from over 2,200 individuals. Many of these individuals completed the HDS for Hogan certification workshops, which include feedback sessions with a certified Hogan coach. We provided HDS scale and subscale data to Hogan coaches prior to these feedback sessions, and surveyed coaches following each session to gauge their impressions of the HDS subscale structure. We asked coaches whether the HDS subscale structure added value to their interpretation of HDS scale results, whether the subscales were more or less accurate than existing HDS scales in describing individuals, and how well subscale information aligned with existing interpretive information for HDS scales. Survey results from Hogan coaches indicated that the subscale structure accurately described individual behavior and added significant value to interpretation of HDS results.

Implementation of the HDS subscale structure began with translation of content to support global use of the new structure. Each 14-item HDS scale is represented by three subscales; two five-item subscales and one four-item subscale. The HDS subscales, their definitions, and sample items appear in Table 1.

Table 1. Subscale Names, Definitions, and Sample Items

HDS Subscale	Definition	Sample Item
Excitable: Volatile	Moody, often angered or annoyed, easily upset and hard to soothe.	I can get angry quickly.
Excitable: Easily Disappointed	Initial passion for people and projects, who inevitably disappoint, and passion then turns to rejection.	Few people have met my expectations.
Excitable: No Direction	Lacking few well defined beliefs or interests, but with regrets about past behavior.	Sometimes I am not sure what I really believe.
Skeptical: Cynical	Prone to doubt others' intentions and assume they have bad ulterior motives.	When someone does me a favor, I wonder what he/she wants.
Skeptical: Mistrusting	Generalized mistrust of people and institutions; being alert for signs of perceived mistreatment.	People who are in charge will take advantage of you if you let them.
Skeptical: Grudges	Holding grudges and being unwilling to forgive real or perceived wrongs.	There are some people I will never forgive.
Cautious: Avoidant	Avoiding new people and situations to avoid imagined potential embarrassment.	I feel awkward around strangers.
Cautious: Fearful	Afraid of being criticized for making mistakes and being reluctant to act independently or make decisions.	People sometimes think I am timid.
Cautious: Unassertive	Unwilling to act assertively and therefore prone to being overlooked or ignored.	People tell me I'm not assertive enough.
Reserved: Introverted	Valuing one's private time and preferring to work alone.	I consider myself a loner.
Reserved: Unsocial	Keeping others at a distance, limiting close relationships, and being generally detached.	I prefer to keep people at a distance.
Reserved: Tough	Indifferent to the feelings and problems of others, focused on tasks rather than people.	Other people's problems don't concern me.
Leisurely: Passive Aggressive	Overtly pleasant and compliant but privately resentful and subversive regarding requests for improved performance.	I sometimes put off doing things for people I don't like.
Leisurely: Unappreciated	Believing that one's talents and contributions are ignored; perceiving inequities in assigned workloads.	People at work expect me to do everything.
Leisurely: Irritated	Privately but easily irritated by interruptions, requests, or work related suggestions.	It irritates me to be interrupted when I am working on something.

Table 1. Subscale Names, Definitions, and Sample Items (Continued)

HDS Subscale	Definition	Sample Item
Bold: Entitled	Feeling that one has special gifts and accomplishments and, consequently, deserves special treatment.	I would never take a job that is beneath me.
Bold: Overconfidence	Unusually confident in one's abilities; belief that one will succeed at anything one chooses to undertake.	I do many things better than almost everyone I know.
Bold: Fantasized Talent	Believing that one has unusual talents and gifts and that one has been born for greatness.	I was born to do great things.
Mischievous: Risky	Prone to taking risks and testing limits; deliberately bending or breaking inconvenient rules.	I try things that other people think are too risky.
Mischievous: Impulsive	Tending to act impulsively without considering the long term consequences of one's actions.	I often do things on the spur of the moment.
Mischievous: Manipulative	Machiavellian tendencies–using charm to manipulate others and no remorse about doing so.	When I want to get my way, I know how to "turn on the charm."
Colorful: Public Confidence	Expecting others to find one's public performances fascinating and not knowing when to be quiet.	In a group, I am often the center of attention.
Colorful: Distractible	Easily distracted, minimal focus, needing constant stimulation, confusing activity with productivity.	I like to have several things going on at the same time.
Colorful: Self-Display	Wanting to be the center of attention and using dramatic costumes and gestures to attract attention to oneself.	I sometimes dress so as to stand out from the crowd.
Imaginative: Eccentric	Expressing unusual views that can be either creative or merely strange; tendency to be absorbed in these ideas.	People describe me as unconventional.
Imaginative: Special Sensitivity	Believing that one has special abilities to see things others don't and understand things others can't.	I sometimes feel I have special talents and abilities.
Imaginative: Creative Thinking	Believing that one is unusually creative; easily bored and confident in one's imaginative problem solving ability.	Many of my ideas are ahead of their time.
Diligent: Standards	Having exceptionally high standards of performance for oneself and others.	I have high standards for my performance at work.
Diligent: Perfectionistic	Perfectionistic about the quality of work products and obsessed with the details of their completion.	I tend to be a perfectionist about my work.
Diligent: Organized	Meticulous and inflexible about schedules, timing, and rules and procedures.	I am fussy about schedules and timing.
Dutiful: Indecisive	Overly reliant on others for advice and reluctant to make decisions or act independently.	On important issues, I dislike making decisions on my own.
Dutiful: Ingratiating	Excessively eager to please one's superiors, telling them what they want to hear, and never contradicting them.	There is nothing wrong with flattering your boss.
Dutiful: Conforming	Taking pride in supporting one's superiors and following their orders regardless of one's personal opinion.	I take pride in being a good follower.

COMPOSITION OF THE HDS SCALES: FACTOR ANALYSES

Factor analysis is a statistical methodology designed to account for the relationships between many variables using a smaller number of "factors." A factor represents something shared in common by different variables; it is a linear combination of items which together define a single construct. Thus, this technique allows us to examine whether responses to different HDS items cluster together into meaningful factors, and to make sense of the many thousands of relationships between individual assessment items.

To test the factor structure of the HDS, we used a sample of 2,524 employed adults and conducted an exploratory Principal Components Analysis (PCA) to determine the underlying constructs (or "principal components") of the HDS. We chose the number of components to extract based on the size of the Eigenvalues and an examination of several alternate solutions. Finally, we refined the components using orthogonal Varimax rotation to find the most economical solution with the goal of associating each HDS subscale to one factor. To address methodological differences, we also conducted Principal Axis Factoring (PAF) on these same data and found the same results in terms of primary and secondary factor loadings as previously found through PCA analyses. Table 2 presents the results of our PCA factor analysis.

Table 2. Varimax Rotated Factor Matrix for HDS Subscales

Scales & Subscales	Factor			
	I	II	III	IV
Excitable: Volatile	.52			
Excitable: Easily Disappointed	.75			
Excitable: No Direction	.52			
Skeptical: Cynical	.61			
Skeptical: Mistrusting	.67			
Skeptical: Grudges	.52			
Cautious: Avoidant	.50			
Cautious: Fearful	.44		.43	
Cautious: Unassertive	.31		.55	
Reserved: Introverted	.59			
Reserved: Unsocial	.71			
Reserved: Tough	.49			
Leisurely: Passive Aggressive	.28		.33	
Leisurely: Unappreciated	.48			
Leisurely: Irritated	.62			
Bold: Entitled		.45		
Bold: Overconfidence		.43		.41
Bold: Fantasized Talent		.63		
Mischievous: Risky		.55		
Mischievous: Impulsive		.68		
Mischievous: Manipulative		.60		
Colorful: Public Confidence		.67		
Colorful: Distractible		.37		-.38
Colorful: Self-Display		.68		
Imaginative: Eccentric		.54		
Imaginative: Special Sensitivity		.54		
Imaginative: Creative Thinking		.56		
Diligent: Standards				.71
Diligent: Perfectionistic				.68
Diligent: Organized				.67
Dutiful: Indecisive			.69	
Dutiful: Ingratiating			.67	
Dutiful: Conforming			.54	

These data provided initial support for the subscale structure of the HDS. Five subscales loaded on more than one factor, possibly due to the factors being constrained to be independent from one another via the Varimax rotation.

The subscales with the highest loadings on factor I are Easily Disappointed, Unsocial, Mistrusting, Irritated, and Cynical. The factor is also defined by significant loadings for the Introverted, Volatile, No Direction, Grudges, and Avoidant subscales. Moderate loadings on this factor are also seen for the Tough, Unappreciated, and Fearful subscales; Unassertive and Passive Aggressive subscales also load on factor I, with cross-loadings on factor III. Overall, this factor describes a syndrome of emotional volatility, mistrust, excess caution, and aloof and passive aggressive behavior. Together, these loadings support the underlying factor described by Horney (1950) as "moving away from people" and managing insecurities by avoiding connections with others.

The subscales with the highest loadings on factor II are Impulsive, Self-Display, Public Confidence, Fantasized Talent, and Manipulative. This factor is also defined by substantial loadings for the Creative Thinking, Risky, Eccentric, and Special Sensitivity subscales. Entitled, Overconfidence, and Distractible subscales also load moderately on factor II, with cross-loadings for Overconfidence and Distractible on factor IV. Overall, this factor describes a dysfunctional disposition of arrogance, manipulation, attention-seeking, and odd and eccentric behavior. Together, these loadings support the underlying factor described by Horney (1950) as "moving against people" by dominating, manipulating, and intimidating others as a means of managing self-doubt.

For factor III, the Indecisive and Ingratiating subscales show the highest loadings, with a significant loading also noted for the Conforming subscale. The Unassertive, Fearful, and Passive Aggressive subscales from factor I also show cross-loadings on this factor. Overall, this factor describes a dysfunctional disposition of dependent and submissive behavior. These loadings support part of the underlying factor described by Horney (1950) as "moving toward people" by managing insecurities by building alliances.

The subscales with the highest loadings on factor IV are Standards, Perfectionistic, and Organized. The Overconfidence and Distractible subscales from factor II cross-load on this factor, with a negative cross-loading on factor IV for Distractible. Overall, this factor describes a dysfunctional disposition of meticulousness, perfectionism, and orderly and hyper-focused behavior. These loadings also support the underlying "moving toward people" factor, or managing insecurities by minimizing the threat of criticism.

Procrustes Analysis

A different approach to factor analysis often used in cross-cultural psychology is Procrustes rotation (Schönemann, 1966). With this analysis, factor loadings for one assessment are compared against the factor loadings for another assessment, and congruence coefficients are computed to determine the degree of similarity between the two assessments. Using an accepted rule of thumb, we can evaluate congruence coefficients to determine whether the two assessments are functionally equivalent. Although some (McCrae, Zonderman, Costa, & Bond, 1996; Mulaik, 1970) have argued that a coefficient of .90 is required for acceptable congruence, others (Chan, Leung, Chan & Yung, 1999; Lorenzo-Seva & ten Berge, 2006) have indicated that coefficients as low as .85 are indicative of "fair similarity." From this, we can extrapolate that congruence coefficients between .85 and .89 are acceptable, with values at or above .90 preferred.

To verify the functional equivalence of the new form of the HDS against the HDS currently in use, we conducted Procrustes analyses using 2,524 cases of data for the new HDS form, comparing the current and new forms of the HDS to the HDS normative dataset. All data were collected from working adults. Using scale-level HDS data, the first step in performing these analyses was to conduct a maximum likelihood extraction of four factors consistent with that performed on the original HDS data. We then rotated the factor loadings for the new HDS form to the matrix for the HDS currently in use. These analyses yielded congruence coefficients for each scale, each factor, and the overall assessment as seen in Table 3. The overall congruence coefficient was .95, indicating that the new form of the HDS demonstrates good structural equivalence with the current form of the HDS. To provide a richer interpretation of the results, we also looked to the factor and scale congruence coefficients. Congruence coefficients for the four factors were .97, .98, .93, and .75 for Moving Away, Moving Against, Diligent, and Dutiful factors, respectively. Because all but one of these coefficients is above the .90 threshold, we can conclude that the bulk of the factor structure of the new HDS form is congruent with that of the current form of the HDS.

Of the 11 HDS scales, 10 had congruence coefficients of .90 or greater, indicating that the new form of the HDS demonstrates structural equivalence with the current HDS at the scale level. The congruence coefficient for one scale (Dutiful) fell below our .90 threshold, but at .82, it can still be considered indicative of fair similarity (Lorenzo-Seva & ten Berge, 2006). Overall, our findings suggest that the new form of the HDS is structurally congruent with the current HDS, with results consistent with those found when comparing the original English HDS against translated forms of the assessment.

Table 3. Procrustes Analysis of New HDS to HDS Currently in Use

Variable	Congruence Coefficient	
	Current HDS Form	New HDS Form
Overall	.98	.95
Moving Away	.99	.97
Excitable	1.00	.90
Skeptical	.99	.96
Cautious	1.00	.98
Reserved	1.00	.94
Leisurely	.99	.97
Moving Against	1.00	.98
Bold	.99	.98
Mischievous	1.00	.98
Colorful	.99	.97
Imaginative	1.00	.97
Diligent Factor	.90	.93
Diligent	.97	.98
Dutiful Factor	.98	.75
Dutiful	.87	.82

HDS SCALE AND SUBSCALE DISTRIBUTIONS AND RELIABILITY

Table 4 presents the number of items in each HDS subscale and scale, descriptive statistics (i.e., means, standard deviations, skewness, kurtosis), internal consistency reliability, average inter-item correlations, and standard errors of measurement.

Skewness refers to departure from symmetry in a score distribution. When a distribution is normal and symmetrical, skewness values are around zero. Positive skewness values indicate that most scores bunch at the bottom end of a distribution, and negative skewness values indicate that most scores bunch on the top end of a distribution. Skewness values greater than +1.0 or less than -1.0 generally indicate a significant departure from symmetry.

Kurtosis refers to how peaked or flat a score distribution is relative to the normal distribution. When scores are normally distributed, kurtosis values will be around zero. When the distribution is sharper than the normal distribution, kurtosis values will be positive. When the distribution is broader than the normal distribution, kurtosis values will be negative. Kurtosis values of more than twice the standard error indicate a significant departure from the normal distribution.

Internal consistency reliability is an estimate of how well all the items of a subscale or scale estimate a common attribute. If all the items of a subscale or scale measure the same construct, internal consistency reliability will be high. However, if the items of a subscale or scale measure different things, internal consistency will be lower.

As a second way of examining internal consistency, we also reviewed correlations between items for each subscale and scale (DeVellis, 1991). If a group of items measures a single attribute, items in the scale should be positively correlated. Average inter-item correlations provide information about how strongly items in the subscale or scale hang together. Clark and Watson (1995) suggest that average inter-item correlations be at least .15, although other rules of thumb advocate lower levels depending on the heterogeneity of the construct.

We also provide two estimates for the standard error of measurement for each HDS scale and subscale. If one person were to complete the HDS repeatedly, the standard deviation of his/her repeated test scores is denoted as the standard error of measurement. We compute the standard error of measurement based on both observed scores and true score estimates (Dudek, 1979).

To examine the distributions and reliabilities for HDS subscales and scales, we administered the new form of the HDS to 2,718 Hogan participants. This sample included business development groups, university classroom participants, and public and private workshops with working adults. On average, participants were 25.53 years of age (SD = 11.51), and the sample included 1,235 males and 1,048 females (435 did not indicate their sex). Based on the data from this sample, we computed descriptive statistics, reliability estimates, and standard errors that appear in Table 4.

Table 4. Classical Scale and Subscale Statistics for the HDS

Scale Subscale	Items	Mean	SD	Skew	Kurtosis	Reliability (α)	Average Inter-Item Correlation	SEM$_1$	SEM$_3$
Excitable	**14**	**5.30**	**3.15**	**0.41**	**-0.55**	**.74**	**.17**	**1.61**	**2.12**
Volatile	5	1.83	1.39	0.51	-0.63	.54	.19	0.94	1.17
Easily Disappointed	5	1.85	1.56	0.50	-0.84	.67	.29	0.90	1.16
No Direction	4	1.65	1.24	0.40	-0.79	.56	.25	0.82	1.03
Skeptical	**14**	**5.96**	**3.10**	**0.37**	**-0.55**	**.75**	**.17**	**1.55**	**2.05**
Cynical	5	2.12	1.36	0.54	-0.51	.60	.23	0.86	1.09
Mistrusting	4	1.73	1.24	0.17	-0.98	.57	.25	0.81	1.02
Grudges	5	2.15	1.47	0.39	-0.80	.59	.22	0.94	1.19
Cautious	**14**	**5.76**	**3.23**	**0.34**	**-0.69**	**.77**	**.19**	**1.55**	**2.06**
Avoidant	4	1.29	1.14	0.59	-0.52	.50	.20	0.81	0.99
Fearful	5	1.66	1.49	0.58	-0.68	.64	.26	0.89	1.14
Unassertive	5	2.85	1.42	-0.06	-1.05	.57	.20	0.93	1.17
Reserved	**14**	**5.16**	**3.00**	**0.51**	**-0.41**	**.72**	**.16**	**1.59**	**2.08**
Introverted	4	1.83	1.09	0.23	-0.65	.42	.15	0.83	0.99
Unsocial	5	1.74	1.47	0.52	-0.73	.63	.25	0.89	1.14
Tough	5	1.63	1.41	0.67	-0.46	.58	.22	0.91	1.15
Leisurely	**14**	**5.49**	**2.75**	**0.25**	**-0.40**	**.64**	**.11**	**1.65**	**2.11**
Passive Aggressive	5	2.21	1.27	0.04	-0.70	.35	.09	1.02	1.19
Unappreciated	5	1.67	1.33	0.51	-0.57	.51	.17	0.93	1.14
Irritated	4	1.64	1.22	0.25	-0.88	.54	.22	0.83	1.03
Bold	**14**	**7.65**	**3.05**	**-0.10**	**-0.63**	**.72**	**.15**	**1.61**	**2.12**
Entitled	5	2.64	1.32	-0.13	-0.69	.47	.15	0.96	1.17
Overconfidence	4	1.78	1.30	0.22	-1.04	.60	.27	0.82	1.04
Fantasized Talent	5	3.27	1.41	-0.44	-0.72	.58	.22	0.91	1.15
Mischievous	**14**	**7.70**	**2.98**	**-0.12**	**-0.67**	**.68**	**.13**	**1.69**	**2.18**
Risky	5	2.83	1.51	-0.21	-0.98	.59	.22	0.97	1.22
Impulsive	4	2.13	1.25	-0.05	-1.02	.50	.20	0.88	1.08
Manipulative	5	2.78	1.22	-0.11	-0.58	.34	.09	0.99	1.15
Colorful	**14**	**6.44**	**2.98**	**0.18**	**-0.54**	**.68**	**.13**	**1.69**	**2.18**
Public Confidence	5	2.12	1.51	0.29	-0.89	.61	.24	0.94	1.20
Distractible	4	2.12	1.10	-0.19	-0.45	.33	.11	0.90	1.04
Self-Display	5	2.24	1.42	0.22	-0.84	.54	.19	0.96	1.20
Imaginative	**14**	**7.34**	**3.17**	**-0.01**	**-0.73**	**.75**	**.17**	**1.59**	**2.10**
Eccentric	4	1.50	1.27	0.50	-0.80	.60	.27	0.80	1.02
Special Sensitivity	5	3.52	1.37	-0.66	-0.48	.60	.23	0.87	1.10
Creative Thinking	5	2.39	1.55	0.05	-1.07	.63	.26	0.94	1.20
Diligent	**14**	**9.37**	**2.87**	**-0.57**	**-0.19**	**.71**	**.16**	**1.55**	**2.02**
Standards	5	3.67	1.04	-0.86	0.79	.35	.13	0.84	0.97
Perfectionistic	5	3.30	1.37	-0.50	-0.65	.56	.20	0.91	1.14
Organized	4	2.42	1.37	-0.41	-1.10	.66	.33	0.80	1.03
Dutiful	**14**	**8.69**	**2.73**	**-0.48**	**-0.19**	**.63**	**.11**	**1.66**	**2.12**
Indecisive	4	2.69	1.20	-0.58	-0.68	.57	.25	0.79	0.99
Ingratiating	5	3.15	1.25	-0.42	-0.43	.35	.10	1.01	1.17
Conforming	5	2.93	1.28	-0.25	-0.60	.43	.13	0.97	1.16

Note: *N* = 2,718; Items = Number of items in subscale/scale; *SD* = Standard Deviation; Skew = Skewness statistic; Kurtosis = Kurtosis statistic; SEM$_1$ = Standard error of measurement to be applied to the estimated true score for an individual given their observed score; SEM$_3$ = Standard error of measurement to be applied to the observed score for an individual.

Descriptive statistics show that distributions for HDS scales and subscales are relatively normal. Mean scale scores range from 5.16 (Reserved) to 9.37 (Diligent), with standard deviations between 2.73 (Dutiful) and 3.23 (Cautious). For subscales, average scores range from 1.29 (Cautious, Avoidant) to 3.67 (Diligent, Standards), with standard deviations between 1.04 (Diligent, Standards) and 1.56 (Excitable, Easily Disappointed). Skewness statistics indicate that score distributions are symmetrical, ranging from -0.57 (Diligent) to 0.51 (Reserved) at the scale level, with subscale-level statistics between -0.86 (Diligent, Standards) and 0.67 (Reserved, Tough). Likewise, kurtosis statistics indicate that HDS scales and subscales are not abnormally peaked for flat, ranging from -0.73 (Imaginative) to -0.19 (Diligent and Dutiful) at the scale level, with subscale-level statistics between -1.10 (Diligent, Organized) and 0.79 (Diligent, Standards).

Cronbach's alpha reliability estimates illustrate that HDS scales and subscales are internally consistent, ranging from .63 (Dutiful) to .77 (Cautious) with an average reliability of .71 across scales. Average inter-item correlations range from .11 (Leisurely and Dutiful) to .19 (Cautious), averaging .15 across scales. For subscales, reliability estimates range from .33 (Colorful, Distractible) to .67 (Excitable, Easily Disappointed) averaging .53 across all subscales. Average inter-item correlations for HDS subscales range from .09 (Leisurely, Passive Aggressive; Mischievous, Manipulative) to .33 (Diligent, Organized), averaging .21 across subscales. These results indicate that responses to items for HDS scales and subscales are consistent and conceptually related.

HDS Parallel Forms Reliability

For assessments with multiple forms, providers must supply evidence that constructs are assessed the same way in each form and that a person's results do not vary widely across forms. To obtain this evidence, each form of the assessment is administered to the same sample of people, and individuals' scores on each form are correlated. Table 5 presents these results. Higher correlations indicate that scores are consistent across forms; lower correlations reflect inconsistencies that may signal problems with construct measurement.

For comparison, Table 5 also presents test-retest reliability for the HDS based on a sample of individuals who completed the current form of the HDS more than once over an interval of three months or less. This interval represents the most typical interval for re-testing in an organization. By comparing test-retest reliabilities of the current HDS against parallel forms reliabilities across HDS forms, one can determine how consistent scale scores are likely to be across forms of the HDS.

Table 5. HDS Test-Retest and Parallel Forms Reliability

Scale	Test-Retest Reliability	Parallel Forms Reliability
Excitable	.71	.85
Skeptical	.67	.89
Cautious	.75	.90
Reserved	.74	.87
Leisurely	.64	.93
Bold	.67	.91
Mischievous	.70	.89
Colorful	.71	.84
Imaginative	.75	.63
Diligent	.72	.97
Dutiful	.66	.73

Note: N = 2,718; Test-Retest Reliability and Parallel Forms Reliability assessed using Pearson correlations.

Parallel forms reliabilities for the HDS range from .63 (Imaginative) to .97 (Diligent), averaging .86 across scales. Some results are very high (i.e., .97 for Diligent) because scale content is nearly identical across forms. By comparison, test-retest reliabilities for the current HDS form range from .64 (Leisurely) to .75 (Cautious and Imaginative), averaging .70 across scales. These results reflect a high degree of score stability between HDS forms. Because scale scores are as consistent across HDS forms as they are across time for the current HDS form, the new form can be considered parallel and equivalent to prior HDS forms.

CONSTRUCT VALIDITY OF THE NEW HDS FORM

Our view of validity (cf. R. Hogan & Hogan, 2009) is that the meaning of a personality scale must be discovered in the pattern of its external correlates (Hogan & Nicholson, 1988). The job of assessment is to predict outcomes, and the more significant the outcomes predicted, the more useful the assessment. We designed the new form of the HDS to predict outcomes, with each scale designed to assess a theme of interpersonal behavior that usually has negative implications for a person's ability to build relationships and establish a career. Thus, the validity of the new form of the HDS depends on having robust external correlates that make sense given our theory of each scale's content (cf. R. Hogan, Hogan, & Roberts, 1996).

Correlations with Other Assessments

In the following sections, we review the external correlates for each HDS scale. Specifically, we provide correlation tables between the new form of the HDS and various personality measures as well as values/ needs/motives/interest inventories. Results from eight tables are presented in this section; additional tables are available that are contained as part of Goldberg's (2008) Eugene-Springfield Community Sample.

Samples and Instruments

Because these analyses examine correlations between the new form of the HDS and other personality and values/needs/motives/interest assessments, the sample was limited to participants who completed both instruments. For each assessment examined, we report sample size and demographic (i.e., age, sex) information.

To verify that the different forms of the HDS measure the same constructs, we also compared correlations reported in these tables to similar content reported in Chapter 3 of the *Hogan Development Survey manual* (R. Hogan & Hogan, 2009). Across scales from these eight personality and values/needs/ motives/interest assessments, average differences in scale-to-scale correlates across HDS forms range from -.02 (Excitable, Cautious, Dutiful) to .03 (Colorful), with an average difference of .00 across scales. Although correlations between certain scales may be slightly higher or lower across forms of the HDS, these analyses confirm that the forms of the HDS measure the same constructs.

HPI. First, we reviewed HDS correlations with the Hogan Personality Inventory (HPI; R. Hogan & Hogan, 2007). A total of 65 participants completed the HDS and HPI. The sample included 24 males and 40 females (1 did not indicate their sex), with ages ranging from 29 to 72 years with a mean of 48.00 years (*SD* = 9.06).

CPI. Second, we reviewed HDS correlations with the California Psychological Inventory (CPI; Gough, 1996). A total of 140 participants completed the HDS and CPI. The sample included 61 males and 73 females (6 did not indicate their sex), with ages ranging from 21 to 72 years with a mean of 46.78 years (*SD* = 10.23).

NEO PI-R. Third, we reviewed HDS correlations with the NEO PI-R (Costa & McCrae, 1992). A total of 133 participants completed the HDS and NEO-PI-R. The sample included 60 males and 67 females (6 did not indicate their sex), with ages ranging from 21 to 72 years with a mean of 47.08 years (*SD* = 10.32).

IPIP. Fourth, we reviewed HDS correlations with the International Personality Item Pool (IPIP; Goldberg et al., 2006)**.** A total of 117 participants completed the HDS and IPIP. The sample included 50 males and 61 females (6 did not indicate their sex), with ages ranging from 22 to 69 years with a mean of 46.49 years (*SD* = 9.74).

16PF. Fifth, we reviewed HDS correlations with the Sixteen Personality Factor Questionnaire (16PF; Conn & Rieke, 1994; Russell & Karol, 2002). A total of 142 participants completed the HDS and 16PF. The sample included 63 males and 73 females (6 did not indicate their sex), with ages ranging from 22 to 72 years with a mean of 46.25 years (*SD* = 9.58).

MVPI. Sixth, we reviewed HDS correlations with the Motives, Values, Preferences Inventory (MVPI; J. Hogan & Hogan, 1996). A total of 51 participants completed the HDS and MVPI. The sample included 26 males and 20 females (5 did not indicate their sex), with ages ranging from 21 to 69 years with a mean of 44.52 years (*SD* = 10.36).

CISS. Seventh, we reviewed HDS correlations with the Campbell Interest and Skill Survey (CISS; Campbell, Hyne, & Nilsen, 1992). A total of 116 participants completed the HDS and CISS. The sample included 53 males and 59 females (4 did not indicate their sex), with ages ranging from 21 to 72 years with a mean of 46.18 years (*SD* = 9.68).

JPI-R. Eighth, we reviewed HDS correlations with the Jackson Personality Inventory - Revised (JPI-R; Jackson, 1994). A total of 157 participants completed the HDS and JPI-R. The sample included 72 males and 79 females (6 did not indicate their sex), with ages ranging from 21 to 72 years with a mean of 46.36 years (*SD* = 9.77).

Table 6. Correlations Between HDS Scales and HPI Scales

Scale	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
ADJ	-.57**	-.55**	-.21	-.15	-.28*	.07	-.38**	-.32*	-.26*	-.16	-.05
AMB	-.28*	-.19	-.60**	-.26*	-.24	.46**	.15	.27*	.20	.13	-.27*
SOC	.16	.09	-.22	-.23	.21	.32**	.53**	.70**	.54**	.10	.00
INP	-.07	-.29*	-.14	-.37**	-.04	.10	.01	.11	-.04	.11	.34**
PRU	-.32*	-.41**	-.03	-.01	-.23	-.05	-.55**	-.46**	-.36**	.15	.06
INQ	-.01	.06	-.09	-.06	.31*	.14	.26*	.48**	.61**	.03	-.15
LRN	.13	.12	-.08	.06	.06	.19	.07	.22	.35**	.10	-.24

Note. N = 65; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; ADJ = Adjustment; AMB = Ambition; SOC = Sociability; INP = Interpersonal Sensitivity; PRU = Prudence; INQ = Inquisitive; LRN = Learning Approach; * = Correlation is significant at .05 level; ** = Correlation is significant at .01 level.

Table 7. Correlations Between HDS Scales and CPI Scales

Scale	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
Dominance	-.31**	-.17*	-.57**	-.23**	-.14	.44**	.29**	.44**	.24**	.03	-.19*
Capacity for Status	-.35**	-.31**	-.40**	-.33**	-.24**	.09	.12	.38**	.05	-.17*	-.12
Sociability	-.29**	-.20*	-.50**	-.42**	-.21*	.20*	.26**	.48**	.13	-.05	-.03
Social Presence	-.32**	-.20*	-.47**	-.28**	-.33**	.09	.26**	.38**	.06	-.22**	-.22**
Self-Acceptance	-.24**	-.14	-.63**	-.28**	-.27**	.28**	.37**	.55**	.23**	-.06	-.21*
Independence	-.35**	-.22**	-.56**	-.07	-.32**	.26**	.14	.23**	.14	-.11	-.39**
Empathy	-.38**	-.29**	-.45**	-.40**	-.31**	.04	.19*	.41**	.04	-.29**	-.17*
Responsibility	-.49**	-.55**	-.11	-.31**	-.20*	.02	-.33**	.01	-.13	-.10	.03
Socialization	-.38**	-.42**	.06	-.19*	-.02	.13	-.25**	-.16	-.26**	.04	.12
Self-Control	-.48**	-.50**	-.04	-.12	-.24**	-.13	-.41**	-.33**	-.27**	-.12	.00
Good Impression	-.55**	-.53**	-.19*	-.19*	-.29**	-.09	-.28**	-.19*	-.22**	-.11	.01
Communality	-.15	-.11	-.19*	-.20*	-.04	.19*	-.02	.08	.02	.13	-.01
Well-Being	-.60**	-.56**	-.37**	-.22**	-.41**	-.01	-.18*	-.01	-.12	-.20*	-.18*
Tolerance	-.48**	-.60**	-.12	-.31**	-.33**	-.25**	-.40**	-.06	-.30**	-.27**	-.04
Achievement via Conformance	-.46**	-.44**	-.19*	-.20*	-.13	.25**	-.17*	.05	-.07	.11	.03
Achievement via Independence	-.43**	-.46**	-.27**	-.19*	-.34**	-.16	-.19*	.12	-.03	-.20*	-.21*
Intellectual Efficiency	-.45**	-.43**	-.37**	-.21*	-.39**	-.01	-.08	.22**	-.05	-.22**	-.27**
Psychological-Mindedness	-.35**	-.40**	-.15	-.03	-.17*	-.05	-.11	.04	.05	-.21*	-.32**
Flexibility	-.12	-.22**	-.15	-.14	-.27**	-.22*	.00	.22**	-.01	-.45**	-.28**
Femininity/ Masculinity	.05	-.07	.40**	-.17*	.04	-.31**	-.45**	-.23**	-.33**	.03	.24**
Externality/ Internality	.15	-.01	.51**	.17*	.07	-.41**	-.44**	-.59**	-.28**	-.01	.19*
Norm-Doubting/ Norm-Favoring	-.29**	-.17*	-.04	-.12	.09	.28**	-.11	-.14	-.10	.27**	.17*
Ego-Integration	-.56**	-.60**	-.28**	-.30**	-.43**	-.17*	-.32**	.02	-.18*	-.28**	-.16

Note. N = 140; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; * = Correlation is significant at .05 level; ** = Correlation is significant at .01 level.

Table 8. Correlations Between HDS Scales and NEO PI-R Scales/Facets

Scale	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
Neuroticism	.61**	.48**	.44**	.16	.33**	-.09	.11	.07	.09	.13	.17*
Anxiety	.50**	.33**	.43**	.09	.29**	-.10	.04	.00	.06	.18*	.21*
Angry Hostility	.54**	.56**	.09	.22*	.28**	.15	.21*	.13	.23**	.26**	-.05
Depression	.58**	.43**	.36**	.20*	.30**	-.10	.12	.06	.10	.19*	.09
Self-Consciousness	.42**	.31**	.59**	.17*	.32**	-.18*	-.02	-.16	-.03	.04	.25**
Impulsiveness	.36**	.33**	.06	-.04	.08	.08	.27**	.34**	.15	-.10	.09
Vulnerability	.31**	.18*	.45**	.06	.18*	-.26**	-.14	-.05	-.09	-.03	.18*
Extraversion	-.20*	-.08	-.44**	-.48**	-.17	.33**	.30**	.41**	.14	.04	.07
Warmth	-.16	-.18*	-.27**	-.57**	-.11	.10	.07	.30**	.07	-.07	.20*
Gregariousness	-.20*	-.19*	-.25**	-.53**	-.15	.14	.14	.29**	-.07	.00	.13
Assertiveness	-.09	-.08	-.53**	-.17*	-.02	.36**	.24**	.37**	.21*	.09	-.14
Activity	-.11	-.04	-.26**	-.09	-.09	.32**	.17*	.23**	.20*	.13	-.07
Excitement-Seeking	.12	.27**	-.13	-.06	.00	.24**	.45**	.21*	.15	.09	.09
Positive Emotions	-.29**	-.08	-.21*	-.36**	-.25**	.08	.05	.12	-.03	-.09	.07
Openness	.00	.00	-.13	-.23**	-.06	.01	.19*	.35**	.30**	-.10	-.17*
Fantasy	.03	.02	-.13	-.09	-.11	-.04	.25**	.36**	.22*	-.26**	-.15
Aesthetics	.01	.01	.05	-.28**	-.06	-.07	-.01	.16	.16	-.01	.02
Feelings	.10	.18*	-.03	-.28**	-.01	.07	.12	.24**	.24**	.11	.02
Actions	-.04	-.05	-.21*	-.25**	-.08	.09	.22*	.30**	.26**	-.12	-.21*
Ideas	-.02	.01	-.21*	.09	.02	.14	.20*	.25**	.34**	.10	-.23**
Values	-.08	-.14	-.04	-.13	-.01	-.09	.01	.11	.04	-.16	-.16
Agreeableness	-.32**	-.44**	.18*	-.24**	-.05	-.32**	-.42**	-.26**	-.34**	-.11	.27**
Trust	-.37**	-.49**	-.20*	-.29**	-.20*	-.06	-.30**	.03	-.19*	-.21*	.05
Straight-Forwardness	-.30**	-.29**	.08	-.15	-.08	-.30**	-.42**	-.29**	-.32**	.00	.05
Altruism	-.26**	-.25**	.00	-.28**	-.09	-.01	-.12	-.06	-.03	-.04	.21*
Compliance	-.38**	-.46**	.23**	-.17	-.04	-.23**	-.33**	-.19*	-.29**	-.15	.28**
Modesty	.10	-.02	.31**	.05	.08	-.34**	-.19*	-.28**	-.25**	-.01	.25**
Tender-Mindedness	-.02	-.19*	.26**	-.12	.14	-.25**	-.22**	-.22*	-.19*	-.02	.20*
Conscientiousness	-.24**	-.11	-.11	.00	-.02	.26**	-.10	-.21*	.04	.54**	.00
Competence	-.23**	-.15	-.22*	.06	-.06	.29**	.00	-.09	.14	.27**	-.11
Order	-.09	.02	.08	-.02	-.03	.10	-.17	-.26**	-.09	.59**	.14
Dutifulness	-.24**	-.14	-.04	.04	-.02	.05	-.23**	-.24**	-.04	.35**	-.03
Achievement Striving	-.02	.07	-.13	.01	.15	.44**	.25**	.07	.32**	.45**	.00
Self-Discipline	-.25**	-.11	-.21*	-.04	-.15	.17	-.14	-.18*	-.05	.34**	-.09
Deliberation	-.28**	-.21*	.02	-.05	.02	.04	-.19*	-.25**	-.10	.30**	.03

Note. N = 133; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; * = Correlation is significant at .05 level; ** = Correlation is significant at .01 level.

Table 9. Correlations Between HDS Scales and IPIP Big 5 20-Item Scales

Scale	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
EXT	-.33**	-.22*	-.57**	-.49**	-.19*	.20*	.28**	.61**	.20*	-.14	-.12
AGR	-.22*	-.24**	-.03	-.49**	-.16	-.01	-.06	.16	-.03	-.09	.23*
CON	-.06	.00	-.15	-.11	.00	.29**	-.07	-.10	-.02	.63**	.06
EMS	-.53**	-.52**	-.31**	-.18	-.31**	.04	-.05	-.01	-.20*	-.34**	-.11
I/I	-.12	-.08	-.34**	-.16	.02	.26**	.25**	.45**	.41**	.00	-.25**

Note. N = 117; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; EXT = Extraversion; AGR = Agreeableness; CON = Conscientiousness; EMS = Emotional Stability; I/I = Intellect/Imagination; * = Correlation is significant at .05 level; ** = Correlation is significant at .01 level.

Table 10. Correlations Between HDS Scales and 16PF Scales

Scale	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
Warmth	-.13	-.12	-.14	-.46**	-.21*	-.08	-.02	.12	-.22**	-.14	.19*
Reasoning	-.24**	-.16	-.10	-.06	-.15	-.02	-.09	.12	.05	-.05	-.28**
Emotional Stability	-.52**	-.43**	-.34**	-.20*	-.43**	.15	-.02	.05	-.12	-.15	-.11
Dominance	.08	.19*	-.51**	-.03	.02	.39**	.36**	.44**	.31**	.14	-.23**
Liveliness	-.02	.01	-.35**	-.27**	-.08	.16*	.30**	.40**	.11	.00	.04
Rule-Consciousness	-.14	-.08	.01	-.15	-.08	.08	-.14	-.09	-.12	.27**	.19*
Social-Boldness	-.35**	-.26**	-.59**	-.49**	-.12	.22**	.16	.45**	.07	-.01	-.07
Sensitivity	-.12	-.10	.13	-.23**	-.12	-.27**	-.26**	.02	-.17*	-.16	-.02
Vigilance	.53**	.59**	.21*	.37**	.37**	.07	.21*	-.14	.16*	.26**	.08
Abstractedness	.18*	.11	.00	.10	.14	-.06	.25**	.25**	.30**	-.26**	-.18*
Privateness	.13	.10	.31**	.43**	.25**	.07	.02	-.32**	.02	.18*	-.06
Apprehension	.43**	.32**	.43**	.07	.39**	-.05	-.01	-.16*	.01	.35**	.19*
Openness to Change	-.03	.00	-.29**	-.17*	-.05	.09	.15	.33**	.36**	-.14	-.24**
Self-Reliance	.20*	.25**	.13	.47**	.23**	.05	-.02	-.16	.12	.11	-.16
Perfectionism	.06	.10	-.04	-.09	.09	.30**	-.05	-.09	.04	.68**	.06
Tension	.32**	.35**	.19*	.21*	.23**	.02	.04	-.03	.14	.21*	-.05

Note. N = 142; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; * = Correlation is significant at .05 level; ** = Correlation is significant at .01 level.

Table 11. Correlations Between HDS Scales and MVPI Scales

Scale	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
AES	.06	.10	.10	-.14	.01	-.26	.20	.32*	.20	-.24	.04
AFF	-.19	-.18	-.32*	-.63**	-.02	.36**	.09	.44**	.08	.04	.10
ALT	-.06	-.10	.06	-.35*	.07	.20	.04	.07	.07	.06	.44**
COM	.31*	.40**	-.25	.08	.27	.47**	.38**	.22	.30*	.48**	.19
HED	.19	.33*	-.14	-.21	.23	.09	.43**	.33*	.23	-.06	.02
POW	.10	.31*	-.27	.10	.23	.53**	.56**	.39**	.42**	.21	.10
REC	.15	.22	-.03	-.19	.27	.53**	.24	.39**	.25	.25	.22
SCI	.07	.16	-.06	.19	.02	.08	.22	.03	.20	.11	-.04
SEC	.16	.08	.23	.12	.30*	.18	-.16	-.04	-.09	.44**	.32*
TRA	-.11	-.18	.01	-.12	-.04	.26	-.02	.04	.06	.19	.28*

Note. N = 51; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; AES = Aesthetics; AFF = Affiliation; ALT = Altruism; COM = Commercial; HED = Hedonism; POW = Power; REC = Recognition; SCI = Science; SEC = Security; TRA = Tradition; * = Correlation is significant at .05 level; ** = Correlation is significant at .01 level.

Table 12. Correlations Between HDS Scales and CISS Interest and Skill Scales

CISS Interest Scales	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
Influencing	-.12	-.03	-.31**	-.01	.09	.30**	.33**	.24**	.16	.04	-.04
Organizing	.11	.12	-.01	.15	.20*	.25**	.14	-.14	.01	.23*	-.04
Helping	-.09	-.12	.00	-.10	-.03	.02	-.08	-.01	-.05	-.03	.09
Creating	-.22*	-.09	-.11	-.29**	-.12	-.09	-.17	.13	-.05	-.05	-.07
Analyzing	.08	.03	-.08	.21*	.03	.12	.17	.00	.21*	.11	-.16
Producing	.03	.15	-.15	.15	-.02	.10	.07	-.01	.20*	.11	-.10
Adventuring	.03	-.02	-.23*	.12	.00	.16	.31**	.00	.07	.02	-.08
CISS Skill Scales											
Influencing	-.19*	.00	-.39**	-.07	.01	.37**	.33**	.39**	.29**	.02	-.13
Organizing	.01	.13	-.14	.12	.21*	.39**	.16	.01	.18*	.34**	-.16
Helping	-.16	-.05	-.22*	-.13	-.05	.13	-.01	.21*	.15	-.02	-.08
Creating	-.15	.00	-.21*	-.16	.00	.28**	.03	.30**	.27**	.16	-.11
Analyzing	-.02	.05	-.19*	.17	.10	.25**	.15	.06	.29**	.19*	-.27**
Producing	-.04	.14	-.23*	.11	.06	.21*	.19*	.13	.31**	.22*	-.20*
Adventuring	-.01	.09	-.29**	.10	-.04	.21*	.28**	.14	.29**	.03	-.14

Note. N = 116; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; * = Correlation is significant at .05 level; ** = Correlation is significant at .01 level.

Table 13. Correlations Between HDS Scales and JPI-R Scales

Scale	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
Analytical Cluster											
Complexity	-.03	-.05	-.08	-.06	.00	.04	.14	.19*	.22**	-.03	-.28**
Breadth of Interest	-.09	-.07	-.17*	-.21**	.10	.14	.21**	.26**	.31**	.05	-.09
Innovation	.05	.11	-.29**	-.07	.10	.33**	.40**	.45**	.59**	.03	-.20**
Tolerance	-.19*	-.29**	-.23**	-.20*	-.14	-.12	.09	.19*	.02	-.16*	-.15
Emotional Cluster											
Empathy	.13	.08	.13	-.33**	.15	.09	-.04	.05	.00	.07	.24**
Anxiety	.50**	.39**	.37**	.11	.39**	-.03	.07	.02	.08	.21**	.07
Cooperative	.20*	.06	.30**	-.16*	.24**	.09	.00	.00	-.11	.14	.37**
Extroverted Cluster											
Sociability	-.11	-.15	-.24**	-.55**	-.04	.17*	.17*	.31**	.01	-.01	.12
Social Confidence	-.23**	-.09	-.67**	-.40**	-.18*	.39**	.27**	.54**	.24**	.03	-.13
Energy Level	-.25**	-.15	-.38**	-.17*	-.11	.33**	.18*	.19*	.16*	.17*	-.14
Opportunistic Cluster											
Social Astuteness	.13	.06	-.03	-.11	.07	.17*	.28**	.18*	.18*	.05	.03
Risk Taking	.16*	.17*	-.27**	.11	.04	.26**	.54**	.30**	.29**	-.06	-.19*
Dependable Cluster											
Organization	-.10	.01	.00	-.01	.00	.20*	-.12	-.19*	-.05	.52**	.05
Traditional Values	.01	.10	.07	-.01	-.01	.11	-.04	-.08	-.04	.18*	.28**
Responsibility	-.15	-.20*	-.09	-.29**	-.09	.14	-.10	.01	.00	.11	.36**

Note. N = 157; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; * = Correlation is significant at .05 level; ** = Correlation is significant at .01 level.

RESULTS OF SCALE-TO-SCALE CORRELATES

Excitable. The Excitable scale predicts behaviors ranging from calmness and emotional stability to moodiness and emotional volatility. Excitable people are enthusiastic about new relationships or projects only to discover flaws and become discouraged and upset. Consequently, the highly Excitable person will tend to reject that which he or she formerly idealized.

Table 6 indicates that the Excitable scale correlates most negatively (-.57) with HPI Adjustment, a measure of emotional stability. Table 7 shows strong correlations with the CPI Well-Being, Ego-Integration, and Good Impression scales at magnitudes greater than -.50. Table 8 presents correlations with the NEO PI-R, where one can see high correlations with Neuroticism (.61) and its facets. Tables 9 and 10 show nearly identical results for the IPIP (-.53) and 16PF Emotional Stability (-.52) scales, respectively. Table 11 indicates a positive relationship with the MVPI Commercial scale and a negative relationship with the Affiliation scale with correlations of .31 and -.19, respectively. Table 12 shows correlations with the CISS interest and skill scales, with negative relations with Creating Interests (-.22) and Influencing Skills (-.19). Table 13 presents correlations with the JPI-R scales, with the highest correlation with the Anxiety scale (.50) in the Emotional Cluster.

Skeptical. The Skeptical scale predicts behaviors ranging from trust and optimism to being fault-finding and mistrustful. Skeptical people believe that the world is full of people who will trick and deceive them, steal from them, or otherwise harm them. As a result, they are suspicious and alert for signs of betrayal in friends, family, coworkers, and employers.

Table 6 indicates that the Skeptical scale correlates most negatively (-.55) with HPI Adjustment, with other strong correlations for Prudence (-.41) and Interpersonal Sensitivity (-.29). Table 7 shows that the highest correlations with CPI scales are for Tolerance and Ego-Integration (-.60), with correlations for Well-Being, Responsibility, Good Impression, and Self-Control at or beyond -.50. Table 8 presents correlations with the NEO PI-R, with strong negative correlations with Agreeableness (-.44) and facets of Trust (-.49) and Compliance (-.46), and strong positive correlations with Neuroticism (.48) and facets of Angry Hostility (.56) and Depression (.43). Table 9 shows strong correlates with IPIP Emotional Stability (-.52), Agreeableness (-.24), and Extraversion (-.22) scales. Table 10 presents correlations with the 16PF, with notable relationships with Vigilance (.59) and Emotional Stability (-.43). Table 11 shows strong relationships with the MVPI Commercial (.40), Hedonism (.33), and Power (.31) scales. Table 12 suggests no strong relations with self-reported interests or skills. Table 13 presents correlations with the JPI-R scales, with positive correlations with Anxiety (.39) and Risk-Taking (.17) scales, and negative correlations with Tolerance (-.29) and Responsibility (-.20).

Cautious. The Cautious scale predicts behaviors ranging from confidence and assertiveness to a reluctance to try new things. Cautious people doubt their own abilities and are concerned about making mistakes and being criticized. At work, such people will adhere to rules and resist innovation out of a concern for making errors.

Table 6 indicates that the Cautious scale correlates most negatively (-.60) with HPI Ambition. Table 7 shows correlations of at least -.50 with CPI Self-Acceptance, Dominance, Independence, and Sociability scales, as well as a positive correlation (.51) with CPI Externality/Internality, measuring a range from involvement to detachment. Table 8 presents correlations with the NEO PI-R, with strong correlations with

Self Consciousness (.59) and Assertiveness (-.53). Table 9 illustrates a negative pattern of correlations with IPIP scales, most notably Extraversion (-.57). The 16PF correlations in Table 10 follow these patterns with correlations with Social Boldness (-.59), Dominance (-.51), and Apprehension (.43). Table 11 shows strong correlations with MVPI Affiliation (-.32), Commercial (-.25), and Security (.23). Table 12 indicates a lack of relationships with interests or skills in influencing others or adventurous or risky activities. Table 13 illustrates a negative pattern of correlations with the JPI-R Extroverted Cluster and a strong positive correlation for Anxiety (.37).

Reserved. The Reserved scale predicts behaviors ranging from sensitivity to seeming unconcerned about people. Reserved people seem indifferent to others' feelings and are unaware of how others react to them. They communicate poorly (if at all), are unrewarding to deal with, and have trouble building or maintaining a team.

Table 6 indicates that the Reserved scale correlates most strongly with HPI Interpersonal Sensitivity (-.37), Ambition (-.26), and Sociability (-.23). Table 7 indicates high correlations with CPI Sociability (-.42) and Empathy (-.40). Table 8 shows correlations with the NEO PI-R, with strong relations with Extraversion (-.48), Warmth (-.57), and Gregariousness (-.53) facets. Correlations with the IPIP in Table 9 show the highest correlations for Extraversion (-.49) and Agreeableness (-.49). Results for the 16PF in Table 10 highlight themes of Social Boldness (-.49), Warmth (-.46), Self Reliance (.47), and Privateness (.43). Table 11 illustrates correlations with the MVPI, with strong relationships with Affiliation (-.63) and Altruism (-.35). Table 12 presents correlations with the CISS, where the strongest correlations are for Creating (-.29) and Analyzing (.21) interests. Table 13 contains correlations with the JPI-R, with notable relationships with the Extroverted cluster, particularly Sociability (-.55) and Social Confidence (-.40). The negative correlation with Empathy (-.33) further indicates a lack of interest in the needs of others.

Leisurely. The Leisurely scale predicts behaviors ranging from being cooperative and cheerful to stubborn and resentful. Such people are preoccupied with their own goals and resent being interrupted. They often procrastinate and put off working on tasks that don't interest them. As managers they tend to set up their staff for failure by not telling them what they want, then criticizing them for not delivering results.

Table 6 indicates that the Leisurely scale correlates highly with HPI Inquisitive (.31) and Adjustment (-.28), which combined with negative correlations with Ambition, Interpersonal Sensitivity, and Prudence, suggest a theme of alienation. Correlations with the CPI in Table 7 reveal negative relations with Ego-Integration (-.43), Well-Being (-.41), Intellectual Efficiency (-.39), and Achievement via Independence (-.34). Table 8 presents correlations with the NEO PI-R, where relations with Neuroticism (.33), Self-Consciousness (.32), and Depression (.30) are apparent. Table 9 details correlations with IPIP Emotional Stability (-.31) and Extraversion (-.19). Table 10 provides correlations with the 16PF, with strong relationships with Emotional Stability (-.43), Apprehension (.39), and Vigilance (.37). Table 11 shows a strong correlation with MVPI Security (.30), suggesting a need for stability. Table 12 shows correlations with the CISS where relations with Organizing interests (.20) and skills (.21) are seen. Table 13 contains correlations with JPI-R scales showing the highest relations with Anxiety (.39), Cooperative (.24), and Social Confidence (-.18) scales.

Bold. The Bold scale predicts behaviors ranging from modest self-restraint to arrogant self-promotion. Bold people are entitled, fail to recognize their failures, take more credit for success than is fair, and don't learn from experience. Bold people often rise rapidly in organizations, but others find them hard to work with because they can be overbearing, demanding, and unrealistic.

Table 6 shows that the Bold scale correlates highly with HPI Ambition (.46) and Sociability (.32). Table 7 shows a negative correlation with CPI Externality/Internality (-.41) and a positive correlation with Dominance (.44). Table 8 shows correlations with NEO PI-R scales and facets, with strong correlations for Extraversion (.33) and Agreeableness (-.32) scales, as well as significant correlations with Achievement Striving (.44), Assertiveness (.36), Modesty (-.34), and Activity (.32) facets. Table 9 shows correlations with IPIP Conscientiousness (.29), Intellect (.26), and Extraversion (.20) scales. Correlations with the 16PF in Table 10 indicate a strong relationship with the Dominance (.39) scale. Table 11 indicates high correlations with MVPI Power (.53), Recognition (.53), and Commercial (.47) scales. Correlations with the CISS in Table 12 reveal interests and skills in Influencing (.30, .37) and Organizing (.25, .39). Table 13 indicates strong correlations with the JPI-R Extroverted Cluster scales of Social Confidence (.39) and Energy Level (.33).

Mischievous. The Mischievous scale predicts a continuum ranging from unassuming and responsible behavior to impulsive and risky behavior. The Mischievous person is bright, witty, and engaging, sees others as utilities to be exploited, has problems maintaining commitments, and is unconcerned about violating expectations.

Table 6 indicates that the Mischievous scale correlates highly with HPI Prudence (-.55), Sociability (.53) and Adjustment (-.38). Table 7 indicates strong correlations with the CPI Femininity/Masculinity (-.45), Externality/Internality (-.44), Self-Control (-.41), and Tolerance (-.40) scales. Table 8 shows correlations with the NEO PI-R, with positive relations with the Extraversion scale (.30) and Excitement-Seeking facet (.45), and negative relations with the Agreeableness scale (-.42) and Straightforwardness (-.42), Compliance (-.33), and Trust (-.30) facets. Table 9 indicates strong correlations with the IPIP Extraversion (.28) and Intellect (.25) scales. Table 10 presents correlations with the 16PF, with high correlations with Dominance (.36) and Liveliness (.30). Table 11 indicates strong correlations with MVPI Power (.56), Hedonism (.43), and Commercial (.38). Table 12 presents correlations with CISS interest and skill scales, with positive relations with interests and skills at Influencing (.33 and .33, respectively) and Adventuring (.31 and .28, respectively). Table 13 shows correlations with the JPI-R, where correlations with Risk Taking (.54), Innovation (.40), Social Astuteness (.28), and Social Confidence (.27) stand out.

Colorful. The Colorful scale predicts a range of behaviors from quiet self-restraint to dramatic self-expression. People with high scores on the Colorful scale need frequent social contact and prefer to be the center of attention. They are skilled at making dramatic entrances and exits and otherwise calling attention to themselves. Interpersonally they are gregarious and charming, but superficial in their interest in others.

Table 6 indicates that the Colorful scale correlates highly with HPI Sociability (.70). Correlations with the CPI in Table 7 show strong relationships with Externality/Internality (-.59), Self-Acceptance (.55), Sociability (.48), Dominance (.44), and Empathy (.41). Table 8 presents correlations with the NEO PI-R, with strong relationships with the Extraversion scale (.41) and facets of Assertiveness (.37) and Warmth (.30), as well as notable correlations with the Openness scale (.35) and Fantasy (.36) and Actions (.30) facets. Table 9 shows correlations with the IPIP scales, indicating strong relationships with Extraversion (.61) and Intellect (.45). Correlations with the 16PF in Table 10 reflect relations with Social-Boldness (.45), Dominance (.44), and Liveliness (.40) scales. Table 11 indicates strong correlations with MVPI Affiliation (.44), Recognition (.39), and Power (.39) scales. Correlations with the CISS in Table 12 illustrate relations with interests and skills in Influencing (.24 and .39, respectively). Table 13 reflects strong relationships with JPI-R Social Confidence (.54) and Innovation (.45).

Imaginative. The Imaginative scale predicts a range of behaviors from sensible to eccentric behavior. People with high Imaginative scores tend to behave in unusual ways, but these actions are not typically self-conscious, affected, or designed to attract attention. These people are often bright and are original in their ideas and insights, but their ideas may be inappropriate or even disruptive.

Table 6 indicates that the Imaginative scale correlates highly with HPI Inquisitive (.61), Sociability (.54), Prudence (-.36), and Learning Approach (.35). Table 7 indicates correlations with CPI Femininity/ Masculinity (-.33), Tolerance (-.30), Externality/Internality (-.28), Self-Control (-.27), and Socialization (-.26) scales. Table 8 shows positive correlations with the NEO PI-R Openness scale (.30) and Ideas facet (.34), and the Achievement Striving facet (.32) of Conscientiousness, as well as negative correlations with the Agreeableness scale (-.34) and Straightforwardness facet (-.32). Table 9 indicates high correlations with the IPIP Intellect (.41), Emotional Stability (-.20) and Extraversion (.20) scales. Table 10 presents correlations with the 16PF, with strongest relationships with the Openness to Change (.36), Dominance (.31), and Abstractedness (.30) scales. Table 11 indicates high correlations with MVPI Power (.42) and Commercial (.30). Correlations with the CISS interest and skill scales in Table 12 show strong relationships with skills, particularly Producing (.31), Adventuring (.29), Analyzing (.29), and Influencing (.29). Table 13 presents correlations with the JPI-R, where strong correlations with Innovation (.59) and Breadth of Interest (.31) are noted.

Diligent. The Diligent scale predicts a range of behaviors from a willingness to delegate to micromanaging behavior. People with high Diligent scores are well-organized and perfectionistic. Their meticulous attention to detail is useful and even important in many jobs, but leads to trouble prioritizing work and delegating which deprives their subordinates of opportunities to learn.

Table 6 presents correlations with the HPI, where despite a lack of statistically significant correlations the Diligent scale still relates positively with Prudence (.15) and negatively with Adjustment (-.16). Table 7 illustrates correlations with CPI Flexibility (-.45), Empathy (-.29), Ego-Integration (-.28), Tolerance (-.27), and Norm-Doubting/Norm-Favoring (.27). Table 8 shows high correlations with the NEO PI-R Conscientiousness scale (.54) and facets of Order (.59) and Achievement Striving (.45). The correlation with IPIP Conscientiousness (.63) in Table 9 corroborates these results. Table 10 presents relations with the 16PF, with correlations with Perfectionism (.68), Apprehension (.35), Rule-Consciousness (.27), Abstractedness (-.26), and Vigilance (.26). Correlations with the MVPI in Table 11 illustrate strong relationships with the Commercial (.48) and Security (.44) scales. Table 12 shows strong relationships with both interests and skills on the CISS Organizing scale (.23 and .34, respectively). Table 13 presents correlations with the JPI-R, where a high correlation with the Organization scale (.52) under the Dependable cluster is observed.

Dutiful. The Dutiful scale predicts a range of behaviors from independence to conformity. Dutiful people are compliant and eager to please. Because they are so agreeable, they rarely make enemies and tend to rise in organizations. As managers, they will be tactful and considerate but, because they are so eager to please their bosses, they avoid standing up for their subordinates.

Table 6 presents correlations with the HPI, which indicate that the Dutiful scale is associated with Interpersonal Sensitivity (.34) and Ambition (-.27). Table 7 shows strong correlations with CPI Independence (-.39), Psychological-Mindedness (-.32), Flexibility (-.28), and Intellectual Efficiency (-.27). Table 8 shows significant correlations with the NEO PI-R Compliance (.28), Agreeableness (.27), Self-Consciousness (.25), and Modesty (.25) scales and facets. Table 9 contains correlations with the IPIP

scales, with significant relationships for the Intellect (-.25) and Agreeableness (.23) scales. Table 10 presents notable correlations with the 16PF Reasoning (-.28), Openness to Change (-.24), and Dominance (-.23) scales. Table 11 indicates strong correlations with MVPI Altruism (.44), Security (.32), and Tradition (.28) scales. Table 12 provides correlations with the CISS interest and skill scales, with strong relationships noted for skills in Analyzing (-.27) and Producing (-.20). Table 13 presents correlations with the JPI-R scales, with strong relationships with Cooperativeness (.37), Responsibility (.36), Complexity (-.28), and Traditional Values (.28).

Correlations with Others' Descriptions

In this section, we present correlations between scale scores on the new HDS form and ratings of a person provided by observers. These analyses provide information for evaluating construct validity of the new HDS scales, as well as guidance for interpretation of HDS scales. We provide correlations between HDS scales and adjective checklists and descriptive phrases. Additional correlations are available from Goldberg's (2008) Eugene-Springfield Community Sample.

Samples and Instruments

To verify that the forms of the HDS consistently and accurately reflect observers' descriptions of an individual, we compared correlations reported in these tables to similar content reported in Chapter 3 of the *Hogan Development Survey manual* (R. Hogan & Hogan, 2009). Across scales, average differences in scale-to-observer-rating correlates across HDS forms range from -.04 (Imaginative) to .00 (Reserved, Bold, Diligent), with an average difference of -.02 across descriptors. Although correlations with certain descriptors may be slightly higher or lower across HDS forms, these analyses confirm that the forms of the HDS accurately and consistently reflect observer descriptions of a target individual.

Adjectival Descriptions and Personality Phrases. Two sets of correlations are provided for data collected in Goldberg's ESCS study. Respondents and observers (e.g., significant others, spouses, friends, acquaintances, coworkers) completed the *Self/Peer Inventories*, composed of 88 items taken from Saucier's (1994) 40-item Big-Five "Mini-Markers" and the 44-item Big-Five Inventory (Benet-Martinez & John, 1998; John & Srivastava, 1999), as well as two additional items in each inventory measuring physical attractiveness. Respondents described how well each adjective or phrase described themselves or the target individual using a 5-point Likert scale ranging from 1 (Extremely Inaccurate) to 5 (Extremely Accurate). Big-Five Mini-Marker adjectival description results appear in Table 14 and the Big-Five Inventory personality phrases appear in Table 15.

Each participant and up to four observers of each participant completed these 88 items. The sample of 699 participants providing self ratings included 291 males and 395 females. Ages of subjects ranged from 18 to 85 years with a mean of 51.18 years (*SD* = 12.72). Observers also responded to items assessing how and how well they knew the target, how much they liked the target, and demographic questions on gender and age. The sample of 1,756 respondents providing observer ratings included 655 males and 1,095 females (6 did not indicate their sex). Ages of observers ranged from 6 to 94 years with a mean of 48.31 years (*SD* = 17.77). Observers were evenly split between spouses and other relatives (*N* = 883) compared with friends, coworkers, acquaintances, and significant others (*N* = 854), with 19 not indicating their relationship to the target. Most observers indicated knowing the target "well" or "very well" (*N* = 1,740), and most indicated that they "liked" the target or liked the target "very much" (*N* = 1,671).

For each of the 88 items, observer ratings were averaged across all observers. We used these mean responses as the basis for calculating correlations between observer ratings and the HDS scale scores.

Table 14. HDS Correlations with Observer Ratings for Big-Five Mini-Marker Adjectives

	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
Bashful	.14	.03	.37**	.14	.02	-.02	-.09	-.29**	-.04	-.01	.20*
Bold	-.02	.00	-.26**	-.16*	.00	.10	.24**	.36**	.16	-.08	-.15
Careless	.00	.00	-.08	-.06	-.10	-.15	.03	.09	.05	-.25**	-.09
Cold	.09	.08	-.10	.10	.09	.12	.07	.04	.18*	.04	-.13
Complex	.00	.00	-.08	-.02	-.04	.05	-.02	.11	.14	.02	-.19*
Cooperative	-.13	-.09	.06	-.17*	-.16*	.00	-.05	-.10	-.18*	.06	.26**
Creative	-.04	-.02	-.13	-.16	.00	.16	.09	.24**	.31**	.05	-.06
Deep	-.08	-.12	.07	-.04	-.07	-.01	-.05	.10	.11	-.11	-.03
Disorganized	-.03	-.02	.01	-.01	.06	-.11	.10	.20*	.20*	-.27**	-.12
Efficient	-.08	-.03	-.14	-.16	-.09	.15	-.10	-.17*	-.12	.31**	.11
Energetic	-.07	.06	-.20*	-.20*	-.06	.13	.22**	.22**	.15	.02	.10
Envious	.12	.08	-.13	-.08	.08	.10	.05	.04	.12	.08	-.19*
Extraverted	-.05	.07	-.39**	-.34**	-.04	.08	.19*	.35**	.15	.10	.01
Fretful	.21**	.13	.16	.00	.23**	.10	.10	.01	.16*	.12	.01
Good-looking	.01	-.05	.07	-.10	-.10	-.16	-.06	-.09	-.24**	-.06	.18*
Harsh	.16*	.14	-.13	.10	.16	.12	.12	.06	.32**	.05	-.17*
Imaginative	-.07	-.01	-.12	-.11	.04	.17*	.12	.27**	.32**	.05	.00
Inefficient	.04	.02	.16*	-.03	.07	-.21*	.10	.11	.03	-.34**	-.05
Intellectual	-.13	-.08	-.05	.08	.01	.07	.03	.05	.10	-.02	-.09
Jealous	.11	.06	-.04	-.02	.09	.12	.09	.10	.19*	.17*	-.13
Kind	-.06	-.05	.03	-.18*	-.08	-.02	.01	.04	-.09	-.03	.23**
Moody	.25**	.23**	.07	.19*	.17*	-.02	.11	.08	.16*	-.01	-.10
Organized	-.01	.01	-.01	-.04	-.02	.14	-.07	-.23**	-.16	.34**	.21**
Philosophical	-.16	-.19*	.00	-.14	-.05	.04	.01	.21*	.09	-.08	-.06
Practical	-.18*	-.19*	.00	-.03	.00	.08	-.16	-.14	-.14	.22**	.00
Quiet	.03	-.12	.31**	.23**	.01	-.03	-.19*	-.29**	-.02	.02	.12
Relaxed	-.13	-.08	-.09	-.01	-.17*	.04	-.03	-.09	-.09	.05	.06
Rude	.07	.03	-.14	.01	.12	-.01	.09	.15	.25**	-.11	-.18*
Shy	.04	-.02	.29**	.14	-.03	-.03	-.12	-.30**	-.04	-.05	.07
Sloppy	.01	.01	.05	.07	.03	-.18*	.04	.14	.04	-.45**	-.17*
Sympathetic	-.06	-.03	.15	-.24**	.00	.01	-.09	.10	-.01	-.04	.22**
Systematic	.00	-.03	-.09	-.03	.02	.22**	.00	-.17*	-.04	.31**	.07
Talkative	-.13	.04	-.22**	-.33**	.07	.02	.11	.31**	.07	.08	-.02
Temperamental	.26**	.22**	-.07	.14	.23**	.14	.18*	.09	.26**	.08	-.15
Touchy	.10	.04	-.03	.00	.10	.11	.05	.12	.17*	.08	-.18*
Unattractive	-.06	.02	-.08	.06	.08	.04	.00	-.02	.09	.07	-.19*
Uncreative	.00	-.04	.13	.02	.03	-.21*	-.12	-.23**	-.21**	-.12	.06
Unenvious	-.20*	-.18*	-.01	.05	-.22**	-.12	-.15	-.22**	-.11	-.04	.08
Unintellectual	.16	.13	.01	.00	-.04	-.07	-.10	-.13	-.11	-.06	.11
Unsympathetic	.17*	.10	-.02	.24**	.01	.02	.04	-.07	.05	.02	-.25**
Warm	-.07	-.02	.00	-.34**	-.08	-.06	-.05	.05	-.13	-.02	.25**
Withdrawn	.17*	.06	.32**	.34**	.19*	-.07	-.06	-.27**	.04	-.16*	-.09

Note. N = 148; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; * Correlation is significant at .05 level; ** Correlation is significant at .01 level.

Table 15. HDS Correlations with Observer Ratings for Big-Five Inventory Phrases

	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
Finds faults with others	.16*	.09	-.07	.03	.15	.08	.10	.16*	.19*	.06	-.24**
Does a thorough job	.00	.01	-.02	-.09	-.03	.14	.06	-.03	-.02	.30**	.19*
Is depressed/blue	.28**	.26**	.16	.15	.23**	-.09	.01	.02	.15	.09	-.08
Is reserved	.11	-.05	.44**	.28**	.17*	-.03	-.16*	-.32**	-.02	.08	.10
Can be somewhat careless	-.01	-.01	.06	-.01	-.01	-.21**	.00	.18*	.04	-.45**	-.12
Relaxed/ handles stress well	-.21*	-.13	-.08	-.06	-.17*	.00	-.04	-.07	-.13	-.14	.08
Full of energy	-.01	.07	-.24**	-.16*	-.05	.14	.29**	.27**	.18*	.00	.03
Starts quarrels with others	.24**	.20*	.00	.11	.24**	.09	.07	.10	.20*	.10	-.13
Can be moody	.28**	.25**	.04	.16*	.12	.02	.10	.11	.18*	-.01	-.11
A reliable worker	-.03	.00	-.06	-.07	-.14	.09	.04	-.09	-.05	.09	.22**
Can be tense	.19*	.09	.04	.02	.18*	.02	.02	.13	.18*	.11	.00
Ingenious/deep thinker	-.04	.02	-.01	.08	.08	.16	.08	.21*	.28**	-.02	-.08
Generates a lot of enthusiasm	-.06	.03	-.26**	-.37**	-.05	.13	.22**	.37**	.14	-.04	.15
Has a forgiving nature	-.16*	-.18*	.17*	-.14	-.15	-.20*	-.11	-.01	-.23**	-.15	.31**
Physically attractive	.05	.00	.05	-.15	-.14	-.06	-.01	.00	-.15	-.06	.20*
Tends to be disorganized	.02	.02	.04	.04	.04	-.07	.15	.24**	.19*	-.31**	-.16*
Worries a lot	.23**	.13	.21**	.05	.20*	-.06	.01	.00	.12	.03	-.03
Has an active imagination	-.11	-.02	-.11	-.22**	.06	.14	.19*	.38**	.34**	.01	.02
Tends to be quiet	.04	-.11	.34**	.23**	.00	-.02	-.19*	-.34**	-.04	.01	.13
Generally trusting	-.06	.00	.00	-.06	-.10	-.02	-.08	-.07	-.13	-.01	.27**
Tends to be lazy	.06	.09	.10	.08	.00	-.05	.03	-.05	-.04	-.17*	-.12
Gets nervous easily	.13	.11	.20*	.00	.13	-.05	-.05	-.14	.02	-.01	.05
Emotionally stable/not easily upset	-.17*	-.17*	-.03	-.08	-.23**	.00	-.01	-.08	-.16*	.02	.23**
Inventive	.01	.04	-.22**	-.08	.09	.23**	.25**	.29**	.36**	.14	.06
Has an assertive personality	-.07	.03	-.41**	-.23**	-.02	.14	.20*	.28**	.13	.06	-.10
Original/comes up with new ideas	-.02	.01	-.22**	-.10	.08	.25**	.23**	.32**	.37**	.11	-.03
Can be cold and aloof	.23**	.12	.10	.23**	.21*	.11	.12	.01	.25**	.17*	-.17*
Not good-looking	-.11	-.06	-.01	.12	.09	.01	-.06	-.03	.10	-.01	-.24**
Perseveres until the task is finished	-.08	-.08	-.08	.02	.01	.09	-.03	-.02	.02	.19*	.17*
Values artistic, aesthetic experiences	-.13	-.08	-.07	-.22**	-.06	.08	.04	.28**	.19*	-.05	-.06
Sometimes shy/inhibited	.16*	.02	.39**	.22**	.01	-.10	-.18*	-.28**	-.05	-.10	.05
Considerate and kind to almost everyone	-.15	-.08	.14	-.15	-.09	-.02	-.05	-.02	-.14	-.05	.35**
Does things efficiently	-.11	-.06	-.16*	-.11	-.13	.18*	-.06	-.08	-.08	.25**	.13
Remains calm in tense situations	-.18*	-.10	-.16	-.10	-.22**	.03	.05	.04	-.09	-.09	.08
Prefers routine work	.11	.10	.29**	.15	.12	-.21**	-.21*	-.32**	-.19*	.05	.28**
Helpful and unselfish with others	-.10	-.03	.12	-.04	-.05	-.10	-.05	-.06	-.18*	-.05	.24**
Outgoing/sociable	-.11	-.01	-.30**	-.36**	-.05	.09	.14	.33**	.04	.07	.10
Sometimes rude to others	.13	.04	-.05	.04	.12	.03	.08	.14	.24**	-.02	-.18*
Makes plans and follows through	-.13	-.12	-.07	-.05	.00	.18*	-.03	-.06	-.01	.27**	.10

Table 15. HDS Correlations with Observer Ratings for Big-Five Inventory Phrases (Continued)

	EXC	SKE	CAU	RES	LEI	BOL	MIS	COL	IMA	DIL	DUT
Likes to reflect/play with ideas	.01	.01	-.09	-.11	.08	.20*	.19*	.35**	.36**	.05	-.09
Has few artistic interests	.09	.03	.06	.23**	-.04	-.15	-.07	-.32**	-.27**	.04	.06
Likes to cooperate with others	-.12	-.13	.15	-.14	-.07	-.11	-.16	-.06	-.26**	-.04	.35**
Easily distracted	.01	-.02	.04	-.12	.14	-.12	.08	.22**	.16	-.16	.00
Sophisticated in art, music, literature	-.16	-.16*	-.04	-.16*	-.13	.04	-.02	.19*	.15	-.11	-.11
Curious about many different things	.07	.16	-.13	-.09	.08	.19*	.28**	.36**	.30**	.03	-.03

Note. N = 148; EXC = Excitable; SKE = Skeptical; CAU = Cautious; RES = Reserved; LEI = Leisurely; BOL = Bold; MIS = Mischievous; COL = Colorful; IMA = Imaginative; DIL = Diligent; DUT = Dutiful; * Correlation is significant at .05 level; ** Correlation is significant at .01 level.

RESULTS OF SCALE AND OBSERVER DESCRIPTION CORRELATES

Excitable. Adjectives in Table 14 with the largest positive correlations include Temperamental (.26), Moody (.25), and Fretful (.21). Adjectives with the largest negative correlations include Unenvious (-.20), Practical (-.18), and Philosophical (-.16). Phrases in Table 15 with the largest positive correlations include Can be moody (.28), Is depressed/blue (.28), and Starts quarrels with others (.24). Phrases with the largest negative correlations include Relaxed/handles stress well (-.21), Remains calm in tense situations (-.18), and Emotionally stable/not easily upset (-.17).

Skeptical. Adjectives in Table 14 with the largest positive correlations include Moody (.23), Temperamental (.22), and Harsh (.14). Adjectives with the largest negative correlations include Practical (-.19), Philosophical (-.19), and Unenvious (-.18). Phrases in Table 15 with the largest positive correlations include Is depressed/blue (.26), Can be moody (.25), and Starts quarrels with others (.20). Phrases with the largest negative correlations include Has a forgiving nature (-.18), Emotionally stable/not easily upset (-.17), and Sophisticated in art, music, literature (-.16).

Cautious. Adjectives in Table 14 with the largest positive correlations include Bashful (.37), Withdrawn (.32), and Quiet (.31). Adjectives with the largest negative correlations include Extraverted (-.39), Bold (-.26), and Talkative (-.22). Phrases in Table 15 with the largest positive correlations include Is reserved (.44), Sometimes shy/inhibited (.39), and Tends to be quiet (.34). Phrases with the largest negative correlations include Has an assertive personality (-.41), Outgoing/sociable (-.30), and Generates a lot of enthusiasm (-.26).

Reserved. Adjectives in Table 14 with the largest positive correlations include Withdrawn (.34), Unsympathetic (.24), and Quiet (.23). Adjectives with the largest negative correlations include Extraverted (-.34), Warm (-.34), and Talkative (-.33). Phrases in Table 15 with the largest positive correlations include Is reserved (.28), Has few artistic interests (.23), and Can be cold and aloof (.23). Phrases with the largest negative correlations include Generates a lot of enthusiasm (-.37), Outgoing/sociable (-.36), and Has an assertive personality (-.23).

Leisurely. Adjectives in Table 14 with the largest positive correlations include Fretful (.23), Temperamental (.23), and Withdrawn (.19). Adjectives with the largest negative correlations include Unenvious (-.22), Relaxed (-.17), and Cooperative (-.16). Phrases in Table 15 with the largest positive correlations include Starts quarrels with others (.24), Is depressed/blue (.23), and Can be cold and aloof (.21). Phrases with the largest negative correlations include Emotionally stable/not easily upset (-.23), Remains calm in tense situations (-.22), and Relaxed/handles stress well (-.17).

Bold. Adjectives in Table 14 with the largest positive correlations include Systematic (.22), Imaginative (.17), and Creative (.16). Adjectives with the largest negative correlations include Uncreative (-.21), Inefficient (-.21), and Sloppy (-.18). Phrases in Table 15 with the largest positive correlations include Original/comes up with new ideas (.25), Inventive (.23), and Likes to reflect/play with ideas (.20). Phrases with the largest negative correlations include Can be somewhat careless (-.21), Prefers routine work (-.21), and Has a forgiving nature (-.20).

Mischievous. Adjectives in Table 14 with the largest positive correlations include Bold (.24), Energetic (.22), and Extraverted (.19). Adjectives with the largest negative correlations include Quiet (-.19), Practical

(-.16), and Unenvious (-.15). Phrases in Table 15 with the largest positive correlations include Full of energy (.29), Curious about many different things (.28), and Inventive (.25). Phrases with the largest negative correlations include Prefers routine work (-.21), Tends to be quiet (-.19), and Sometimes shy/inhibited (-.18).

Colorful. Adjectives in Table 14 with the largest positive correlations include Bold (.36), Extraverted (.35), and Talkative (.31). Adjectives with the largest negative correlations include Shy (-.30), Quiet (-.29), and Bashful (-.29). Phrases in Table 15 with the largest positive correlations include Has an active imagination (.38), Generates a lot of enthusiasm (.37), and Curious about many different things (.36). Phrases with the largest negative correlations include Tends to be quiet (-.34), Has few artistic interests (-.32), Prefers routine work (-.32), and Is reserved (-.32).

Imaginative. Adjectives in Table 14 with the largest positive correlations include Harsh (.32), Imaginative (.32), and Creative (.31). Adjectives with the largest negative correlations include Uncreative (-.21), Cooperative (-.18), and Organized (-.16). Phrases in Table 15 with the largest positive correlations include Original/comes up with new ideas (.37), Inventive (.36), and Likes to reflect/play with ideas (.36). Phrases with the largest negative correlations include Has few artistic interests (-.27), Likes to cooperate with others (-.26), and Has a forgiving nature (-.23).

Diligent. Adjectives in Table 14 with the largest positive correlations include Organized (.34), Efficient (.31), and Systematic (.31). Adjectives with the largest negative correlations include Sloppy (-.45), Inefficient (-.34), and Disorganized (-.27). Phrases in Table 15 with the largest positive correlations include Does a thorough job (.30), Makes plans and follows through (.27), and Does things efficiently (.25). Phrases with the largest negative correlations include Can be somewhat careless (-.45), Tends to be disorganized (-.31), and Tends to be lazy (-.17).

Dutiful. Adjectives in Table 14 with the largest positive correlations include Cooperative (.26), Warm (.25), and Kind (.23). Adjectives with the largest negative correlations include Unsympathetic (-.25), Complex (-.19), and Envious (-.19). Phrases in Table 15 with the largest positive correlations include Considerate and kind to almost everyone (.35), Likes to cooperate with others (.35), and Has a forgiving nature (.31). Phrases with the largest negative correlations include Finds faults with others (-.24), Sometimes rude to others (-.18), and Can be cold and aloof (-.17).

INTERPRETATION OF HDS SCALE AND SUBSCALE SCORES

The HDS provides information on dysfunctional behaviors that may emerge at work, impeding efforts to "get along" and "get ahead." Such behaviors may emerge in team interactions or relationships with subordinates or supervisors, or in circumstances that challenge self-regulation such as stress, fatigue, or ambiguity. Higher scores on any HDS scale indicate that the person is more likely to engage in maladaptive behavior.

Chapter 4 of the *Hogan Development Survey manual* (R. Hogan & Hogan, 2009) provides scale interpretation and examples for how to interpret HDS scales. More detailed interpretation for each HDS scale can be found in *The Hogan Guide: Interpretation and Use of Hogan Inventories* (R. Hogan, Hogan, & Warrenfeltz, 2007). The new HDS form, however, provides additional information to enrich scale score interpretation. Scores for the 33 subscales provide more detailed information about how those derailers are likely to manifest themselves in behavior. This fine-grained information is valuable across organizational applications ranging from recruitment and selection to coaching, leadership development, and succession planning. Individuals across organizational levels and job categories can use this information for development to minimize their risk of derailment by focusing on specific behaviors likely to emerge under stress.

To supplement the interpretive information provided in the *Hogan Development Survey manual* (R. Hogan & Hogan, 2009) and *The Hogan Guide* (R. Hogan, Hogan, & Warrenfeltz, 2007), this section provides information about how HDS subscales enrich interpretation. Following an overview of how HDS subscales enhance score interpretation, we provide sample profiles matching those provided in the *Hogan Development Survey manual* (R. Hogan & Hogan, 2009). However, these sample profiles include subscale scores to detail interpretation.

HDS scale scores describe dysfunctional dispositions that may emerge under stress, but not specific behavioral manifestations of these dispositions. Without subscale scores, HDS users are left to assume that a person with a high HDS scale score will evidence *all* behaviors associated with the scale. However, such is often not the case. By providing subscale-level scores, the new form of the HDS offers a more detailed summary of a person's likely behavior under stress. Information across all HDS scales appears in Table 16.

Table 16. Sample Interpretations for High HDS Scores with and without Subscales

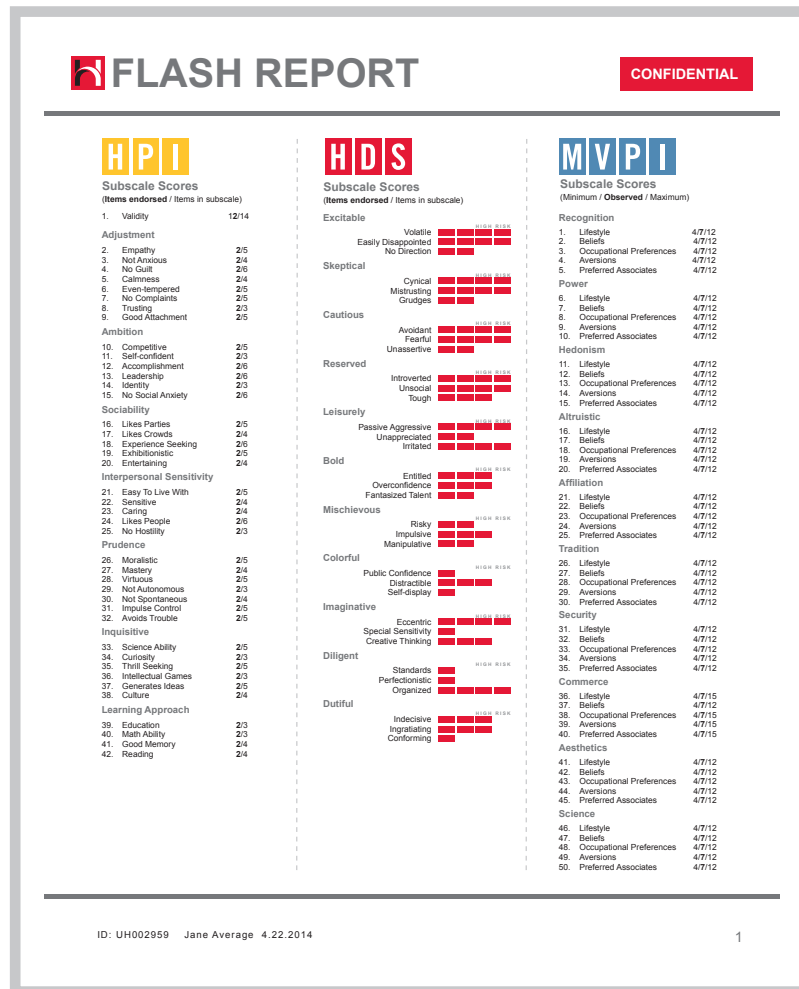| HDS Scale	Example High Score Interpretation	Example High Score Interpretation with Subscales
Excitable	The individual represents ALL tendencies included in the scale, including being moody and emotionally volatile, quick to move from enthusiasm to disappointment, and lacking well-defined beliefs.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may become easily disappointed or emotionally volatile when under stress, but may possess a core of well-defined beliefs and interests.
Skeptical	The individual represents ALL tendencies included in the scale, including being alert for signs of perceived mistreatment, doubting others' intentions, and holding grudges.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may remain alert for signs of perceived mistreatment and hold grudges, but may not assume ulterior motives in others' actions.
Cautious	The individual represents ALL tendencies included in the scale, including being avoidant, fearful of criticism, and unassertive.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may behave in a fearful and unassertive manner when under stress, but may not avoid new people and situations.
Reserved	The individual represents ALL tendencies included in the scale, including being introverted, unsocial, and insensitive to others' problems.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may become more introverted and unsocial when under stress, but may actually be highly sensitive to others' problems.
Leisurely	The individual represents ALL tendencies included in the scale, including being passive aggressive, perceived as unappreciated, and privately resentful.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may react to stress in passive aggressive or resentful ways, but may feel that his/her contributions are recognized and appreciated.
Bold	The individual represents ALL tendencies included in the scale, including being arrogant, entitled, and believing that he/she has unusual talents and gifts.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may behave in an arrogant and entitled manner when under stress, but may not believe that he/she is destined for greatness because of unusual gifts.
Mischievous	The individual represents ALL tendencies included in the scale, including being risk-taking, impulsive and spontaneous, and manipulative of others.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may behave in a risky and impulsive manner when under stress, but may be unlikely to manipulate others in these situations.
Colorful	The individual represents ALL tendencies included in the scale, including being excessively dramatic, easily distracted, and seeking others' attention.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may behave in a dramatic and attention-seeking manner when under stress, but may not be easily distracted in these situations.
Imaginative	The individual represents ALL tendencies included in the scale, including being odd and eccentric, unusually creative, and believing that he/she has special abilities to understand things that others cannot.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may behave in eccentric and unusually creative ways when under stress, but may not believe that he/she possesses special insights.
Diligent	The individual represents ALL tendencies included in the scale, including being perfectionistic, meticulous, and having exceptionally high standards for him/herself and others.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may be perfectionistic and meticulously organized when under stress, but may hold realistic standards for him/herself and others.
Dutiful	The individual represents ALL tendencies included in the scale, including being indecisive, ingratiating to superiors, and excessively conforming.	The individual may represent some tendencies included in the scale, but not others. For example, the individual may behave in conforming and ingratiating ways when under stress, but may have no problems making independent decisions.

Sample HDS Profile Interpretations

To further illustrate the value of HDS subscales, we offer seven sample profiles. For each, we provide a sample report.

A "Moving Away" profile is provided in Figure 1. This profile is dominated by elevated scores on the primary scales comprising the first factor of the HDS.

Figure 1. HDS "Moving Away" Profile

FLASH REPORT

CONFIDENTIAL

HPI
Subscale Scores
(**Items endorsed** / Items in subscale)

1.	Validity	12/14

Adjustment
2.	Empathy	2/5
3.	Not Anxious	2/4
4.	No Guilt	2/6
5.	Calmness	2/4
6.	Even-tempered	2/5
7.	No Complaints	2/5
8.	Trusting	2/3
9.	Good Attachment	2/5

Ambition
10.	Competitive	2/5
11.	Self-confident	2/3
12.	Accomplishment	2/6
13.	Leadership	2/6
14.	Identity	2/3
15.	No Social Anxiety	2/6

Sociability
16.	Likes Parties	2/5
17.	Likes Crowds	2/4
18.	Experience Seeking	2/6
19.	Exhibitionistic	2/5
20.	Entertaining	2/4

Interpersonal Sensitivity
21.	Easy To Live With	2/5
22.	Sensitive	2/4
23.	Caring	2/4
24.	Likes People	2/6
25.	No Hostility	2/3

Prudence
26.	Moralistic	2/5
27.	Mastery	2/4
28.	Virtuous	2/5
29.	Not Autonomous	2/3
30.	Not Spontaneous	2/4
31.	Impulse Control	2/5
32.	Avoids Trouble	2/5

Inquisitive
33.	Science Ability	2/5
34.	Curiosity	2/3
35.	Thrill Seeking	2/5
36.	Intellectual Games	2/3
37.	Generates Ideas	2/5
38.	Culture	2/4

Learning Approach
39.	Education	2/3
40.	Math Ability	2/3
41.	Good Memory	2/4
42.	Reading	2/4

HDS
Subscale Scores
(**Items endorsed** / Items in subscale)

Excitable — HIGH RISK
- Volatile
- Easily Disappointed
- No Direction

Skeptical — HIGH RISK
- Cynical
- Mistrusting
- Grudges

Cautious
- Avoidant
- Fearful
- Unassertive

Reserved — HIGH RISK
- Introverted
- Unsocial
- Tough

Leisurely — HIGH RISK
- Passive Aggressive
- Unappreciated
- Irritated

Bold — HIGH RISK
- Entitled
- Overconfidence
- Fantasized Talent

Mischievous
- Risky
- Impulsive
- Manipulative

Colorful — HIGH RISK
- Public Confidence
- Distractible
- Self-display

Imaginative — HIGH RISK
- Eccentric
- Special Sensitivity
- Creative Thinking

Diligent — HIGH RISK
- Standards
- Perfectionistic
- Organized

Dutiful — HIGH RISK
- Indecisive
- Ingratiating
- Conforming

MVPI
Subscale Scores
(Minimum / **Observed** / Maximum)

Recognition
1.	Lifestyle	4/7/12
2.	Beliefs	4/7/12
3.	Occupational Preferences	4/7/12
4.	Aversions	4/7/12
5.	Preferred Associates	4/7/12

Power
6.	Lifestyle	4/7/12
7.	Beliefs	4/7/12
8.	Occupational Preferences	4/7/12
9.	Aversions	4/7/12
10.	Preferred Associates	4/7/12

Hedonism
11.	Lifestyle	4/7/12
12.	Beliefs	4/7/12
13.	Occupational Preferences	4/7/12
14.	Aversions	4/7/12
15.	Preferred Associates	4/7/12

Altruistic
16.	Lifestyle	4/7/12
17.	Beliefs	4/7/12
18.	Occupational Preferences	4/7/12
19.	Aversions	4/7/12
20.	Preferred Associates	4/7/12

Affiliation
21.	Lifestyle	4/7/12
22.	Beliefs	4/7/12
23.	Occupational Preferences	4/7/12
24.	Aversions	4/7/12
25.	Preferred Associates	4/7/12

Tradition
26.	Lifestyle	4/7/12
27.	Beliefs	4/7/12
28.	Occupational Preferences	4/7/12
29.	Aversions	4/7/12
30.	Preferred Associates	4/7/12

Security
31.	Lifestyle	4/7/12
32.	Beliefs	4/7/12
33.	Occupational Preferences	4/7/12
34.	Aversions	4/7/12
35.	Preferred Associates	4/7/12

Commerce
36.	Lifestyle	4/7/15
37.	Beliefs	4/7/12
38.	Occupational Preferences	4/7/15
39.	Aversions	4/7/15
40.	Preferred Associates	4/7/15

Aesthetics
41.	Lifestyle	4/7/12
42.	Beliefs	4/7/12
43.	Occupational Preferences	4/7/12
44.	Aversions	4/7/12
45.	Preferred Associates	4/7/12

Science
46.	Lifestyle	4/7/12
47.	Beliefs	4/7/12
48.	Occupational Preferences	4/7/12
49.	Aversions	4/7/12
50.	Preferred Associates	4/7/12

ID: UH002959   Jane Average 4.22.2014

1

This profile describes a person who is prone to emotional swings between enthusiasm and distaste (Excitable, Volatile and Easily Disappointed), vigilant for signs of betrayal, and given to retaliation (Skeptical, Cynical and Mistrusting). Beneath this volatile exterior, he is insecure and afraid of criticism (Cautious, Fearful), resentful of superiors (Leisurely, Passive Aggressive and Irritated), but also quiet and withdrawn (Reserved, Introverted and Unsocial). As such, his insecurity and resentment should go largely unnoticed. These characteristics maintain distance between this man and other people. In addition, he is nonconforming (Dutiful, Conforming) and flexible (Diligent, Perfectionistic). While he is alone, he generates interesting and sometimes far-fetched ideas about his life and what is happening to him (Imaginative, Eccentric and Creative Thinking).

A "Moving Against" profile appears in Figure 2. This profile is characterized by elevated scores on the scales comprising the second factor of the HDS.
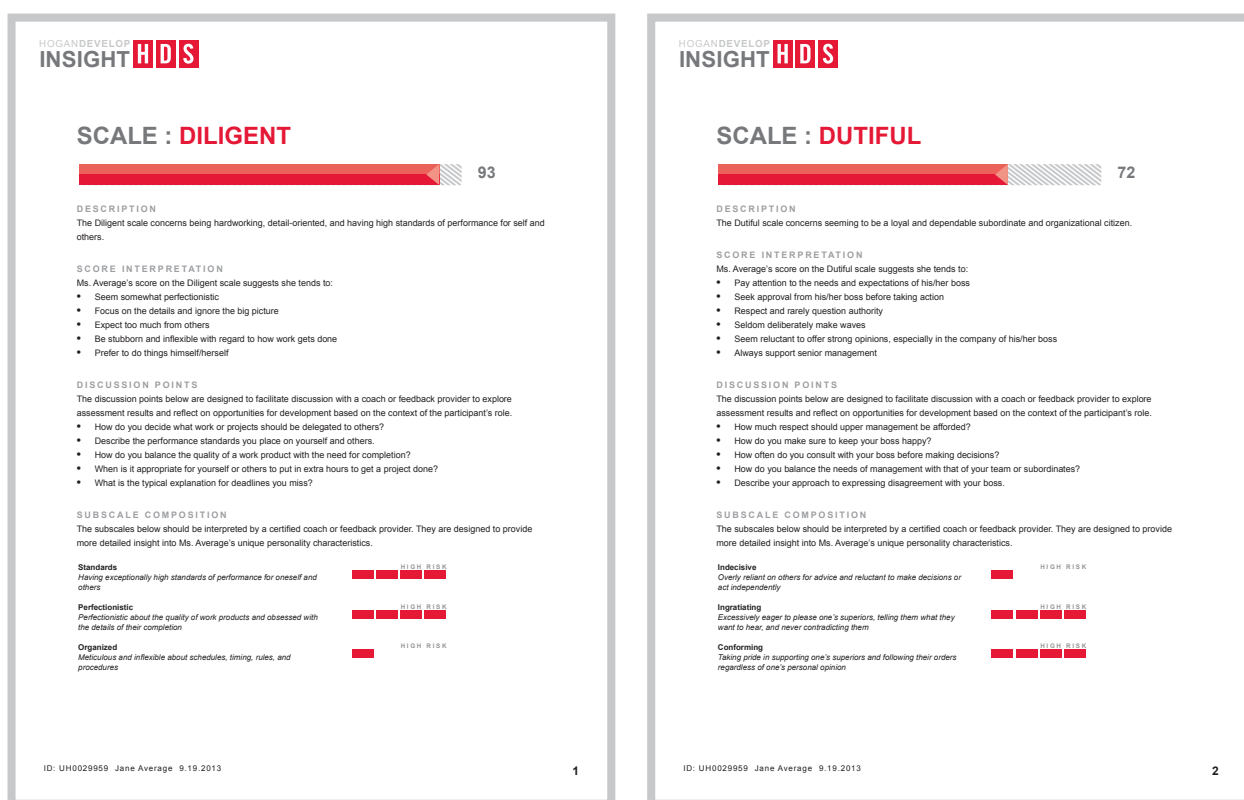
Figure 2. HDS "Moving Against" Profile
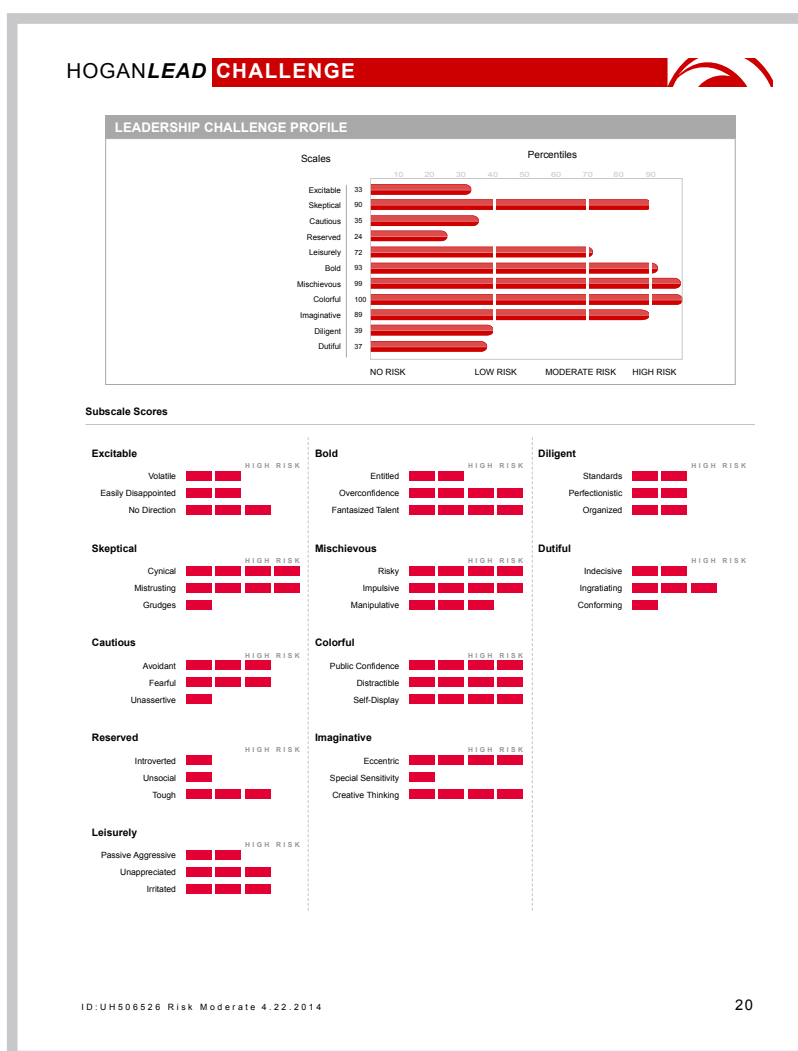
This person is outgoing and insightful (Reserved, Introverted and Unsocial), dramatic and attention-seeking (Colorful, Public Confidence and Self-Display), impulsive and limit-testing (Mischievous, Risky and Impulsive), bright and charismatic (Bold, Overconfidence and Fantasized Talent), and creative and innovative (Imaginative, Eccentric and Creative Thinking). He tends to distrust others and to feel exploited (Skeptical, Cynical and Mistrusting), and his public self-confidence may obscure private self-doubt. Not hidden, however, is arrogance (Bold, Overconfidence) that is likely to emerge in stressful circumstances. In these contexts, his need to dominate, dazzle, or intimidate others can be expected to emerge.

Figure 3 provides a sample of a "Moving Toward" profile, with elevated scale scores on the third HDS factor.

Figure 3. HDS "Moving Toward" Profile

HOGAN**DEVELOP**
INSIGHT **H** **D** **S**

SCALE : DILIGENT

93

DESCRIPTION
The Diligent scale concerns being hardworking, detail-oriented, and having high standards of performance for self and others.

SCORE INTERPRETATION
Ms. Average's score on the Diligent scale suggests she tends to:
- Seem somewhat perfectionistic
- Focus on the details and ignore the big picture
- Expect too much from others
- Be stubborn and inflexible with regard to how work gets done
- Prefer to do things himself/herself

DISCUSSION POINTS
The discussion points below are designed to facilitate discussion with a coach or feedback provider to explore assessment results and reflect on opportunities for development based on the context of the participant's role.
- How do you decide what work or projects should be delegated to others?
- Describe the performance standards you place on yourself and others.
- How do you balance the quality of a work product with the need for completion?
- When is it appropriate for yourself or others to put in extra hours to get a project done?
- What is the typical explanation for deadlines you miss?

SUBSCALE COMPOSITION
The subscales below should be interpreted by a certified coach or feedback provider. They are designed to provide more detailed insight into Ms. Average's unique personality characteristics.

Standards
Having exceptionally high standards of performance for oneself and others
HIGH RISK

Perfectionistic
Perfectionistic about the quality of work products and obsessed with the details of their completion
HIGH RISK

Organized
Meticulous and inflexible about schedules, timing, rules, and procedures
HIGH RISK

HOGAN**DEVELOP**
INSIGHT **H** **D** **S**

SCALE : DUTIFUL

72

DESCRIPTION
The Dutiful scale concerns seeming to be a loyal and dependable subordinate and organizational citizen.

SCORE INTERPRETATION
Ms. Average's score on the Dutiful scale suggests she tends to:
- Pay attention to the needs and expectations of his/her boss
- Seek approval from his/her boss before taking action
- Respect and rarely question authority
- Seldom deliberately make waves
- Seem reluctant to offer strong opinions, especially in the company of his/her boss
- Always support senior management

DISCUSSION POINTS
The discussion points below are designed to facilitate discussion with a coach or feedback provider to explore assessment results and reflect on opportunities for development based on the context of the participant's role.
- How much respect should upper management be afforded?
- How do you make sure to keep your boss happy?
- How often do you consult with your boss before making decisions?
- How do you balance the needs of management with that of your team or subordinates?
- Describe your approach to expressing disagreement with your boss.

SUBSCALE COMPOSITION
The subscales below should be interpreted by a certified coach or feedback provider. They are designed to provide more detailed insight into Ms. Average's unique personality characteristics.

Indecisive
Overly reliant on others for advice and reluctant to make decisions or act independently
HIGH RISK

Ingratiating
Excessively eager to please one's superiors, telling them what they want to hear, and never contradicting them
HIGH RISK

Conforming
Taking pride in supporting one's superiors and following their orders regardless of one's personal opinion
HIGH RISK

This woman is mild-mannered (Excitable, Volatile), good-natured (Skeptical, Cynical and Mistrusting), pleasant (Leisurely, Passive Aggressive and Irritated), modest (Bold, Overconfidence), quiet (Colorful, Self-Display), and reluctant to take risks (Mischievous, Risky). She is concerned about others' feelings (Reserved, Tough), but also moderately concerned about opinions others have of her (Cautious, Fearful). Problems may emerge due to her high standards and perfectionism (Diligent, Standards and Perfectionistic) and her need to be held in high regard by supervisors (Dutiful, Ingratiating and Conforming). In many ways she is an exemplary employee because she follows rules and is eager to please. However, high Diligent and Dutiful scores suggest she will be reluctant to take initiative, will resist innovation, and will tell colleagues what they want to hear. She is so perfectionistic that she may miss deadlines and micromanage subordinates.

Figure 4 summarizes a "corporate guerilla", with elevated scale scores on the second factor of the HDS and low scale scores on the third factor of the HDS.

Figure 4. HDS "Corporate Guerilla" Profile
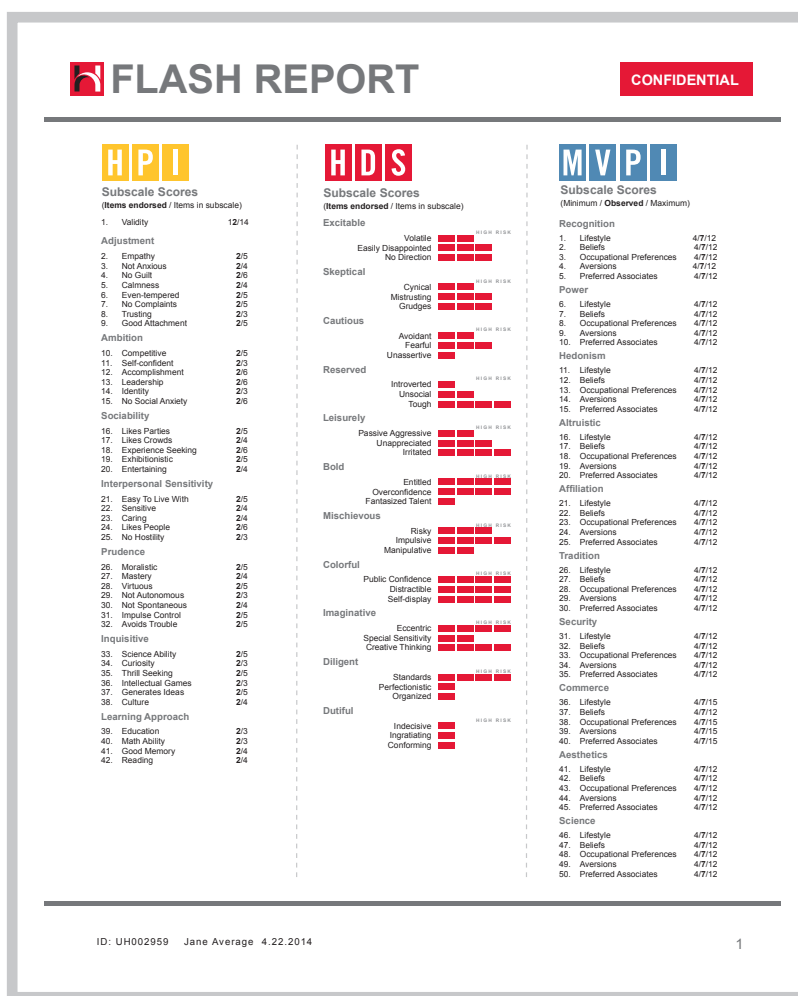
The "corporate guerilla" seems confident and self-promoting (Bold, Entitled and Overconfidence), dramatic and attention-seeking (Colorful, Public Confidence and Self-Display), innovative but distractible (Imaginative, Eccentric and Creative Thinking), indifferent to others' needs (Reserved, Tough), decisive (Dutiful, Indecisive), and unconcerned with details (Diligent, Perfectionistic). This person appears assertive, but may also resent others (Leisurely, Irritated) and behave impulsively (Mischievous, Impulsive). He may present himself as motivated toward meeting corporate goals, but covertly sets his own rules, resents management, fails to consider the consequences of his actions, and advances his own agenda at others' expense.

Figure 5 illustrates an unusual and complex pattern of HDS scores with at least one significant elevation on scales from each of the three factors.

Figure 5. HDS "Insecure Showboat" Profile
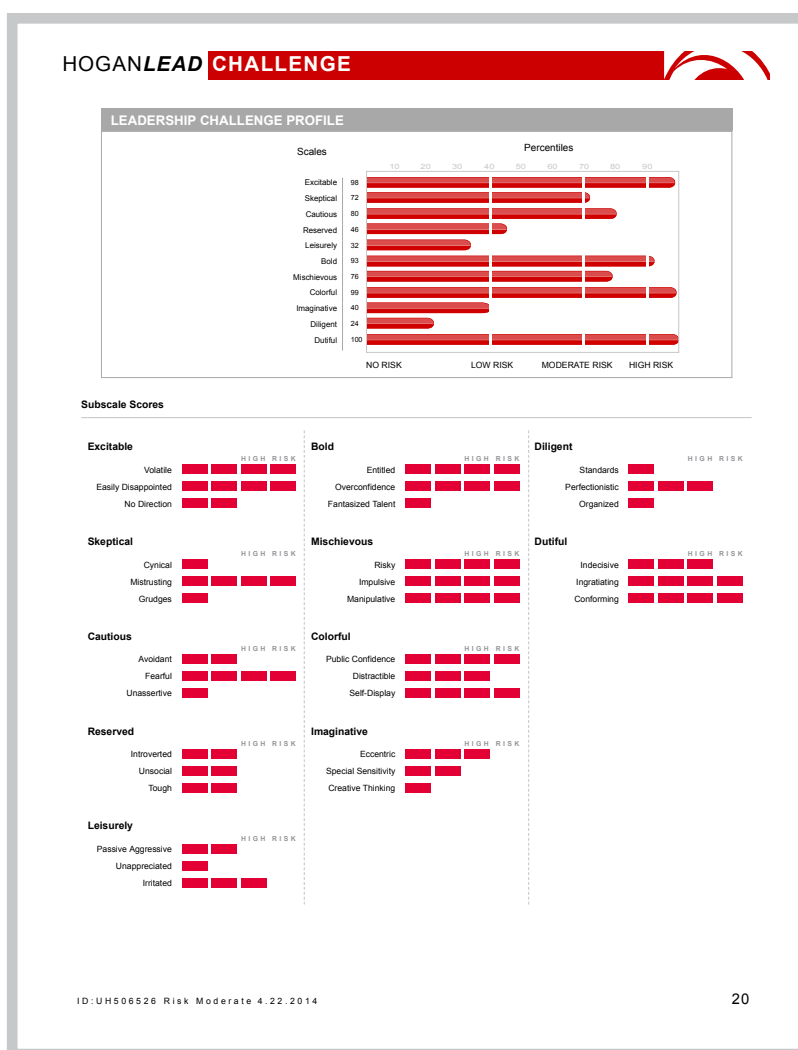
The "insecure showboat" is perceived by others as arrogant and entitled (Bold, Entitled and Overconfidence), expressive and dramatic (Colorful, Public Confidence and Self-Display), but not creative (Imaginative, Creative Thinking). However, she also distrusts others (Skeptical, Mistrusting) and easily gives up on projects when frustrations arise (Excitable, Volatile and Easily Disappointed). Although uncharacteristic for someone with high Bold and Colorful scores, she fears embarrassment (Cautious, Fearful) and seeks favor with supervisors (Dutiful, Ingratiating and Conforming). These behaviors are likely a veneer for private self-doubt, as she may impress others as self-confident but is likely to become emotional and critical when things go awry. The atypical pattern of HDS scale and subscale scores indicates that her self-centered, attention-seeking, and arrogant behaviors compensate for underlying self-doubt.

A "litigious" profile presented in Figure 6 is characterized by high scores on the Excitable, Leisurely, Skeptical, Imaginative, and Diligent scales and relevant subscales. This represents another example of high scores on at least one scale of each HDS factor.

Figure 6. HDS "Litigious" Profile
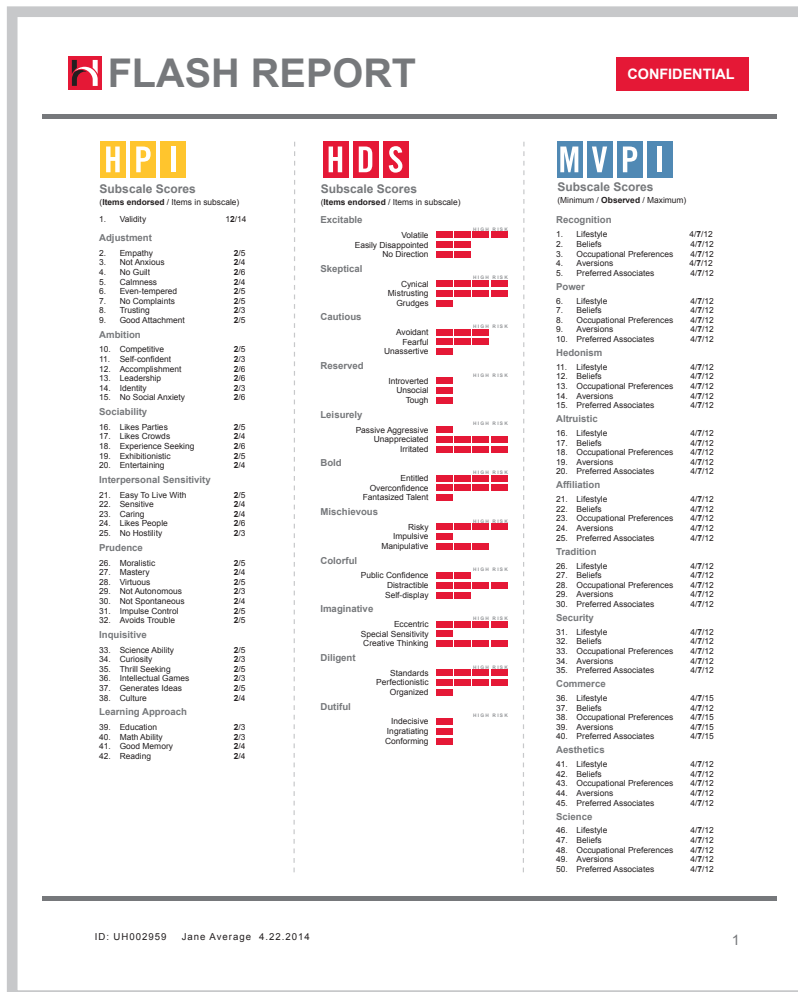
This person is easily upset (Excitable, Volatile), resents perceived inequities (Leisurely, Unappreciated and Irritated), distrustful about others (Skeptical, Cynical and Mistrusting), and has unusual ideas (Imaginative, Eccentric and Creative Thinking). He can also be critical and overly focused on how things ought to be (Diligent, Standards and Perfectionistic). His charisma and interpersonal skill (Bold, Overconfidence and Entitled) will mask his tendency toward delinquent behaviors (Mischievous, Risky and Manipulative).

Finally, a sample HDS profile for a "fear-driven salesman" appears in Figure 7.

Figure 7. HDS "Fear-Driven Salesman" Profile

Elevated scores on the scales comprising the second HDS factor suggest this man will seem outgoing and confident (Bold, Entitled and Overconfidence), risk-taking and impulsive (Mischievous, Risky and Impulsive), dramatic and entertaining (Colorful, Public Confidence and Self-Display), and creative and eccentric (Imaginative, Eccentric and Creative Thinking). Scores on other scales and subscales suggest he is socially engaged (Reserved, Introverted), unconcerned about others (Cautious, Avoidant and Fearful), and independent (Dutiful, Indecisive). Although dynamic, charming, socially skilled, bright, and imaginative, he has some private self-doubts. He is likely to be easily irritated by others (Leisurely, Irritated), and to clash with his supervisors (Excitable, Volatile).

UTILITY OF HDS SUBSCALE INFORMATION

Information provided in HDS subscale scores is of no use unless this new information provides added value for employee coaching and leadership development. To check the value of HDS subscale information, we administered the new HDS form to participants from public and private Hogan certification workshops. Third party coaches who provided participants with assessment feedback were provided with HDS reports and Data Reports providing HDS scale and subscale scores for each participant. Coaches used these materials to prepare and deliver feedback, and were surveyed about their perceptions of the accuracy and value of HDS subscales following these sessions.

For each participant who completed the HDS, coaches were asked about their impressions of (a) the accuracy of HDS scales in the new form, (b) the value of HDS subscale information, and (c) how well the new HDS form aligned with interpretive text provided in existing HDS reports. The following sections describe these results.

Accuracy of HDS Scales

For each participant, coaches were asked whether they found HDS scale scores in the new form *less accurate*, *as accurate*, or *more accurate* than HDS scale scores in the existing form. Scale scores for the new HDS were rated as *more accurate* than scale scores for the existing HDS across 22.1% of participants, ranging from 12.2% (Colorful) to 48.9% (Imaginative). Coaches found scale scores from the new HDS *as accurate* as those from the existing HDS across 68.4% of participants, ranging from 38.3% (Imaginative) to 82.5% (Mischievous). Scale scores from the new HDS were rated as *less accurate* than those from the existing HDS for less than one in ten participants (9.4%) across scales, ranging from 2.5% (Diligent) to 20.5% (Bold) (see Figure 8).

**Figure 8. Accuracy of HDS Scale Scores in New Form vs. Existing HDS**
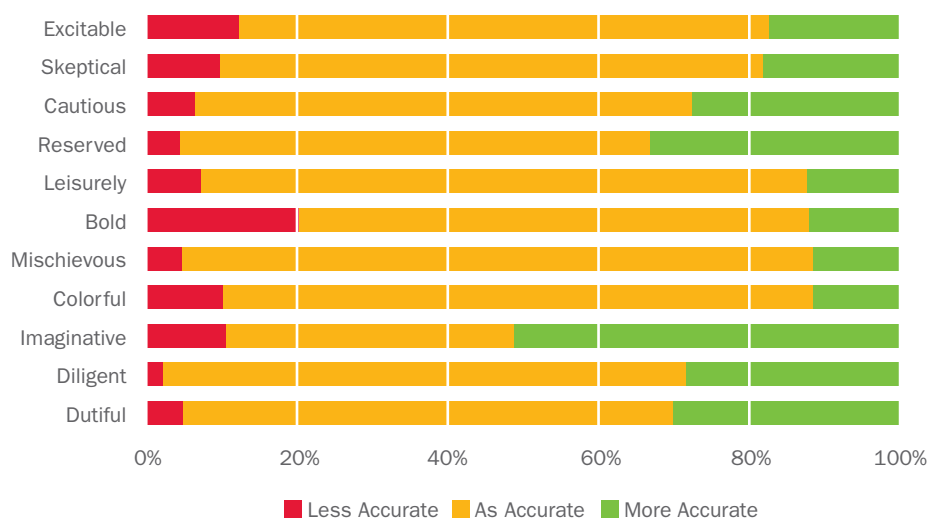
For simplicity, we combined *as accurate* and *more accurate* responses for additional analyses. For these results, scale scores for the new HDS were rated *as or more accurate* than those from the existing HDS for 90.6% of participants, ranging from 79.5% (Bold) to 97.5% (Diligent). These results are shown in Figure 9.

Figure 9. Dichotomous Accuracy of HDS Scale Scores in New Form vs. Existing HDS
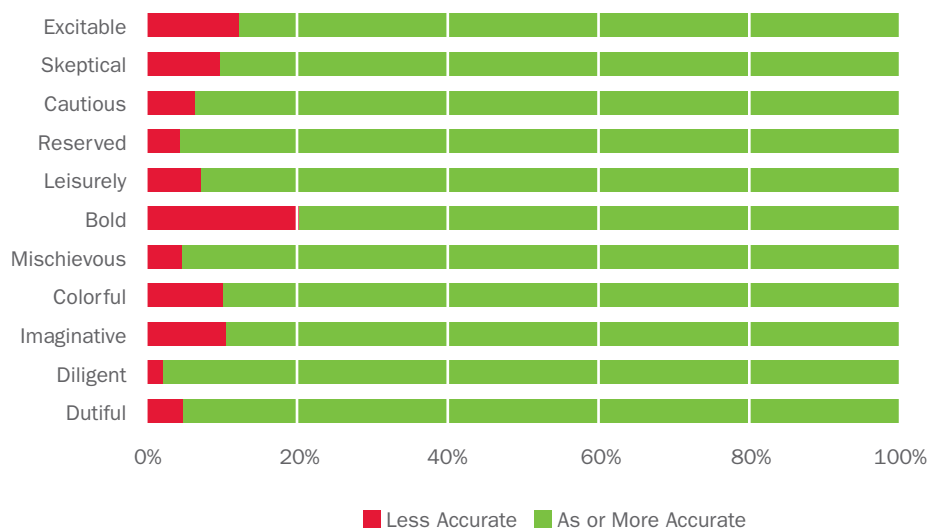
Value of Subscale Information

In terms of accuracy, coaches were asked whether they thought each HDS subscale was *problematic* or *added value* in describing each participant. If coaches did not use information from a subscale, they provided no response. HDS subscales *added value* across 27.8% of participants, ranging from 17.9% (Leisurely, Passive Aggressive) to 44.6% (Imaginative, Special Sensitivity). Across subscales, coaches provided *no response* across 69.7% of participants, ranging from 48.2% (Imaginative, Special Sensitivity) to 80.4% (Leisurely, Passive Aggressive). HDS subscales were rated as *problematic* for only 2.5% of participants, ranging from 0.0% (Cautious, Avoidant and Fearful; Mischievous, Manipulative; Diligent, Perfectionistic) to 8.9% (Bold, Fantasized Talent) (see Figure 10).

Figure 10. Added Value of HDS Subscale Scores in New Form
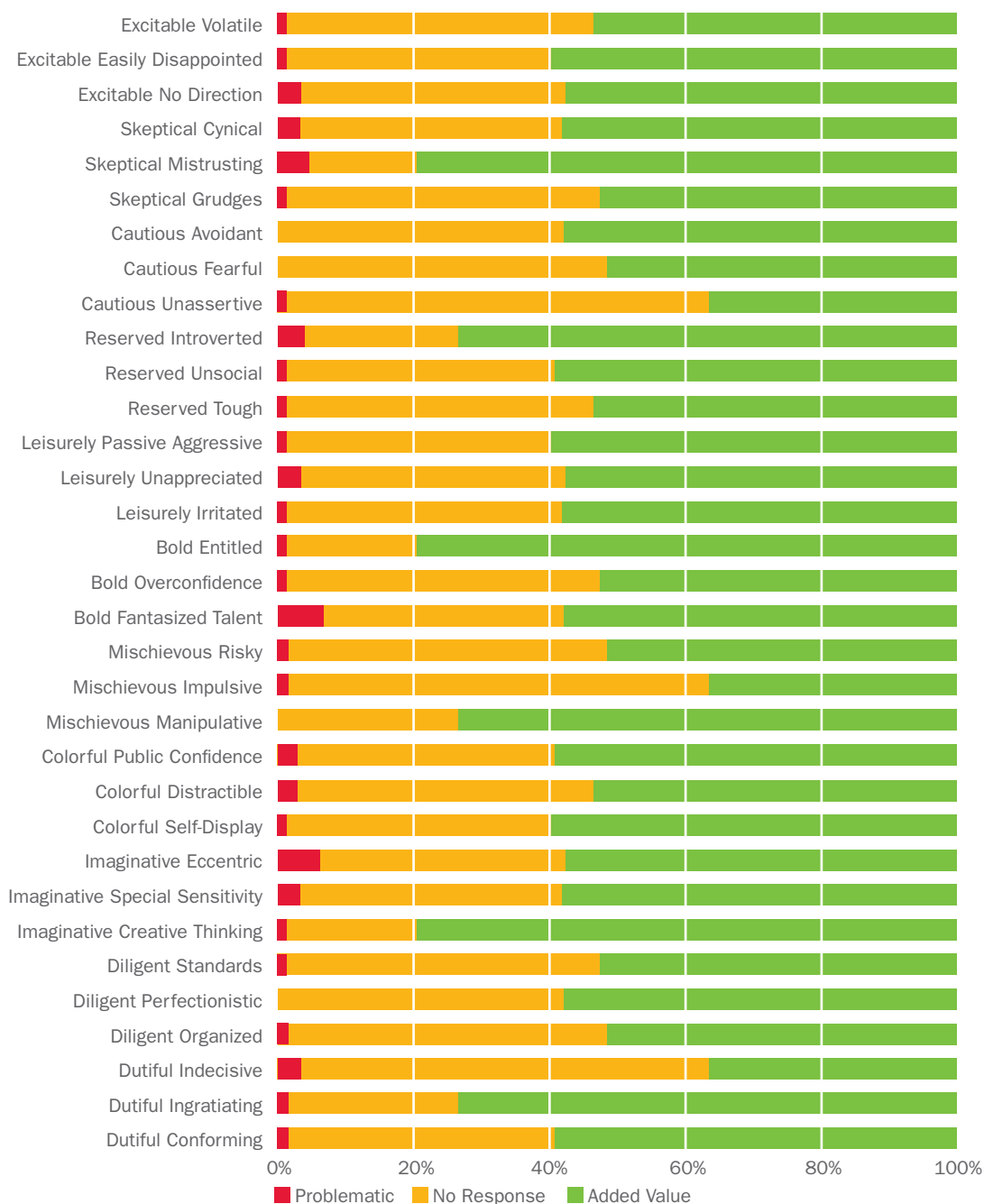
For simplicity, we re-examined results after excluding cases where coaches did not provide responses for a subscale. These results appear in Figure 11. Considering only cases where coaches provided ratings, HDS subscales *added value* across 91.7% of participants, ranging from 75.0% (Bold, Fantasized Talent) to 100.0% (Cautious, Avoidant and Fearful; Mischievous, Manipulative; Diligent, Perfectionistic). On average, subscales were rated as *problematic* for only 8.3% of participants, ranging from 0.0% (Cautious, Avoidant and Fearful; Mischievous, Manipulative; Diligent, Perfectionistic) to 25.0% (Bold, Fantasized Talent).

Figure 11. Dichotomous Added Value of HDS Subscale Scores in New Form
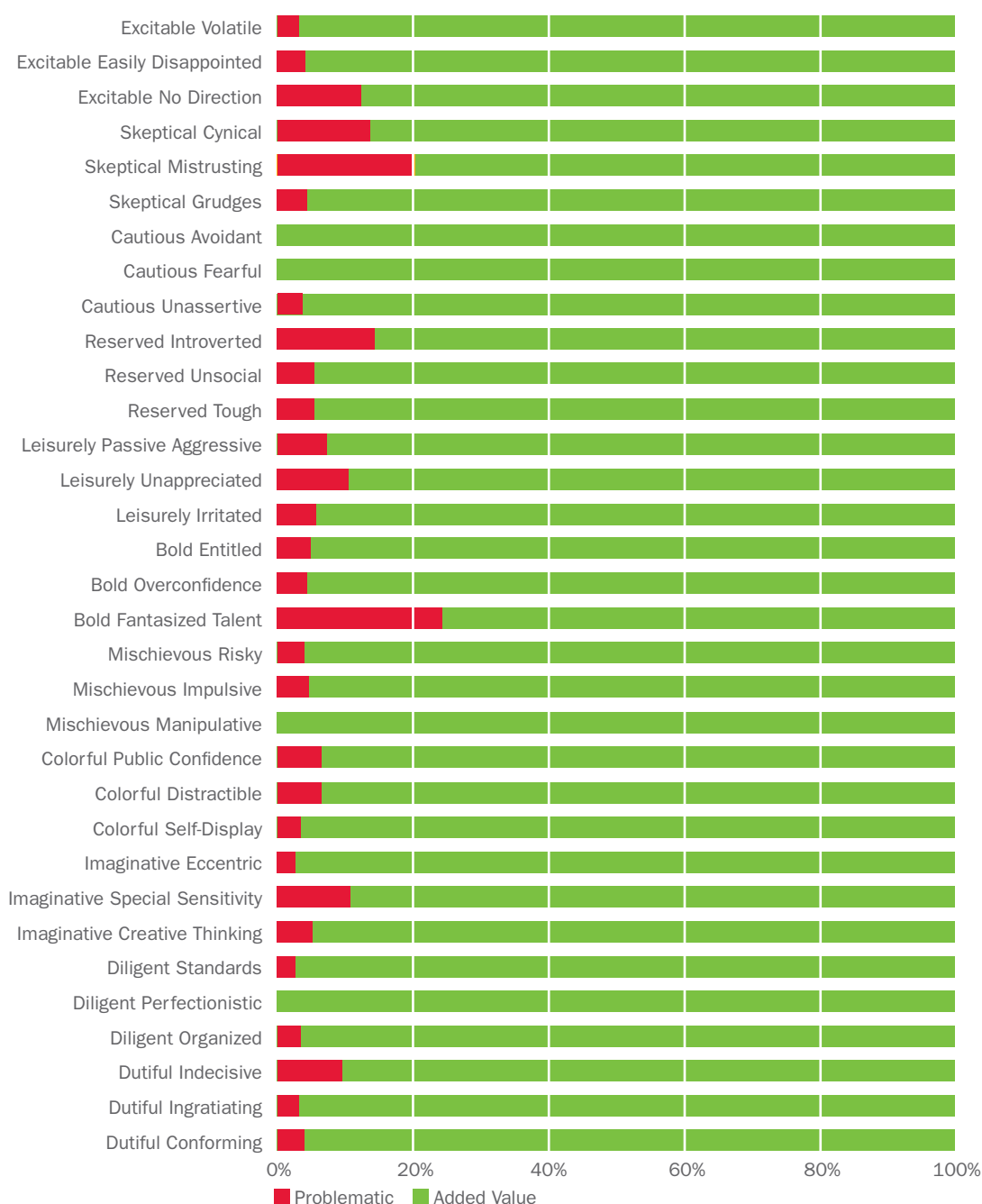
Alignment between New HDS Form and Existing Interpretive Text

Coaches were also asked whether they thought the new HDS was *poorly aligned*, *aligned*, or *well aligned* with existing interpretive information available in HDS reports. Scale scores for the new HDS were *well aligned* with existing HDS reports across 57.1% of participants, ranging from 33.3% (Imaginative) to 78.8% (Leisurely). Coaches found that scale scores from the new HDS *aligned* with existing HDS reports across 29.4% of participants, ranging from 15.2% (Leisurely) to 38.2% (Mischievous). Scale scores from the new HDS were rated as *poorly aligned* with existing HDS reports for only 13.5% of participants across scales, ranging from 5.7% (Diligent) to 30.8% (Imaginative) (see Figure 12).

Figure 12. Alignment Between New HDS Scale Scores and Existing HDS Reports
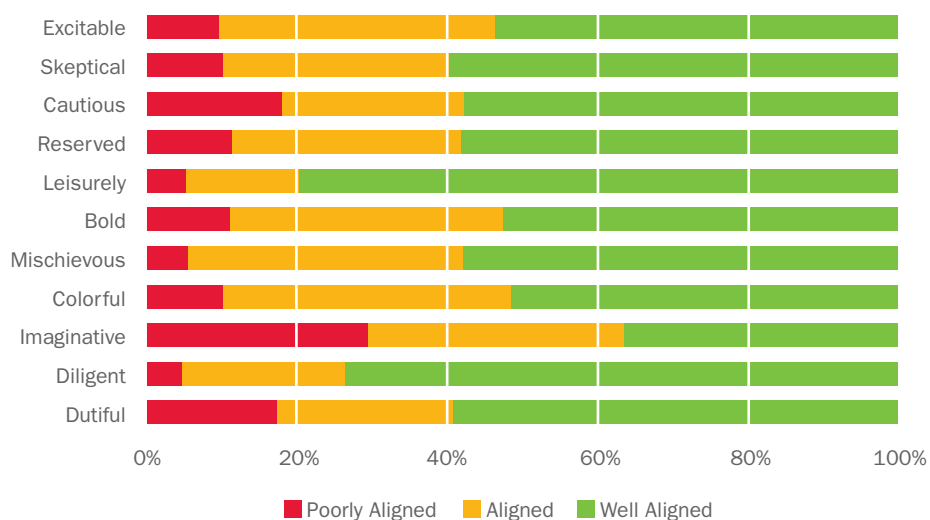
Combining *aligned* and *well aligned* responses for purposes of simplicity, scale scores for the new HDS were rated as *aligned or well aligned* with existing HDS reports for 86.5% of participants, ranging from 69.2% (Imaginative) to 94.3% (Diligent). These results are shown in Figure 13.

Figure 13. Dichotomous Alignment Between New HDS Scale Scores and Existing HDS Reports
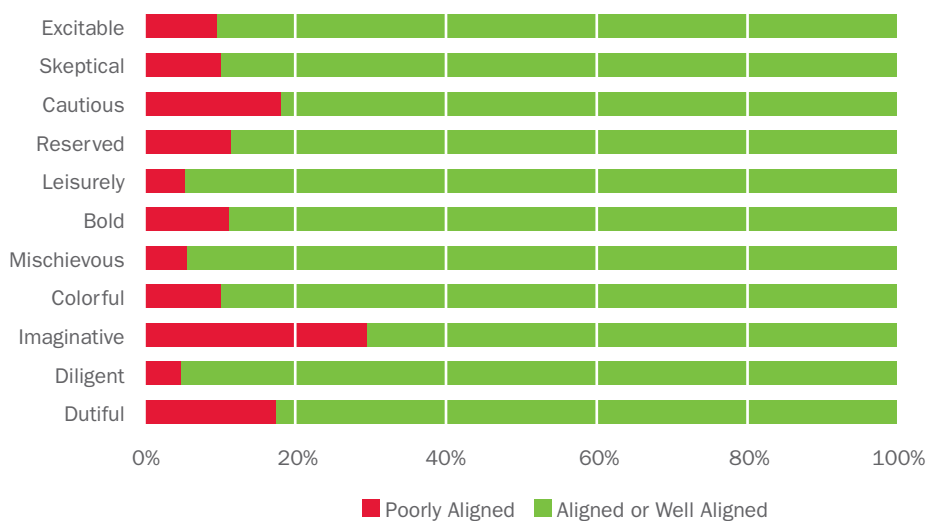
EXPERT TESTIMONIALS

Finally, coaches were asked to comment on the new form of the HDS as related to their work in providing assessment feedback and developmental coaching. Their comments included the following:

- *"As with the HPI subscales, I like the possibility of having data that can help "shade" or color the scale interpretations and performance implications."*

- *"The subscales were very helpful in discussing the results."*

- *"The new subscales help me pinpoint what behaviors were appearing and to ask the correct questions."*

- *"The HDS subscale results helped me understand that the participant's Colorful behaviors perhaps look less like attention seeking behavior and [have] more to do with distractibility and public confidence."*

- *"Additional insights gained from subscales in areas about Dutiful, Diligent, Cautious, and Reserved which helped in delivering the feedback."*

- *"All of the subscales added insight to me and enriched the discussion with the client."*

- *"Imaginative – the Special Sensitivity subscale provided a more differentiated discussion about Imaginative expression."*

- *"The subscales I checked would give greater detail into the scores on the scales and more specific questions during the feedback session."*

- *"The subscales would have allowed for more specificity in identifying behaviors."*

- *"The Unappreciated subscale would have added value, as we talked about her feeling like she's been overlooked for a promotion to a senior level despite her performance being very strong."*

- *"This participant had many elevated scores and the subscales provided added value."*

- *"For this participant the subscales were very helpful because they supported the HPI subscales."*

- *"I really liked the subscales with the HDS – they would enrich the discussion and ultimately be important feedback for participants."*

- *"My first exposure to the HDS subscales. Really like having this additional facet data; I think it will add intricacy to the interpretations."*

- *"Overall, I think the new version added a level of clarity in the feedback session."*

- *"The extra information helps in seeing trends across the three assessments."*

- *"The HDS subscales provide more focus to allow me to pinpoint a behavior instead of a broad brush."*

- *"The new HDS gave me more insights into this participant's very strong and dominating personality."*

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