

# SDI Methodology and Meaning

## THE SCIENCE BEHIND THE STRENGTH DEPLOYMENT INVENTORY

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The Strength Deployment Inventory (SDI) is an assessment of human motives and strengths. It stands on the foundation of practical application, scholarship, and research that began with Elias Porter's introduction of the SDI in 1971 and publication of Relationship Awareness Theory (Porter, 1976). The theory has roots in psychoanalysis (Fromm, 1947) and client-centered therapy (Porter, 1950; Rogers, 1951, 1961).

Today the SDI offers four views of a person: a Motivational Value System, a Conflict Sequence, a Strengths Portrait, and an Overdone Strengths Portrait. These four views form a systems view of personality and productiveness at work. When personality is considered in the context of relationships, and viewed as a dynamic system, greater explanatory power is available than when personality is viewed as independent variables or dichotomies (Lewin, 1935; Piers, 2000; Sullivan, 1953). In a systems view, the

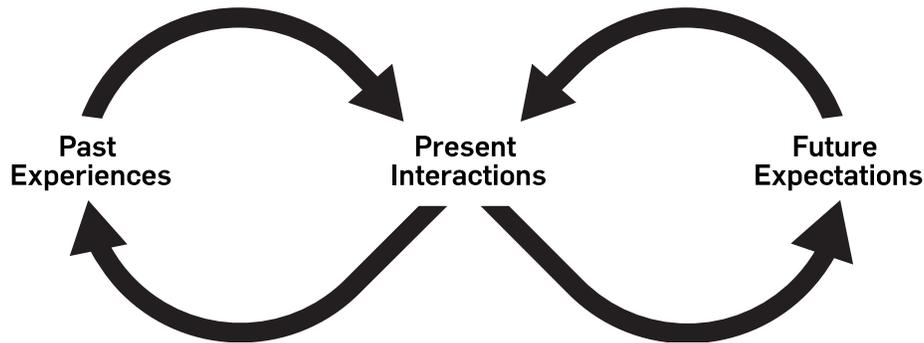
conscious interaction of emotional states, behavior, and motives is an advancement from classic psychoanalytic theory, which holds that motives and drives are largely relegated to the unconscious (Meissner, 2009).

## PURPOSE AND FOUNDATIONAL CONCEPTS

To fully understand the methodology and meaning of the SDI assessment, the purpose of the assessment must be considered. The SDI is based on foundational concepts that lead to specific types of measurement (data collection), scoring, reporting, validity and reliability testing, and the application of assessment results.

**FIGURE 1**

Relationship Intelligence Model



The purpose of the SDI is to improve the quality of working relationships. People have relationships within themselves, with each other, and with their work. Relationships are psychological connections over time; they have history, the present moment, and expectations for the future (Figure 1). Improving relationships requires beginning with self-awareness. Increased self-awareness results from greater conscious understanding of the true self, and the reduction or removal of defenses against self-understanding. Greater self-awareness enables more clear and accurate understanding of others.

Relationship intelligence is the application of knowledge in specific settings or contexts to produce results that are meaningful to people in relationships.

*Relationship intelligence helps people to:*

- better understand past interactions, enabling a deeper understanding and appreciation of self and others.
- manage choices and perceptions in the present moment, enabling more effective behavior and communication in relationships.
- anticipate the thoughts, feelings, and actions of others, giving them greater control over the future outcomes of their relationships.

These skills are essential to creating collaborative communities that foster learning, development, and authentic connections to others and to work.

#### **PERSONALITY TYPE AND TRAITS**

Personality is broadly defined as the set of stable tendencies and characteristics that influence people's thoughts, feelings, and actions across all types of situations (Maddi, 1996; Weiner & Greene, 2008). Personality is not easy to classify. As Kluckhohn and Murray (1948) noted, every person is like every other person in some regards; every person is like some other persons in some regards; and every person is unique in some ways. Personality types are the result of theory and analysis that describe that middle ground, the way that people share characteristics with some, but not all, other people. The assignment of a type to a person as the result of a personality assessment in no way invalidates the uniqueness of a person. Instead, it helps to provide a frame of reference to anticipate people's thoughts, feelings, and actions. People with the same personality type may still have uniquely personal traits.

#### **MOTIVES**

Motives are the primary determinants of personality types described by SDI results. There are three primary motives, which are experienced differently in two emotional states: 1) when things are going well and 2) when there is conflict. Motives are purposive in nature; they

**TABLE 1**

Motives in Two Conditions

Motive	Color	Well State Keyword and Meaning of Motive	Conflict State Keyword and Meaning of Motive
<b>Nurturant</b>	<b>Blue</b>	<b>People</b> Actively seeking to help others	<b>Accommodate</b> Drive to preserve or restore harmony
<b>Directive</b>	<b>Red</b>	<b>Performance</b> Actively seeking opportunities to achieve results	<b>Assert</b> Drive to prevail over another person or obstacle
<b>Autonomous</b>	<b>Green</b>	<b>Process</b> Actively seeking logical orderliness and self-reliance	<b>Analyze</b> Drive to conserve resources and assure independence

are the underlying drives or reasons that energize a person to think, feel, or act in various ways as they relate to others.

Three primary motives are present in every person in both conditions, but in varying degrees. When things are going well, three primary motives work together in each person to form a Motivational Value System. When people experience conflict, these motives take on a different quality and are accessed in a predictable pattern, termed a Conflict Sequence. Table 1 shows the three motives under two conditions, along with the color-codes and keywords that are used in SDI assessment results.

Fulfilling a motive in a well-state contributes to feelings of self-worth, while the restriction of a motive in a well-state may trigger a shift to the conflict state. Fulfilling a motive in the conflict state can trigger a return to the well state, but the restriction of a motive in the conflict state may trigger a shift to another stage of conflict. The connections between these two independent states create a large number of dynamic types, which are further explained in the report generation section.

### STRENGTHS

The SDI presents a prioritized set of 28 strengths to each respondent. Strengths are behaviors that are driven by underlying motives and productive intentions. Strengths are generally valued and

appreciated in the context of relationships. The 28 strengths (and their overdone counterparts) in the SDI should be viewed as part of an overall personality theory. Elias Porter's initial work with strengths was inspired by Erich Fromm's (1947) lists of positive and negative aspects of personality types. Porter refined the lists of strengths through his own research and practical application. More recent research (Scudder, 2013) drove further changes to the 28 strengths that improved their validity, reliability, and usefulness in the present version, the SDI.

Strengths may also be viewed as traits. Each strength has a connection with motives and personality type. But strengths, because they are behaviors, are freely chosen by people as they consider their situations, goals, and relationships. Desires and beliefs help to explain action and give it meaning (Rosenberg, 2008). The application of strengths is variable across situations. There are correlations with personality, but strengths alone are not the essence of personality. Instead, strengths are the ways that individuals express their core motives through action.

### OVERDONE STRENGTHS

The SDI also presents a prioritized set of 28 overdone strengths, which are the non-productive counterparts to the strengths (Fromm, 1947). Because strengths are driven by motives, and motives are purposive, people expect their strengths to produce desired results. When



desired results are not achieved, people may try a little harder, with the expectation that more effort with the same strength will produce the desired result. This is how people can sometimes get over-invested in their strengths, to the point that an overdone strength can limit their effectiveness or create tension or conflict in relationships.

Bringing awareness of the implications, or effects, of overdone strengths to people helps them manage the frequency, duration, intensity, or context (Livson & Nichols, 1957) of the behavior for greater effectiveness. It also helps them make more informed decisions about what other strengths they could use in various situations and relationships. SDI results bring overdone strengths into conscious awareness and gives people the power to improve their relationships and their effectiveness.

### THE PRESENT STUDY

In addition to reviewing the methodology and summarizing relevant past research, the present study reports the results of 12,565 SDI

assessments. The population is comprised of working adults, predominantly from large, multinational, US-based corporations, who participated in the Results through Relationships training programs in late 2018 and early 2019. No data regarding age, gender, ethnicity, or other demographics were collected, and no effort was made to control for other mediating variables such as role or industry.

## DATA COLLECTION AND SCORING

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The methods of collecting data are influenced by the underlying phenomena to be measured and the application to which the results are to be used. Given the focus on motives as the primary determinants of personality, and that personality is stable across all types of situations, the motives section of the SDI asks people to assume a whole-life perspective and think about themselves in all types of situations as they complete the assessment. The strengths section requires that the respondent adopt a change in mindset. Given that strengths are behaviors, and therefore not necessarily consistent across situations, respondents are directed to think about workplace situations when they complete the strengths section of the SDI. This is because the results from the strengths section of the assessment are used primarily in work situations, but need to be connected to the underlying personality and motives of the person doing the work.

### MOTIVES: WHOLE-LIFE PERSPECTIVE

The motives section of the SDI is a 60-item, dual-state, ipsative assessment. Respondents assume a whole-life perspective as they respond to two groups of items, one for each state: 1) when things are going well, and 2) the experience of conflict. Each state has three scales and the sum of scale scores for each state must be 100. Items are presented in sets of three via sentence stems that require respondents to allocate 10 points among three different sentence endings to show how frequently the different endings describe them. The range of possible responses for each item is zero to 10. The range of possible scores on each scale is from zero to 100.

The scale scores from the going well section of the SDI are used to identify one of seven personality types called Motivational Value Systems (MVS). The scale scores from the conflict section of the SDI are used to identify one of 13 personality types called Conflict Sequences (CS). Each respondent's scores are associated with two types, an MVS and a CS. There are 91 (7 x 13) possible dynamic types.

The ipsative data collection method mirrors the underlying phenomena that it measures. Each person is assumed to have all three core motives in varying degrees. The ipsative items force respondents to allocate points in a manner that represents the interplay between the three motives. The 100 point totals, allocated among three scale scores, facilitate the presentation of results in familiar manners, such as percentages. The fact that every respondent must have the same total score also facilitates comparison between many individuals. It removes the discrepancies often associated with other methods, such as Likert scales, where some people frequently give maximum scores, but others rarely give maximum scores.

### STRENGTHS: WORK PERSPECTIVE

In the strengths section of the SDI respondents assume a mindset based on their current work role and environment. The intent is to focus the respondent on the work environment, where they are most likely to apply the results of the assessment. There are 56 strengths statements, which respondents rate using a five-point Likert scale. Statements are presented in sets of four; each set has a strength that correlates to the Blue, Red, Green, and Hub MVS types. There are 14 sets of four statements, seven of which are productive statements of strength, and seven of which contain non-productive, overdone statements. Within each set, respondents must first choose 1 through 5 from Likert scales. Then, if two or more items are rated equally high or equally low, forced-choice tiebreakers are presented. This method ensures that respondents must choose one statement that is most like them and one statement that is least like them from every set of four. Each set of four statements yields six data elements, the four Likert-scale responses, and an ipsative component that identifies the in-set statements that are most-

like, and least-like the respondent. A proprietary scoring algorithm is applied to the responses, which yields an ordinal ranking of 28 strengths, and 28 overdone strengths.

### ANALYSIS OF ORDINAL DATA

Ipsative, Likert-scale, and forced-choice data collection methods produce ordinal, not interval, data. Respondents' scores indicate preferences or relative weightings among possible responses, but the preferences (even on Likert scales) do not have fixed intervals. For example the difference between 2 and 3 on a Likert scale is not exactly the same as the distance between 3 and 4. In fact two items could have a response of 3, but on one the respondent could have wavered between 2 and 3, while they wavered between 3 and 4 on the other. In this case, the two responses of 3 are not equal from a psychological perspective. However, research conducted with a Likert scale version of the SDI demonstrated a strong positive correlation with the ipsative version's scales (Barney, 1996).

Parametric methods are meant to be applied to interval data, and non-parametric methods applied to ordinal data. But parametric methods yield similar results to non-parametric methods when applied to ordinal data, especially with large populations and when data are distributed roughly normally (Rust & Golombok, 2008; Warner, 2008). Analysis of SDI data shows normal distributions with large population samples, therefore, parametric methods, such as the calculation of means and standard deviations, are appropriately applied to SDI data.

## REPORT GENERATION

The SDI gives four interrelated views of a person that are informed by numerical results.

1. Motivational Value System
2. Conflict Sequence
3. Strengths Portrait, and
4. Overdone Strengths Portrait

## MOTIVATIONAL VALUE SYSTEM

The three scores from the going-well section indicate a Motivational Value System type as defined by the criteria in Table 2. These mathematical definitions correspond with regions on the SDI Triangle (Figure 2). The triangle is comprised of three scales, from 0 to 100, that intersect at  $33\frac{1}{3}$ . The MVS boundaries on the triangle are set at decimal locations, which ensure that no set of scores can be on a border, because all scores must be whole numbers. Each individual set of three going-well scores is represented by a dot

on the triangle. The location of the dot's center is determined by the intersection of all three scores. Every point on the triangle represents a unique set of three numbers that add to 100. There are 5,151 possible locations for an MVS dot on the triangle (which is the sum of all integers between 1 and 101). If an MVS dot is within 6 points of any border (which is the test-retest reliability of the scales), additional guidance regarding the neighboring MVS region is reported. Figure 3 shows a dot in the Blue MVS with a test-retest reliability circle that crosses into the Blue-Green MVS.

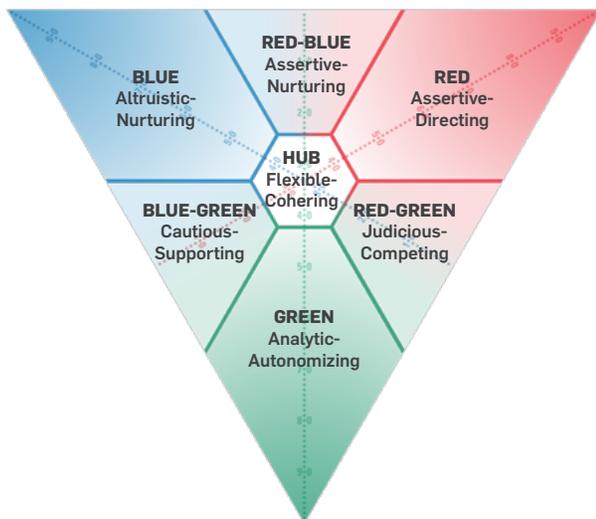
**TABLE 2**

Mathematical Definitions of MVS Types

MVS Type	Well Blue	Well Red	Well Green
<b>Blue</b> / Altruistic-Nurturing	WB > 42.3	WR < 33.3	WG < 33.3
<b>Red</b> / Assertive-Directing	WB < 33.3	WR > 42.3	WG < 33.3
<b>Green</b> / Analytic-Autonomizing	WB < 33.3	WR < 33.3	WG > 42.3
<b>Red-Blue</b> / Assertive-Nurturing	WB > 33.3	WR > 33.3	WG < 24.3
<b>Red-Green</b> / Judicious-Competing	WB < 24.3	WR > 33.3	WG > 33.3
<b>Blue-Green</b> / Cautious-Supporting	WB > 33.3	WR < 33.3	WG > 33.3
<b>Hub</b> / Flexible-Cohering	$24.3 < WB < 42.3$	$24.3 < WR < 42.3$	$24.3 < WG < 42.3$

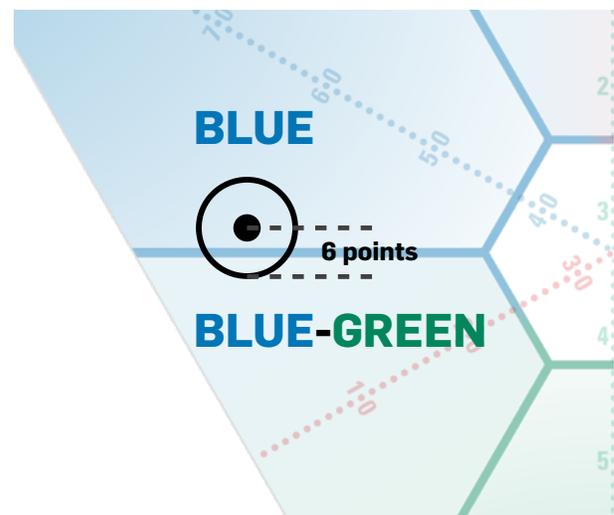
**FIGURE 2**

SDI Triangle with Three Scales and Seven MVS Types



**FIGURE 3**

Visual Example of Test Retest Reliability



**TABLE 3**

Mathematical Definitions of CS Types

CS Type	Conflict Blue	Conflict Red	Conflict Green	Other Test(s)
<b>B-R-G</b>	CB > 39.3	-	CG < 27.3	CB-CR > 6.3 CR-CG > 6.3
<b>B-G-R</b>	CB > 39.3	CR < 27.3	-	CB-CG > 6.3 CG-CR > 6.3
<b>B-[RG]</b>	CB > 39.3	-	-	ABS(CR-CG) < 6.3
<b>R-B-G</b>	-	CR > 39.3	CG < 27.3	CR-CB > 6.3 CB-CG > 6.3
<b>R-G-B</b>	CB < 27.3	CR > 39.3	-	CR-CG > 6.3 CG-CB > 6.3
<b>R-[BG]</b>	-	CR > 39.3	-	ABS(CB-CG) < 6.3
<b>G-B-R</b>	-	CR < 27.3	CG > 39.3	CG-CB > 6.3 CB-CR > 6.3
<b>G-R-B</b>	CB < 27.3	-	CG > 39.3	CG-CR > 6.3 CR-CB > 6.3
<b>G-[BR]</b>	-	-	CG > 39.3	ABS(CB-CG) < 6.3
<b>[RB]-G</b>	-	-	CG < 27.3	ABS(CB-CG) < 6.3
<b>[RG]-B</b>	CB < 27.3	-	-	ABS(CB-CG) < 6.3
<b>[BG]-R</b>	-	CR < 27.3	-	ABS(CB-CG) < 6.3
<b>[BRG]</b>	27.3 < CB < 39.3	27.3 < CR < 39.3	27.3 < CG < 39.3	-

**CONFLICT SEQUENCE**

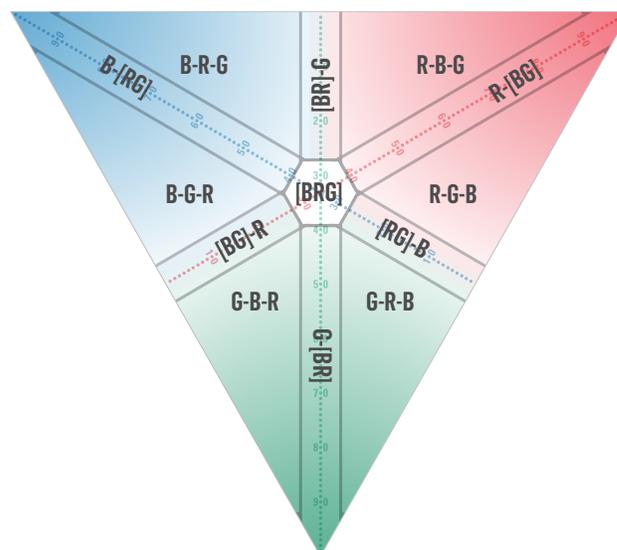
The three scores from the conflict section indicate a Conflict Sequence type as defined by the criteria in Table 3.

The triangle has two sets of boundaries, but uses the same three scales to determine the location of an arrowhead's point, which represents the Conflict Sequence. The mathematical definitions correspond with 13 regions on the SDI Triangle (Figure 4). There are also 5,151 possible locations for the arrowhead. Each bounded region of the triangle delineates an area where scores have the same pattern. Six regions show clear, three-stage Conflict Sequences with a different color at each stage. Three regions have a bracketed Stage 1 and 2, with a clear Stage 3. Three regions have a clear Stage 1 with brackets for Stages 2 and 3. One region, the small hexagon in the center, has a bracket including all three colors in all three stages. The brackets indicate scores that are close together. The practical significance of brackets in a Conflict Sequence is that brackets indicate a personal choice between two or more alternatives at the indicated stage(s) of conflict.

When the Motivational Value System and Conflict Sequence are presented on the SDI triangle together, the dot and arrowhead are joined by a

**FIGURE 4**

SDI Triangle with Three Scales and Conflict Sequence Regions



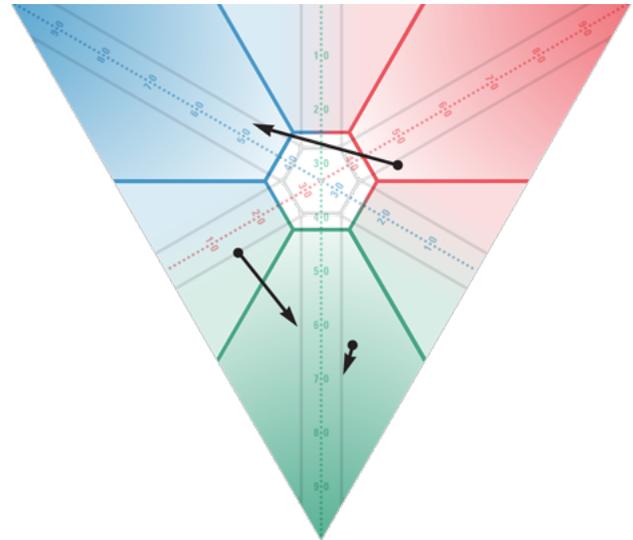
line to indicate that the two results are associated with one person. Several individuals may be presented together on the same triangle. (Figure 5)

The three scores for the going-well scales must equal 100, as must the three scores for the conflict scales. But the two sets of scales are independent; one set does not predict or control the other. The MVS dot can be anywhere on the triangle, and the CS arrowhead can be anywhere on the triangle. Therefore, from a typology perspective, 91 dynamic types are possible (7 MVS x 13 CS). But there are many more possible arrows, because there are 5,151 points on the triangle, each of which are used twice for one arrow. This results in 26,531,801 (5,1312) possible unique arrows based on the interplay of three core motives in two affective states.

Table 4 (Scudder, 2013) shows the distribution of all 7 MVS types, all 13 CS types and the 91 possible combinations thereof. The data in this table are assumed to be roughly representative of working

**FIGURE 5**

SDI Triangle with Three Example Arrows



**TABLE 4**

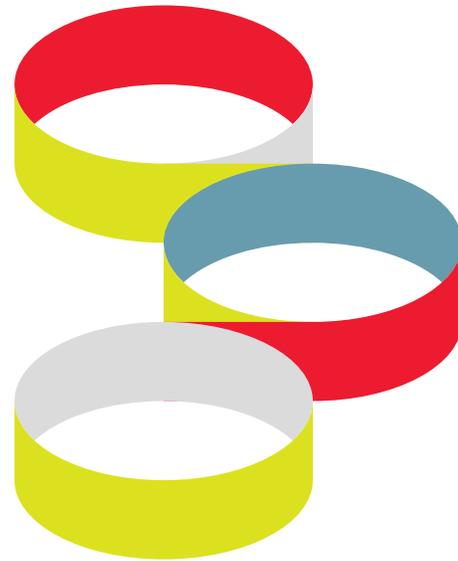
Cross-Tabulation of MVS and CS Types: Percentages

CS Type	Blue	Red	Green	Red-Blue	Red-Green	Blue-Green	Hub	Total
<b>B-R-G</b>	0.26	0.04	0.01	0.32	0.00	0.04	0.09	0.76
<b>B-G-R</b>	4.60	0.16	0.19	1.39	0.01	1.69	1.13	9.19
<b>B-[RG]</b>	1.20	0.13	0.02	0.81	0.03	0.29	0.56	3.04
<b>R-B-G</b>	0.14	0.21	0.01	0.37	0.01	0.00	0.11	0.86
<b>R-G-B</b>	0.31	2.16	0.44	0.81	0.70	0.22	1.59	6.24
<b>R-[BG]</b>	0.34	0.84	0.07	0.78	0.11	0.09	0.70	2.93
<b>G-B-R</b>	4.67	0.75	1.77	1.80	0.28	3.81	5.10	18.17
<b>G-R-B</b>	0.83	1.78	2.11	1.04	1.00	1.08	3.67	11.51
<b>G-[BR]</b>	2.17	1.00	1.93	1.83	0.62	2.04	5.86	15.45
<b>[RB]-G</b>	0.31	0.09	0.02	0.56	0.00	0.05	0.22	1.26
<b>[RG]-B</b>	0.49	1.79	0.66	1.28	0.69	0.45	2.70	8.06
<b>[BG]-R</b>	3.92	0.43	0.52	1.61	0.08	1.93	3.16	11.66
<b>[BRG]</b>	1.72	1.18	0.39	2.16	0.08	0.73	4.61	10.89
<b>Total</b>	20.96	10.56	8.14	14.74	3.62	12.43	29.54	100.00

n=9,798

adults in the United States because the sample represents a broad cross section of organizations and a wide variety of applications.

A systems view of personality enables explanation of phenomena that are due to the interaction between independent results, as opposed to the static-state views that are most common in personality theory and testing. The connections between the MVS and the CS are used in report generation to provide additional information to respondents, such as the length of the line and ideas about how to resolve conflict. Each respondent receives one of 49 descriptions that connect the motives in one of seven Stage 1 conflict states to one of 7 MVS types as an example of conflict resolution. Each respondent also receives information about the length of the line connecting the MVS dot and the CS arrowhead, per Table 5.



**SUMMARY OF REPORT GENERATION FOR MOTIVE SCALES**

Each respondent receives their individual scale scores, along and arrow drawn on the SDI triangle, which is a graphic representation of the scale scores. Explanatory text for the Motivational Value System is offered based on one of seven possibilities. Explanatory text for the Conflict Sequence is offered based on one of 13 possibilities. There are 91 permutations of explanatory text for the MVS and CS. Additional explanatory text is offered based on whether the results are close to another type, and connections between the results. All of these variables work together to inform a report generation process that describes personality as a system of motives under two conditions.

**STRENGTHS AND OVERDONE STRENGTHS**

The results from the work-focused, strengths section of the SDI are used to produce two portraits of the way respondents deploy their strengths. The Strengths Portrait, and variations of it, present the positive, productive strengths in an array from most likely to deploy to least likely to deploy. The Overdone Strengths Portrait, and its variations, similarly display the overdone strengths that may limit respondents’ effectiveness at work or cause difficulty in working relationships. Respondents’ work roles are identified on the strengths reports, but the roles are omitted from the reports that describe personality, because personality applies across multiple situations and the strengths reports are based on the work environment.

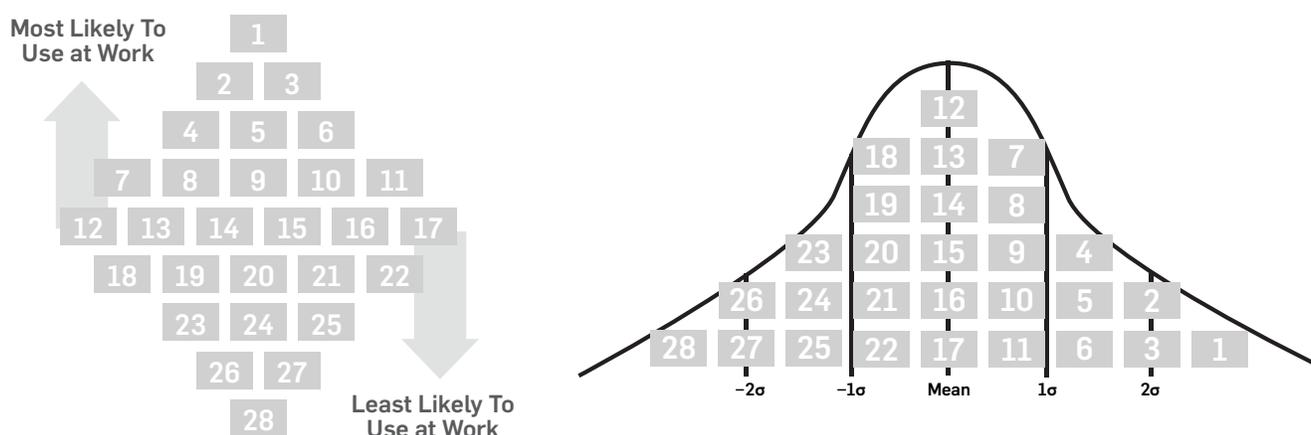
**TABLE 5**

Line Length and Practical Significance

Line Length		Change in Motives from MVS to Stage 1 Conflict
From	To	
0	10	Can be difficult to detect by self and others
>10	25	Somewhat noticeable by self and others
>25	-	Usually obvious to self and others

**FIGURE 6**

Portrait Template and the Normal Curve



The SDI reports 28 strengths, and 28 overdone strengths, in rank order. The data are normally distributed, and are presented to respondents in a graphical format that resembles a normal curve. The display format is derived from Q-methodology (Stephenson, 1953/1975). It shows the items of most significance in the two tails of the normal curve. Strengths (or Overdone Strengths) near the top of the portrait are most like respondents to deploy at work, and those at the bottom are least like them to deploy at work. Strengths on the same line have underlying scores that are close to each other, which suggests that respondents deploy those strengths at about equal levels. Figure 6 presents the standard portrait template, along with a transformation of the template under the normal curve.

The top strengths, and overdone strengths, are most significant. Detailed interpretive text is provided for

the top strengths, while limited interpretive text is provided for the remaining strengths.

**STRENGTHS AND REASONS**

Behavior is the result of purposive striving towards personally meaningful goals. In simpler terms, motives drive behavior. Therefore, the work-focused, strengths results of the SDI have greater explanatory power when combined with personality results. Each of the 28 strengths may be connected to any of the seven Motivational Value Systems. People with different personality types can deploy the same strength at work, but for different reasons.

SDI results take this into account by presenting a view of strengths informed by the most likely reasons to use those strengths, based on respondents' MVS. Table 6 shows four sample reasons to use one strength.

**TABLE 6**

The Methodical Strength and Example Reasons to Deploy It

Strength	Blue MVS Reason	Red MVS Reason	Green MVS Reason	Hub MVS Reason
Methodical: I am orderly in action, thought, and expression . . .	. . . to create a structure that will benefit people.	. . . to establish a standard to evaluate performance.	. . . to give the process a chance to work as intended.	. . . to be sure we have considered all perspectives.

The number of possible variations of the Strengths Portrait and Overdone Strengths Portrait is so large that for practical purposes, the number is almost infinite. There are 28-factorial possible ordinal rankings, with 7 MVS overlays. The formula for possible permutations is therefore  $7(28!)$ . This method and systems view of personality situated in a work context ensures a truly personalized report for each respondent.

## DESCRIPTIVE STATISTICS

SDI data are roughly normally distributed on all scales. Descriptive statistics for scales or results are presented in Tables 7, 8, and 9.

The motives scales descriptive statistics show that the data are roughly normally distributed and have similar patterns to prior studies (Barney, 1998; Cunningham, 2004; Porter, 1973; Scudder, 2013).

Tables 8 and 9 show the descriptive statistics for strength and overdone strength rankings. 1 represents the strength most likely to be deployed at work and 28 represents the strength least likely to be deployed at work. Both tables demonstrate that the strengths are about normally distributed across a large population.

As shown by the descriptive statistics. Large populations of SDI data are roughly normally distributed and it is therefore appropriate to apply parametric methods to evaluate the validity and reliability of the assessment (Rust & Golombok, 2008; Warner, 2008).

## VALIDITY AND RELIABILITY

In personality assessment, validity is about whether the results are true and accurate, while reliability is about consistency, or repeatability of the findings. Statistically speaking, the least important form of validity is face-validity, whether the respondent agrees with the results. However, face-validity is the most important aspect for users of the results. If the results are not presented in a way that rings true for the users, they will not accept or apply the results, and the assessment effort will be wasted.

Achieving face validity is an art with a scientific foundation. The SDI uses valid and reliable data, along with grounded theory, to inform internally consistent descriptions of results that resonate for the users. The SDI has extremely high face-validity. Respondents have a near universal acceptance of their results; it is rare to encounter a person who disagrees strongly with their SDI results.

**TABLE 7**

SDI Motive Scales Descriptive Statistics

Test	Well Blue	Well Red	Well Green	Conflict Blue	Conflict Red	Conflict Green
Mean	36.6	31.6	31.8	29.0	27.0	44.0
Std. Dev	10.4	11.3	10.9	11.9	12.4	11.3
Min	0	0	0	0	0	0
Max	100	100	93	100	100	100
Skew	.397	.150	.475	.468	.431	.382
Kurtosis	1.437	.762	1.232	1.074	.721	.862

*n*=9,798

**TABLE 8**

## Strengths Portrait Ranking Descriptive Statistics

ID	Strength	Mean	Std. Dev.	Min.	Max.	Skew	Kurtosis
B1	Supportive	9.9	6.5	1	28	0.586	-0.426
B2	Caring	11.1	7.1	1	28	0.456	-0.754
B3	Devoted	15.9	7.6	1	28	-0.196	-1.058
B4	Modest	13.5	8.4	1	28	0.131	-1.179
B5	Helpful	11.6	7.0	1	28	0.320	-0.921
B6	Loyal	12.1	6.6	1	28	0.227	-0.784
B7	Trusting	17.0	7.5	1	28	-0.331	-0.900
R1	Risk-Taking	20.9	7.2	1	28	-1.138	0.271
R2	Competitive	19.4	8.1	1	28	-0.804	-0.582
R3	Quick-to-Act	16.1	7.9	1	28	-0.335	-1.100
R4	Forceful	20.1	7.4	1	28	-0.994	-0.112
R5	Persuasive	17.7	8.1	1	28	-0.513	-0.962
R6	Ambitious	18.2	7.9	1	28	-0.628	-0.830
R7	Self-Confident	13.9	8.0	1	28	-0.022	-1.235
G1	Persevering	15.2	7.3	1	28	-0.227	-1.000
G2	Fair	11.7	6.5	1	28	-0.288	-0.731
G3	Principled	14.0	7.4	1	28	0.001	-1.084
G4	Analytical	14.0	8.4	1	28	0.035	-1.300
G5	Methodical	13.4	8.1	1	28	0.053	-1.202
G6	Reserved	16.8	9.0	1	28	-0.353	-1.274
G7	Cautious	14.9	7.6	1	28	-0.074	-1.061
H1	Option-Oriented	12.7	7.1	1	28	0.154	-1.045
H2	Tolerant	11.7	6.7	1	28	0.387	-0.722
H3	Adaptable	11.4	7.1	1	28	0.320	-0.900
H4	Inclusive	12.6	7.2	1	28	0.183	-0.979
H5	Sociable	13.7	8.9	1	28	0.088	-1.410
H6	Open-to-Change	12.2	7.4	1	28	0.243	-1.107
H7	Flexible	14.1	7.3	1	28	0.040	-1.045

n=12,565

**TABLE 9**  
Overdone Strengths Portrait Ranking Descriptive Statistics

ID	Overdone Strength	Mean	Std. Dev.	Min.	Max.	Skew	Kurtosis
B1	Self-Sacrificing	9.4	7.4	1	28	0.691	-0.610
B2	Submissive	14.1	7.6	1	28	0.033	-1.191
B3	Subservient	16.2	7.8	1	28	-0.226	-1.101
B4	Self-Effacing	8.9	7.5	1	28	0.882	-0.271
B5	Smothering	14.8	7.5	1	28	-0.110	-1.115
B6	Blind	12.7	6.8	1	28	0.202	-0.859
B7	Gullible	15.2	8.1	1	28	-0.038	-1.247
R1	Reckless	18.6	7.8	1	28	-0.565	-0.845
R2	Aggressive	18.3	8.8	1	28	-0.536	-1.166
R3	Rash	12.4	7.6	1	28	0.285	-1.086
R4	Domineering	17.4	8.3	1	28	-0.339	-1.185
R5	Abrasive	16.6	8.1	1	28	-0.326	-1.210
R6	Ruthless	19.9	7.4	1	28	-0.888	-0.279
R7	Arrogant	11.3	8.0	1	28	0.439	-1.083
G1	Stubborn	11.2	7.0	1	28	0.384	-0.922
G2	Cold	15.0	7.3	1	28	-0.206	-0.988
G3	Unbending	14.2	7.4	1	28	-0.019	-1.064
G4	Obsessed	13.5	7.9	1	28	0.103	-1.102
G5	Rigid	13.9	7.8	1	28	0.030	-1.174
G6	Distant	15.8	8.8	1	28	-0.115	-1.366
G7	Suspicious	15.3	8.3	1	28	-0.117	-1.286
H1	Indecisive	15.5	7.1	1	28	-0.130	-0.990
H2	Indifferent	14.6	7.6	1	28	0.009	-1.167
H3	Compliant	11.4	7.0	1	28	0.393	-0.880
H4	Indiscriminate	15.6	6.5	1	28	-0.177	-0.684
H5	Intrusive	15.9	8.2	1	28	-0.264	-1.129
H6	Inconsistent	13.8	7.1	1	28	0.042	-0.955
H7	Unpredictable	14.7	7.2	1	28	-0.069	-0.970

*n*=12,565

## VALIDITY

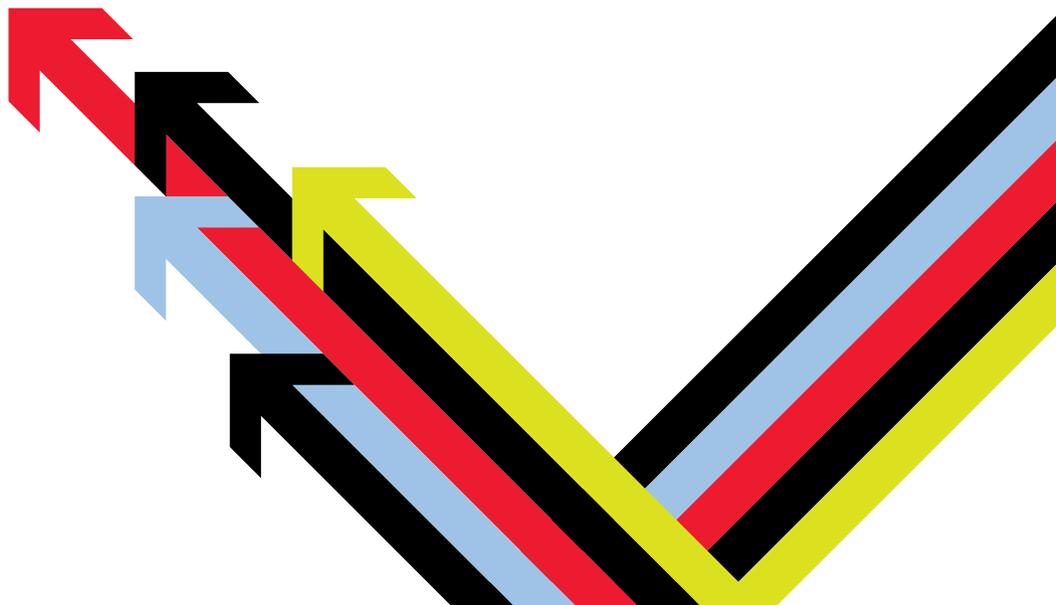
In addition to high face validity, the motives and strengths results exhibit construct validity, concurrent validity and differential validity. See Scudder (2013) for support for these claims, which are summarized below.

- **Construct Validity:** The results are conceptually consistent with the underlying theories and descriptions of personality types found in the work of Freud (1932), Fromm (1947) and Porter (1976). In other words, the SDI measures what it claims to measure.
- **Concurrent Validity:** Independent measures of motives and strengths have strong and statistically significant correlations that are consistent with the underlying typologies. Extensive factor analysis further confirmed the relationships between the concurrent measures.
- **Differential Validity:** Members of each MVS type deploy strengths in a pattern that is more like their type than the strength deployment patterns of other types. The differences between types were identified by comparing mean strength scores for each MVS type against the population and validated by t-tests showing statistically significant differences in population means.

Differential Validity is also useful in practical application, because it helps to clarify the

differences between types of people and to identify patterns that explain types. Tables 10 and 11 present the ordinal rankings of strengths and overdone strengths, by each MVS type. The ordinal rankings go from 1 (most typical) to 28 (least typical). The mean rankings were calculated by averaging the ordinal rankings of all portrait results of people in each MVS type.

Given that the MVS is a measure of personality, and the Strengths Portrait and Overdone Strengths Portrait reflect the deployment of strengths in specific roles, the work context is a mediating variable between motive and behavior. No attempt has been made to control for this mediating variable in the descriptive differential analysis in Tables 10 and 11. However, clear patterns are identifiable in the data that differentiate MVS types by the patterns of strengths that are most and least likely to be deployed in working relationships. As indicated by Tables 10 and 11, Strengths of each color are generally most likely to be deployed (lowest numbers in bold) by people with that color MVS, and least likely to be deployed (highest numbers in bold italics) by people with the two-color blended MVS on the opposite side of the triangle. For example, people with a Blue MVS are most likely to deploy the Blue strength Caring at work (mean of 6.9), while people with a Red-Green MVS are least likely to deploy Caring at work (mean of 18.1). People with a Hub MVS do not show clear preferences or patterns, which is one of the defining characteristics of the Hub MVS.



**TABLE 10**  
Strength Means by MVS

ID	Strength	Blue MVS	Red-Blue MVS	Red MVS	Red-Green MVS	Green MVS	Blue-Green MVS	Hub MVS
B1	Supportive	<b>6.6</b>	8.4	12.9	<b>15.2</b>	12.9	8.9	10.2
B2	Caring	<b>6.9</b>	8.7	14.6	<b>18.1</b>	15.1	9.7	11.5
B3	Devoted	<b>12.7</b>	15.7	18.7	<b>18.9</b>	17.5	14.2	16.5
B4	Modest	<b>11.2</b>	15.4	18.2	<b>16.3</b>	12.1	10.1	13.7
B5	Helpful	<b>8.0</b>	10.9	15.8	<b>16.7</b>	14.1	9.6	11.9
B6	Loyal	<b>10.3</b>	12.0	14.2	<b>14.9</b>	12.6	10.7	12.4
B7	Trusting	<b>13.5</b>	15.3	19.3	<b>21.9</b>	20.5	15.8	17.6
R1	Risk-Taking	22.9	19.0	<b>15.8</b>	17.4	22.2	<b>23.8</b>	21.0
R2	Competitive	22.7	18.3	<b>13.9</b>	14.1	19.6	<b>23.2</b>	19.1
R3	Quick-to-Act	16.4	14.3	<b>13.1</b>	14.9	17.6	<b>18.0</b>	16.5
R4	Forceful	23.1	19.3	<b>14.0</b>	14.5	20.2	<b>23.6</b>	20.1
R5	Persuasive	20.9	14.3	<b>10.7</b>	13.5	19.5	<b>22.7</b>	17.6
R6	Ambitious	20.9	17.6	<b>12.6</b>	13.2	18.5	<b>21.5</b>	17.9
R7	Self-Confident	17.5	12.9	<b>8.6</b>	9.3	13.0	<b>17.8</b>	13.5
G1	Persevering	17.3	<b>16.0</b>	13.6	12.4	<b>13.3</b>	15.4	15.1
G2	Fair	12.3	<b>13.2</b>	13.2	11.4	<b>9.5</b>	10.8	11.3
G3	Principled	14.5	<b>15.8</b>	15.1	12.7	<b>11.5</b>	12.8	13.9
G4	Analytical	16.8	<b>18.0</b>	15.5	10.1	<b>8.8</b>	11.9	13.4
G5	Methodical	15.7	<b>17.2</b>	14.4	8.9	<b>8.8</b>	11.8	13.0
G6	Reserved	16.4	<b>22.0</b>	22.5	17.1	<b>11.4</b>	11.3	16.9
G7	Cautious	15.5	<b>20.2</b>	20.2	13.5	<b>9.6</b>	10.7	14.5
H1	Option-Oriented	13.7	12.7	12.2	11.9	11.9	13.3	12.6
H2	Tolerant	10.8	12.7	14.0	14.2	11.6	9.8	11.7
H3	Adaptable	11.9	11.2	10.9	11.6	11.6	12.2	11.1
H4	Inclusive	11.2	10.0	12.8	15.6	15.5	14.2	12.5
H5	Sociable	12.4	9.4	10.6	16.8	18.4	17.2	14.0
H6	Open-to-Change	11.3	11.3	13.0	14.5	13.5	12.2	12.3
H7	Flexible	12.8	14.2	15.7	16.4	15.2	12.9	14.2

n=12,565

**TABLE 11**  
Overdone Strength Means by MVS

ID	Overdone Strength	Blue MVS	Red-Blue MVS	Red MVS	Red-Green MVS	Green MVS	Blue-Green MVS	Hub MVS
B1	Self-Sacrificing	<b>5.8</b>	8.1	13.4	<b>15.3</b>	12.5	7.6	9.5
B2	Submissive	<b>9.9</b>	13.7	18.1	<b>19.8</b>	16.9	11.5	14.7
B3	Subservient	<b>12.8</b>	15.7	18.9	<b>20.1</b>	18.5	14.0	16.8
B4	Self-Effacing	<b>7.1</b>	10.3	12.8	<b>11.5</b>	8.3	6.6	8.9
B5	Smothering	<b>11.9</b>	13.3	17.2	<b>18.5</b>	17.5	13.8	15.3
B6	Blind	<b>10.9</b>	11.9	14.1	<b>15.6</b>	13.9	11.9	13.1
B7	Gullible	<b>11.8</b>	13.0	17.2	<b>19.8</b>	18.9	14.7	15.6
R1	Reckless	20.5	16.8	<b>14.1</b>	15.6	19.7	<b>21.8</b>	18.6
R2	Aggressive	22.2	17.1	<b>12.4</b>	12.6	18.4	<b>22.8</b>	17.7
R3	Rash	12.2	9.8	<b>9.7</b>	13.0	14.8	<b>14.8</b>	12.6
R4	Domineering	21.6	16.1	<b>11.1</b>	11.4	16.9	<b>21.9</b>	17.0
R5	Abrasive	20.3	13.8	<b>9.9</b>	11.4	17.6	<b>21.7</b>	16.4
R6	Ruthless	23.0	19.8	<b>14.0</b>	14.3	19.5	<b>23.0</b>	19.8
R7	Arrogant	15.0	9.5	<b>6.0</b>	7.8	10.9	<b>15.7</b>	10.6
G1	Stubborn	14.2	<b>11.6</b>	8.7	7.8	<b>9.8</b>	12.8	10.6
G2	Cold	17.4	<b>16.6</b>	14.0	11.1	<b>12.0</b>	15.4	14.7
G3	Unbending	15.8	<b>15.8</b>	13.8	11.6	<b>11.6</b>	14.4	13.8
G4	Obsessed	14.9	<b>16.7</b>	15.1	11.8	<b>9.8</b>	11.4	13.2
G5	Rigid	16.2	<b>17.6</b>	15.0	10.0	<b>9.3</b>	12.3	13.5
G6	Distant	14.7	<b>20.7</b>	21.6	17.0	<b>11.0</b>	10.3	15.9
G7	Suspicious	15.8	<b>19.7</b>	19.4	13.7	<b>10.6</b>	11.4	15.1
H1	Indecisive	15.1	15.8	16.1	15.5	15.0	14.5	15.8
H2	Indifferent	11.9	16.3	18.7	18.4	14.1	11.0	14.9
H3	Compliant	10.3	11.2	13.2	13.7	11.8	10.4	11.4
H4	Indiscriminate	14.9	14.0	15.6	17.1	17.1	16.1	15.7
H5	Intrusive	14.3	12.3	14.5	18.6	19.1	17.8	16.3
H6	Inconsistent	12.3	13.0	14.5	15.9	15.2	13.4	14.0
H7	Unpredictable	13.5	15.4	16.8	17.0	15.5	13.1	14.5

n=12,565

## RELIABILITY

The test-retest, or repeated measures, reliability of the SDI's motives scales is +/- 6 points. This means that the majority of scale scores do not change enough to alter the basic understanding or interpretation of the results. However, there are some sets of scores that change on re-test more than the stated metric. This is normal for test-retest calculations. Table 12 reports the retest reliability measures from three studies. Porter's (1973) study used the Pearsonian coefficient, while Barney's (1998) and Cunningham's (2004) studies reported Cronbach's alpha.

The internal reliability of the motive scales is presented in Table 13, along with comparable data from an earlier study (Scudder, 2013). Both studies report the Cronbach's Alpha values. Each item comprising the SDI scales was evaluated to determine the effect on the internal reliability of the scales if the item were deleted.



**TABLE 12**

SDI Motive Scales Test-Retest Reliability

Test	n	Well Blue	Well Red	Well Green	Conflict Blue	Conflict Red	Conflict Green
Porter (1973)	100	.78	.78	.76	n/a	n/a	n/a
Barney (1998)	106	.85	.84	.83	.87	.81	.82
Cunningham (2004)	322	.90	.91	.89	.89	.90	.86

**TABLE 13**

Motive Scales Internal Reliability

Test	Well Blue	Well Red	Well Green	Conflict Blue	Conflict Red	Conflict Green
Scudder, (2013) <i>n=9,798</i>	.796	.846	.781	.806	.826	.710
Present Study <i>n=12,565</i>	.794	.818	.759	.766	.797	.678

**TABLE 14**

Motive Scales: Alpha Values if Items Deleted

Well/Conflict Item	Well-Scales: Items 1-10			Conflict-Scales: Items 11-20		
	Well Blue	Well Red	Well Green	Conflict Blue	Conflict Red	Conflict Green
W1/C11	.748	.817	.735	.739	.771	.646
W2/C12	.720	.796	.715	.739	.779	.650
W3/C13	.743	.822	.747	.735	.794	.651
W4/C14	.707	.792	.717	.725	.760	.627
W5/C15	.728	.794	.731	.721	.766	.656
W6/C16	.726	.811	.745	.746	.786	.679
W7/C17	.730	.784	.725	.746	.780	.658
W8/C18	.714	.793	.723	.724	.777	.633
W9/C19	.735	.798	.739	.745	.781	.636
W10/C20	.735	.808	.731	.779	.794	.669

n=12,565

As shown in Table 14, the internal reliability of the scales would be reduced if any set of items was removed from the assessment. This indicates that every set increases the internal reliability. Two items (C16 Green and C20 Blue) would slightly raise the internal reliability if deleted. However, to do so would require the removal of the other in-set responses, which would decrease the overall internal reliability of the assessment.

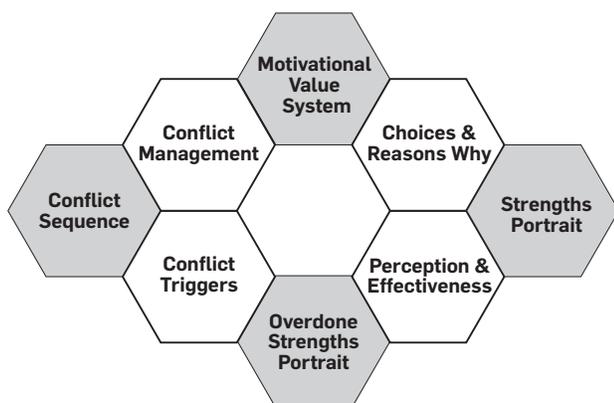
## CONCLUSION

Relationship intelligence and the SDI take a whole-life, systems view of personality, and situate the deployment of strengths in a workplace context, based on respondents' roles. The essence of a systems view is that the interaction between elements, such as motives and strengths, is just as important, if not more important, than the elements themselves. The systems view sharply contrasts with approaches to understanding people that isolate variables, and identify traits or types without accounting for emotional states or contexts in which respondents have self-determination. These reductionist approaches result in limiting, impractical measures that may have statistical validity, but lack real-world utility because they do not reflect the true complexity of human experience.

Each of the four views: Motivational Value System, Conflict Sequence, Strengths, and Overdone Strengths, connects with the other three. Figure 7 identifies four of the clearest

**FIGURE 7**

Summary Connections Between Four Views Provided by SDI



connections, which are often used in training and development efforts that include the SDI. The MVS is part of core personality. People's drives, motives, and values influence the way they choose to deploy their strengths at work. The use of strengths at work is most authentic when people deploy their strengths for an underlying reason that resonates with their MVS.

Strengths deployed in relationships at work do not always have the intended effect. This opens up connections with the concept of overdone strengths and consideration of whether the strength was appropriately applied to the task. The Conflict Sequence is part of core personality, but under a different emotional state than the MVS. Motives during conflict are directed toward

addressing the issue at hand in a way that results in resolution and a change to people's emotional states, such that they are working from their MVS again once the conflict is resolved.

The independent variables within the SDI produce virtually limitless combinations, which in turn produce deeply personalized reports for respondents. Sound academic theory, coupled with a long history of empirical support, enable the reporting and application of SDI results to blend art and science. The methodology of the SDI ensures that users receive rich, textured descriptions of personality and strengths at work, which can be applied with confidence to improve the quality of working relationships.

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