Technical Report:

Methodology and Validation Studies

Social Styles Questionnaire (SSQ) Validation

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Introduction

Two expressions in our society that are common are "No two people are alike" and "Everybody's different." Common sense tells us that people are different in many ways and common sense also informs us that people are alike in many ways. Psychologists have spent considerable time and energy working to develop methods to measure psychological differences between people and have created an array of assessment instruments to measure personality traits and behavior styles.

This quest to classify personality and behavior types is not a new effort. In ancient Greece, the physician Hippocrates outlined four temperaments to explain differences in behavior. Hippocrates identified the Sanguine, Phlegmatic, Melancholic, and Choleric types. In the last half century, hundreds if not thousands of psychological tests have been developed and published that purport to measure a wide array of psychological dimensions.

Many of these dimensions are correlated to a substantial degree, demonstrating that even though some dimensions are named and measured differently, they assess very similar dimensions of personality and behavior. For example, sociability is one of the most common dimensions measured, though it is often called by different names. In the MAP11 Profile [i], one of the eleven assessment scales is called Sociability and it measures an individual's friendliness, warmth and interest in social relationships. In the LifeStyles Inventory [ii], sociability is assessed on the Affiliation Scale, one of the twelve traits measured in the instrument. In the Big Five Personality Model [iii] [iv], sociability is assessed by the Extroversion Factor, one of the five factors assessed (along with Responsiveness to Experience, Conscientiousness, Agreeableness and Neuroticism). While the sociability dimension has some unique and distinctive facets in each of

these three assessment systems, a person scoring high (or low) in one assessment will score similarly high (or low) in the other assessments on the sociability dimension.

On the other hand, sometimes a dimension has the same name as a dimension in a different instrument but measures a different psychological construct. Take for example David McClelland's classic Need for Achievement [v] dimension. In McClelland's work, his classic Need for Achievement dimension is a far more wide-ranging than the same-named Need for Achievement dimension in the LifeStyles Inventory. McClelland's Need for Achievement dimension is assessed by four or perhaps even five LifeStyles Inventory assessment scales (Power, Competitiveness, Perfectionism, Need for Achievement, and perhaps Self-Actualization). In this instance, the dimension names are the same but the psychological constructs and the measurements are different.

Thus, it is important that psychologists define the dimensions they purport to measure and, perhaps even more important, they must be clear about the intended and appropriate uses of the assessment instrument. This is particularly important when differentiating between clinical and non-clinical instruments and applications. Often when the words "psychological instrument" are used, people think of clinical assessments because many of the best-known psychological instruments were developed for clinical applications to assess psychopathology (e.g., the Minnesota Multiphasic Personality Inventory (MMPI)[vi], early versions of the 16 PF[vii]). It is important to be clear that the SSQ reported on in this Technical Report does not measure traits or behaviors associated with psychopathology. Rather, the SSQ is focused exclusively on the measurement of behavior dimensions seen in "normal," well-functioning individuals.

The SSQ

There are two behavioral dimensions measured in the SSQ: *Assertiveness* and *Responsiveness*. In contrast to many other psychologically oriented assessment instruments that measure many dimensions, the SSQ focuses on two broad dimensions that have a wide-ranging impact on behavior – particularly with regard to an individual's preferences in interacting with others.

Assertiveness measures the degree to which a person shows a sense of urgency, directness, and desire to dominate and influence. A person scoring high on the Assertiveness dimension prefers quick action, expresses their opinions, prefers to talk than listen, and confronts situations. In contrast, the Individuals with a low score on the Assertiveness dimension are deliberate and prefer to take things slowly. Less Assertive people are not comfortable with confrontation. Less Assertive people show less initiative in their actions and words; they are reticent to speak up. Rather than strongly advocate a position, indirect individuals are more likely to ask questions. In contrast to people who score high on the assertiveness dimension and are very assertive, individuals who score low on this dimension tend to be quieter, more reserved, and operate at a slower pace. [viii]

The second dimension measured in the SSQ is called *Responsiveness.* Responsiveness measures the degree to which a person is interested in others – the company of others, the views and suggestions that other people offer, and in being accommodating towards others. Individuals scoring high on the Responsiveness dimension are relationship oriented: they prefer working with others, share their feelings with others, and consider relationships a priority. In contrast, individuals who score low on the Responsiveness dimension are more focused on tasks than on people, and tend to be more private, and more self-contained. [ix]

The SSQ combines scores on the two different dimensions to create four Social Styles:

- More Assertive and More Responsive: called an Expressive, is an individual who is people-oriented and fast-paced. Their behavioral style is to be outgoing, optimistic, and enthusiastic. They are people who like to be at the center of things. Expressives have many ideas and love to talk, especially about themselves.
- Less Assertive and More Responsive: called an Amiable, is the type of individual who is people-oriented and slow-paced. Their behavioral style is to be genial and accommodating; they care greatly about relationships with others**,** and are good team players. Amiables like stability more than risk, and tend to be timid and slow to change.
- More Assertive and Less Responsive: called a Driver, is someone who is task-oriented and fast-paced. Their behavioral style is to be firm and forceful, confident and competitive, decisive and determined. They are risk-takers.
- Less Assertive and Less Responsive: called an Analytical, is the type of person who is task-oriented and slow-paced. Their behavioral style is to be very disciplined and cautious, preferring analysis to emotion. They love clarity and order but may come as lacking spontaneity and as being too serious.

These four resulting "types" are at the heart of the SSQ. In part, the simplicity of the SSQ system makes it relatively easy for a professional to understand. The SSQ uses straightforward, non-technical language, understood by lay people rather than more technical, psychologically oriented language found in some of the more complicated assessment systems.

Applications:

The SSQ was created for professionals participating in corporate training and education programs. The SSQ assists professionals in training programs develop a greater understanding of their behavioral style and uncover how these styles play an integral role in determining how they relate to opportunities, challenges and other people on-the-job. While there are many other instruments being marketed to augment professional development applications that measure an array of important personality and behavioral dimensions, the SSQ is unique in that *it is focused on two salient dimensions that characterize an individual's preferences for styles in interacting with other people.* The SSQ helps professionals develop an understanding of their own attitudes and behaviors and to better understand the attitudes and behaviors of those that they interact with in the course of business. Furthermore, with both self-assessment and 360-degree/multi-rater capabilities, professionals develop critical insights about similarities and differences between their self-concept – how they see their own behavior – compared to 360-degree feedback ratings by others. With greater understanding of their Social Styles, individuals can learn to be more flexible and adaptive in different situations and with various people, and thereby be more productive and successful in their work.

The SSQ provides straightforward, useful information to professionals based on reliable and valid measures of behavioral style, which is the focus of the remainder of this Technical Report.

Method

Participants

The sample for this study was 478 participants who completed the SSQ in June 2002. For the purposes of this study, no demographic information was collected.

Materials

The SSQ can be administered online and by use of paper forms. In this study, data was collected using the online version.

The SSQ has 18 pairs of assessment items: nine pairs that assess More Responsive vs. Less Responsive, and nine pairs that assess More Assertive vs. Less Assertive. The format has participants respond to a pair of assessment items, with each pairing having one item for More Responsive and one item for Less Responsive, or, one item for More Assertive and one item for Less Assertive. The participant selects one item of the pair and rates the extent to which that item describes them: either Very Much or Somewhat. Examples are shown below:

Example 1: More Responsive vs. Less Responsive:

I usually find it natural and easy to share and discuss my personal feelings with others.		***I usually prefer to keep my personal feelings and thoughts to myself, sharing only when I wish to do so.***	
*O **Very Much***	*O **Somewhat***	*O **Very Much***	*O **Somewhat***

Example 2: Less Assertive vs. More Assertive

I tend to be slower paced.		***I tend to be faster paced.***	
*O **Very Much***	*O **Somewhat***	*O **Very Much***	*O **Somewhat***

Thus, the SSQ uses a four-point Likert rating scale with behavioral anchors at each end of the scale that represents opposite ends of a continuum that describe the behavior being assessed.

Previous Samples and Studies

Previous studies in 2002 used samples ranging from 480 participants to 1455 participants and were key in developing the current version of the SSQ reported on in this Technical Report. In each previous study, the sample data was analyzed along the theoretical constructs for Responsiveness and Assertiveness. The scales were examined for internal consistency via coefficient alpha that provides a lower bound to the test's reliability. Next, the items were entered into a program using a data reduction technique carried out by exploratory factor analysis (EFA) in order to capture patterns in the data that would validate the existence of two relatively independent dimensions.

After each study was analyzed, items that demonstrated the weakest inter-item correlations, factor loadings on theorized constructs, and lowest parameter critical ratios were either reworded in order to make the question clearer, or replaced. These series of studies showed relatively consistent findings in reliability and a two-factor structure, and ultimately yielded the two dimensions defined by the nine assessment items used for each dimension in this study.

Results

Reliability

Cronbach's coefficient alpha was used to analyze the reliability of the SSQ variables. Reliability of very acceptable levels was achieved for both the *Responsiveness* scale (.7527; see table 1) and for the *Assertiveness* scale (.7954; see table 2). These reliability coefficients are well above the.7 level of reliability generally considered as acceptable and just short of the .8 ideal standard for reliability as defined in the Standards for Educational and Psychological Testing published by the American Psychological Association.

Content Validity

Content validity is an important starting point for any psychological instrument, especially important for instruments that are positioned as having professional development applications. Generally considered the weakest form of validity, the core of content validity is to have measures that subject matter experts agree are relevant for the purposes and applications for which they are being used.

The attitudes and behaviors associated with the two dimensions within the SSQ, responsiveness and assertiveness, have been consistently linked to interpersonal or social styles in the research literature.[x] More specifically, sociability, flexibility, assertiveness, decision-making preferences, initiative, and sense of urgency have all been linked to job performance across an array of positions.[xi] In fact, one would be hard put to find an employee selection assessment or professional development assessment – either personality based or competency based – that does not in some form measure these types of attitudes and behaviors. Furthermore, the impact of interpersonal styles and skills on management, leadership, teamwork and

communications has been very firmly established in the research literature. [xii] [xiii] Many recent studies show that personality traits are stronger predictors of job success than IQ or book smarts.[xiv] [xv] [xvi] [xvii]

Construct validity

Using principle components factor analysis (PCA) along with varimax rotation (uncorrelated) a two-factor solution was obtained that demonstrated factor loading coefficients on the eigenvectors for the theorized constructs of *Responsiveness* and *Assertiveness* (see table 3). The eigenvalue for the first eigenvector was 3.58 accounting for 19.86 percent of the variance in the sample and the eigenvalue for the second eigenvector was 3.18 accounting for an additional 17.86 percent of the variance for total of 37.53 percent explained by the model. The subjects to variable ratio (STV), $\underline{n} = 478$, is approximately 27.5 to 1, which is more than sufficient to produce reliable results. [xviii]

Furthermore, the results of a confirmatory factor analysis that focuses on the root mean squared error of approximation (RMSEA) indicated a reasonable fit. The RMSEA was derived through CFA using Amos graphics. The RMSEA, which recently has been recognized as one of the most informative criteria in covariance structure modeling was .088 with a confidence interval at the .10 level of between .081 and .095. [xix] These results are consistent with factor analytic studies reported for instruments with similar dimensions. [xx]

Discussion

The results of the data analysis provide strong evidence for the reliability and validity of the SSQ. There was no surprise in the studies that confirmed that the reliability of the two scales is just shy of the ideal level for an assessment instrument (>.8) given that establishing reliability for conceptually sound assessment scales is most often the result of building upon and fine tuning the results of previous studies, and this study is just one in a series of 14 studies we have conducted in the year 2002. The reliability of the test is uncorrected for item length or restriction of range, so if more items were to be added it would be expected that the SSQ reliability would be improved. By methodically adding more items to a test you may be able improve reliability; however, as you add parameters it is more difficult to get a good fitting model. The reliability of the scales in the current SSQ is certainly comparable (if not better) to other tests that measure personality variables that are much more difficult to explain to a lay audience. As opportunities arise, consideration will be given to a test-retest reliability analysis.

The reliability within the instrument is built upon the very firm foundations of content validity seen in the instrument. References cited showed that the content validity of the instrument comes from a wide-ranging literature showing the relevance of Responsiveness and Assertiveness to employee job performance.

The construct validity studies, showing a two-factor structure, were not unexpected given the wide body of research – from Merrill to Stogdill [xxi] – that show that Orientation to Tasks and Orientation to People are very common in assessment instruments whether the instrument is personality-oriented or competency-based. Merrill's work is particularly relevant to a discussion of the SSQ as his studies showed that two social styles – Assertiveness and Responsiveness – are reliable and valid measures of an individual's behavioral style and play a strong role in

determining the types of behaviors that an individual will demonstrate towards others. [xxii] However, Merrill went beyond using a two-dimension social styles inventory for purely developmental purposes and successfully explored ways to use these dimensions and an additional dimension called *Versatility*, for employee selection, demonstrating not only strong face, construct and criterion validity, but also predictive validity.

There is a great deal of debate currently regarding the use of exact fit tests versus approximate fit indices. The criteria used for the RMSEA, goodness of fit, and other indices of approximation are based on expert subjective judgement, and therefore cannot be regarded as infallible. When considering approximate fit indices all together a researcher must reach a conclusion about whether the model represents the best fit to the data. The expected cross-validation index (ECVI) shows the model can be improved upon, however, and further studies will focus on how to improve this fit.

If specific applications call for it, future studies can examine the criterion-related validity of the SSQ.

Certainly, given the statistical studies to date, there is good reason to have confidence that the SSQ can be used effectively for the applications for which is designed: to provide professionals with insight about their behavioral style, using reliable, valid measures. The SSQ can add-value to corporate training programs by providing useful, highly personalized feedback to participants about their preferred styles of interaction – based on both self-assessment and co-worker feedback ratings. This 360-degree component has proven very useful for providing participants in corporate training programs. Some people have great insight into how others perceive them and some people have no idea. As workshop leaders say, “You may think you are walking on water and find that others think you’re passing it.” Studies show that work

performance improves when people receive 360-degree assessment feedback and individuals who have the greatest skill deficits benefit the most. [xxiii] [xxiv]

The SSQ allows participants to examine how two important psychosocial constructs -- *Assertiveness* and *Responsiveness* – play a role in personal motivation and interpersonal interactions in general. Furthermore, through use of the SSQ, participants learn to recognize their own preferences along these constructs, learn to recognize these preferences in others, and can develop new strategies for more effectively working with others to raise productivity and satisfaction in the workplace. The SSQ provides information that is valuable for participants in a wide array of corporate training programs including those that focus on sales, management and leadership effectiveness, team building and communications.

Table 1

Inter-item Correlations and Reliabilities for Responsiveness Scale

	Scale Mean if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
VAR01A	13.2510	.4585	.2774	.7254
VAR03B	13.3452	.3373	.2665	.7448
VAR05A	12.4749	.3983	.2139	.7350
VAR07B	12.5921	.3287	.1550	.7453
VAR09A	13.1841	.3657	.1632	.7406
VAR11B	12.9812	.3961	.2606	.7353
VAR13A	12.6130	.4981	.3467	.7200
VAR15B	13.1925	.5311	.3707	.7126
VAR17A	12.8013	.5619	.4036	.7081

Alpha = .7527 Standardized item alpha = .7522

Table 2

Inter-item Correlations and Reliabilities for Assertiveness Scale

	Scale Mean if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
VAR02B	12.3828	.4479	.2510	.7801
VAR04A	12.5063	.4963	.3159	.7738
VAR06B	12.4205	.5153	.3841	.7714
VAR08A	12.9916	.4580	.3195	.7794
VAR10B	13.0167	.4533	.2206	.7796
VAR12A	12.6987	.5153	.3208	.7711
VAR14B	12.4351	.5649	.3745	.7644
VAR16A	13.0084	.4231	.1958	.7833
VAR18B	12.5649	.4833	.2689	.7756

Alpha = .7954 Standardized item alpha = .7954

Table 3

Rotated Component Matrix

	1	2
More Responsive (1a)	.581	
More Responsive (3b)	.436	
More Responsive (5a)	.577	
More Responsive (7b)	.421	
More Responsive (9a)	.516	
More Responsive (11b)	.511	
More Responsive (13a)	.675	
More Responsive (15b)	.678	
More Responsive (17a)	.712	
More Assertive (2b)	.574	
More Assertive (4a)	.629	
More Assertive (6b)	.614	
More Assertive (8a)	.585	
More Assertive (10b)	.598	
More Assertive (12a)	.636	
More Assertive (14b)	.696	
More Assertive (16a)	.528	
More Assertive (18b)	.628	

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