A Study of Benjamin’s Eight-Facet Structural Analysis of Social Behavior (SASB) Model

Maurice Lorr
Catholic University of America

Stephen Strack
U.S. Department of Veteran Affairs, Outpatient Clinic, Los Angeles

The study purpose was to evaluate the cluster, or facet, version of Benjamin’s (1974, 1996b) Structural Analysis of Social Behavior (SASB) in independent samples of 133 normal participants and 182 psychiatric cases. We first tested for the presence of 3 circumplexes, Focus on the Other, Focus on the Self, and Introject in the 36 items that are hypothesized to define each of them. Next, intercorrelations of 8 item-based facet scales were assessed for internal consistency, factor structure, and circular order, with the expectation that the scales would be reliable, yield 2 higher-order factors, and demonstrate a circumplex structure. Principal components analysis was applied followed by varimax rotation. Data for both normal participants and patients uniformly confirmed the presence of 4 item-level factors and 2 cluster-based factors for each circle. Alpha coefficients for facet scales were typically high, but some were as low as .50. The principal difference between the normal participants and patients was that the circumplex was incomplete in the patient data with poor differentiation of the vertical and horizontal variables. © 1999 John Wiley & Sons, Inc. J Clin Psychol 55: 207–215, 1999.
The concept of a two-dimensional interpersonal circle (IPC) first emerged in a report by Freedman, Leary, Ossorio, and Coffey (1951). Their circular arrangement of interpersonal behavior actually anticipated Guttman’s (1954) mathematical model of a circumplex. However, it was Leary’s (1957) *Interpersonal Diagnosis of Personality* that galvanized interest in Sullivan’s (1947) view of interpersonal behavior and its role in personality. Leary made much use of LaForge and Suczek’s (1955) Interpersonal Check List and provided considerable clinical data in support of a multilevel conceptualization of normal and abnormal personality that differentiates interpersonal style according to the dimensions of love-hate and dominance-submission.


Among contemporary interpersonal theorists and researchers, Benjamin (1974) departed most radically from Leary’s original conceptions. Significantly, her Structural Analysis of Social Behavior (SASB) model contains three circular orders of social behavior instead of one. Two circles address interpersonal transactions whereas the third characterizes internalized intrapsychic experiences. The first is Focus on the Other. In self-report measurement the respondent indicates how he or she typically behaves toward a significant other, such as a parent or child, by freeing versus managing. The second circle represents Focus on the Self and is concerned with reactions to another’s behavior, such as submission or withdrawal. The third circle, Introjection, involves turning inward and reflects how one has been treated by significant others such as parent or spouse. The two principal dimensions defining the circular space are Affiliation (friendly versus hostile) and Interdependence (directing versus emancipating). For detailed descriptions of the model consult Benjamin (1994, 1996a, 1996b) and Henry (1994).

The complete version of SASB has 36 points to define each of the three surfaces. Benjamin (1984) subsequently developed a cluster, or facet, version of her model that is shown in Figure 1. Here she reduced the 36 points of each circle into eight groups containing four or five adjacent points. In measurement form these groups make up eight scales that contain four or five items each. The scales define the facets of the two primary dimensions that make up the three circles, with opposite types of interaction at 180° to one another. In Focus on the Other (see Figure 1), the vertical axis indicates that the opposite of freeing or emancipating is managing or controlling. On the horizontal axis, the opposite of loving is attacking. With the second circle, Focus on the Self, the vertical axis contrasts assertion/separation with submission/deference. The horizontal axis contrasts loving with recoiling/withdrawing. The third circle, called Introject, contrasts self-emancipating versus self-controlling and self-loving versus self-attacking.

The SASB model differs from other interpersonal approaches beyond its three-circle format (Benjamin, 1996a, 1996b). Benjamin believes that autonomy is the opposite of submissiveness instead of dominance, as Leary (1957) had postulated. Furthermore, most interpersonal approaches are concerned with peer-peer dyadic relations among normal participants (Lorr & Strack, 1990), whereas Benjamin’s scheme addresses peer interactions as well as the behavior of a superordinate (parent, leader, or supervisor) toward a subordinate and subordinate behavior in relation to a superordinate. Her model was developed to encompass both healthy and disordered interpersonal transactions in normal participants and patients.

Over the past 25 years numerous studies have provided evidence for the reliability and validity of the original SASB model, including data to support its 36-point circular
Surface 1: Focus on the Other

Surface 2: Focus on the Self

Surface 3: Introject

Figure 1. Benjamin's (1974, 1996b) Eight-Facet Structural Analysis of Social Behavior Model.
order (e.g., Alpher, 1988; Benjamin, 1996a, 1996b; Henry, 1994). Concerning factor structure, Benjamin (1994) reported that the model has been analyzed by exploratory factor analysis (FA; Benjamin, 1974) as well as confirmatory FA (Tscheulin & Glossner, 1993). Tscheulin and Glossner, from the University of Wartburg in Germany, translated the long form of Benjamin’s (1983) self-report questionnaire, INTREX, into German. Ratings were obtained from 187 college students. English language ratings were obtained from 133 college students in America. The two factors extracted were interpreted as Affiliation and Control. Their results confirmed Benjamin’s (1974) findings with respect to the underlying higher-order factors.

To date, however, there have been no published reports addressing the internal consistency, factor structure, and circular order of the eight-facet version of the model. With the increased interest shown by clinicians in the SASB approach over the past several years, an understanding of the psychometric properties of the facet model and scales is especially important.

**STUDY AIMS**

In an effort to provide reliability and validity evidence for the facet model, our study aims were to evaluate whether the self-reports of normal participants and psychiatric patients on the three SASB circles could be reliably grouped into facet scales that would factor into the two bipolar dimensions specified by Benjamin (see Figure 1). For instrumentation we chose the long form of Benjamin’s (1983) INTREX questionnaire. This self-report measure contains 36 items for each of the three SASB circles, which can be summarized in the form of facet scales, eight for each circle.

Data for the study were provided by Lorna Benjamin, who collected them over a period of approximately five years for a long-term program of research on the SASB. Portions of the data set were previously reported in Benjamin (1986).

**METHOD**

*Participants and Procedure*

Normal participants were 133 college students (104 women, 29 men) who were recruited as participants in a larger SASB study. Their average age was 23. The psychiatric sample ($N = 182$; 75 men and 107 women) was also employed in a larger SASB study. All participants gave informed consent to participate. The patients were hospitalized at the time of their participation and essentially all of them were taking prescribed medication during the period of data collection. Their ages ranged from 18 to 66 ($Mdn = 30$), and years of education was reported at 9 to 19 years ($Mdn = 14$ years). Diagnostic ratings were made by trained clinicians using the DSM-III Diagnostic Interview Schedule (Robins, Helzer, Croughan, & Ratcliff, 1981). Good reliability (Kappa = .86) for the ratings was established in a subset of 41 patients who were interviewed independently by a second clinician (Benjamin, 1986). Primary diagnoses included personality disorder (23.5%), depression (20.4%), bipolar disorder (18.3%), schizophrenia (14.6%), and all others (23.2%).

Individually or in small groups, participants completed the INTREX questionnaire (Benjamin, 1983) to characterize (a) how they typically react to their mother, (b) how their mother typically relates to them, and (c) how they view themselves when at their best. Patients completed the measures several days after admission to the hospital and were judged by the examiner to be symptomatically stable.
Measures

The INTREX long form (Benjamin, 1983) is a 144-item self-report and rating measure that operationalizes the various points in Benjamin’s circular representation of interpersonal space. The questionnaire is divided into four sets of 36 items, one each to assess (a) an other’s transitive focus on the rater, (b) an other’s intransitive focus on the rater, (c) the rater’s transitive focus on an other, and (d) the rater’s intransitive focus on an other. The items are essentially the same across sets but are worded differently to apply to the specific rating domain. Within each set, 16 items measure each of the two dimensions that define the circle.

Participants are asked to respond with regard to how characteristic a particular behavior is of a given relationship. In reference to a close friend, for example, participants rate the item “she accuses and blames me and tries to get me to admit that I am wrong” by responding 0 (not at all characteristic) to 100 (perfectly characteristic) in 10-point increments.

Test development and validation procedures have been described in several publications (e.g., Benjamin, 1983, 1984, 1996b). Test-retest reliability and validity were reported as being comparable to most personality assessment instruments.

For the current study, we used a single set of ratings to represent each of the three SASB circles. For Surface 1, Focus on the Other, participants rated their typical reactions to Mother. For Surface 2, Focus on the Self, participants rated typical reactions of Mother to them. For Surface 3, Introject, participants rated their self-concept when at their best. Each set of ratings yielded 36 data points, for a total of 108 responses per participant.

Statistical Analyses

As a check on the validity of our data at the item level, responses to the 36 items defining each of the three circular orders were intercorrelated and subjected to a principal components analysis (PCA). The number of components to retain was determined on the basis of Cattell’s (1966) scree test. The retained factors were then rotated for interpretation by application of the varimax procedure. Four first-order components representing the poles of each circle were expected (Benjamin, 1974, 1984).

Next, eight facet scores were calculated for each set of data by summing the scale items. Each facet contains four or five items. Alpha coefficients (Cronbach, 1951) were calculated for the facets to estimate internal consistency. The facet scores for each circle were then intercorrelated and analyzed by PCA. It was hypothesized that two factors would be isolated representing the major axes of each of the three circles (see Figure 1; Benjamin, 1984).

RESULTS

Normal Participants

The first rating completed by participants was “I reacted to Mother” (i.e., Focus on the Other). A PCA of the 36 items yielded a scree plot with a clear elbow at the fourth component, indicating the presence of four dimensions, with eigenvalues of 11.21, 3.80, 2.46, and 1.72. These accounted for 53.3% of the variance.

Analysis of the eight facet scale intercorrelations resulted in two factors with eigenvalues of 3.94 and 1.57, accounting for 68.8% of the variance. A plot of the facets along the two factors showed a fairly circular arrangement. All facets were in their expected
order, and Facets 1 and 5 defined the vertical axis whereas Facets 3 and 7 defined the horizontal axis. Facet scale 6 properly defined the blaming space between controlling (5) and attacking (7). However, Facets 2 (affirm) and 4 (protect) were closely aligned with Facet 3 (love), and Facet 8 (ignore) was aligned with Facet 7 (attack). This implies that participants did not frequently or strongly use affirming, protecting, and ignoring responses in their relationship to mother.

The second instructional set was “Mother focused on me” (i.e., Focus on the Self). A PCA of the 36 descriptors disclosed four dimensions with eigenvalues of 15.9, 3.75, 1.90, and 1.34, which accounted for 66.9% of the variance. Analysis of the correlations among the eight facet scores revealed two clear principal components with eigenvalues of 4.88 and 1.42, accounting for 78.8% of the variance. A plot of the loadings exhibited a circular order with Facets 1, 5, 3, and 7 defining the horizontal and vertical axes, respectively. All facet scales were in their expected order but Scales 2, 4, 6, and 8, which should define the space between axes, were aligned closer to the horizontal than vertical axis. Thus, all diagonal components were somewhat weakly defined in this data set.

The third circumplex concerns the Introject. The normal participants rated the “Introject at best,” which describes the participant’s self-concept at his or her best. The component analysis of the 36 descriptive variable intercorrelations uncovered the anticipated four factors with eigenvalues of 6.21, 4.03, 3.00, and 1.59 (41.2% of the variance). Results for the eight facet scales revealed two distinct components (eigenvalues = 2.74 and 1.73) that captured 55.9% of the variance. Again, the two axes were well defined and all facets were properly ordered. On the diagonals, Facet 4 (self-protecting) and its opposite, Facet 8 (self-neglecting), were well defined, but Facets 2 and 6 were aligned with the horizontal axis and thus did not well represent the self-affirming versus self-blaming segments.

Alpha coefficients for the facet scales are given in Table 1. The reliability estimates ranged from a low of .50 for Facet 8, Self-Neglect, of the “Introject at best” rating, to a high of .92 for Facet 2, Disclose, of the “Mother focused on me” rating. The median coefficient across ratings was .74.

**Patient Sample**

The first rating was “I reacted to mother.” PCA of the intercorrelations of the 36 items yielded four components with eigenvalues of 9.26, 5.18, 3.84, and 1.51. These accounted

<table>
<thead>
<tr>
<th>Facet</th>
<th>Normal Participants</th>
<th>Patient Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>React to Mother</td>
<td>Mother Focused on Me</td>
</tr>
<tr>
<td>1</td>
<td>.57</td>
<td>.63</td>
</tr>
<tr>
<td>2</td>
<td>.84</td>
<td>.92</td>
</tr>
<tr>
<td>3</td>
<td>.78</td>
<td>.80</td>
</tr>
<tr>
<td>4</td>
<td>.74</td>
<td>.86</td>
</tr>
<tr>
<td>5</td>
<td>.69</td>
<td>.74</td>
</tr>
<tr>
<td>6</td>
<td>.88</td>
<td>.84</td>
</tr>
<tr>
<td>7</td>
<td>.80</td>
<td>.87</td>
</tr>
<tr>
<td>8</td>
<td>.62</td>
<td>.83</td>
</tr>
</tbody>
</table>

*Note:* N for normal participants = 133, N for patient participants = 182. Facet scales each contain four or five items.
for 55.0% of the variance. Analysis of the facet scale intercorrelations showed two significant eigenvalues of 3.18 and 2.01 that accounted for 64.8% of the variance. A plot of the rotated loadings revealed no circular order, with the facets centered in the upper right hand quadrant. Facets 1 and 5 were closely aligned in the center of the top right quadrant; Facets 2, 3, and 4 were bunched together at the top of the plot; and Facets 6, 7, and 8 were grouped together in the top, right-hand corner of the lower right quadrant. Thus, the horizontal love-attack axis was well defined whereas the vertical emancipate-control axis was completely collapsed. The facets that should have defined the quadrants were bunched along the horizontal axis.

The patient sample ratings for “Mother focused on me” were next analyzed. Analysis of the correlations among the 36 items yielded four principal components with eigenvalues of 14.08, 3.69, 3.11, and 1.42. These accounted for 61.9% of the variance. The scree test was applied as a cutoff. The facet scale intercorrelations, when analyzed, disclosed two significant components with eigenvalues of 4.53 and 1.42. These accounted for 74.3% of the variance. A plot of the factor loadings showed no circular order. Facet 1 defined the top of the plot, as would be expected, but Facet 5 was placed in the lower right quadrant adjacent to Facets 6, 7, and 8. Facet 2, 3, and 4 were bunched together in the top left quadrant. Again, it appeared as if the horizontal axis was well defined but not the vertical axis, and the facets that should represent quadrants were aligned with the horizontal axis.

The third rating set was “Introject at best”. Analysis of the item intercorrelations showed the presence of four principal components whose eigenvalues were 12.14, 3.90, 2.60, and 1.53. These captured 56.0% of the variance. Analysis of the eight facet score intercorrelations resulted in two significant components with eigenvalues of 4.02 and 1.62 that accounted for 70.5% of the variance. A plot of the varimax-rotated factor loadings reveal a noncircular order with Facets 2, 3, 4, and 5 present in the top left quadrant; Facets 6, 7, and 8 in the bottom right quadrant, and Facet 1 in the center of the top right quadrant. Similar to the other patient data sets, there was a collapse of the vertical axis and the diagonal elements were bunched along the well-defined horizontal axis.

Table 1 gives alpha coefficients for the facet scales. The reliability estimates ranged from .50 for Facet 1, Self-Emancipate, of the “Introject at best” rating, to .90 for Facet 2, Disclose, of the “Mother focused on me” rating. The median coefficient across ratings was .80. Comparing results for the patients and normal participants, it is evident that the groups produced similar reliability estimates for the “I reacted to mother” and “Mother focused on me” ratings. However, the patients produced significantly higher alpha coefficients than the normal participants on the “Introject at best” ratings for Facets 2, 3, 4, 6, 7, 8 (Fisher’s $z \approx 2.73, p < .006$, for all comparisons).

DISCUSSION

In both normal and patient samples the factor structure of Benjamin’s SASB model appeared to be robust. As expected, in all of our analyses at the item level only four principle components were evident for each circle, and at the cluster level only two components emerged. Results are consistent with previous reports concerning the dimensions underlying the three circles (e.g., Benjamin, 1974, 1994, 1996a, 1996b; Tscheulin & Glossner, 1993).

However, plots of the cluster scores along the two axes revealed considerable variability in their placement across participant samples. Circular ordering was approached in all three normal data sets, but circles could not be recovered in the patient data. Among normal participants, departures from circular ordering were caused by failure of the diagonal elements to be fully differentiated from the horizontal axis. There was no clear
pattern as to which diagonal elements were problematic. This implies that the type of rating elicited from participants determines variability more than other factors, such as psychometric properties of the INTREX instrument (cf., Benjamin & Wonderlich, 1994).

In all three patient data sets there was a failure of differentiation in the vertical and horizontal clusters. Regardless of the type of rating, patients appeared heavily focused on issues of loving versus attacking/withdrawing. Their focus on this interpersonal dimension resulted in low ratings for all other domains, that is, emancipation versus control, affirming versus blaming, and ignoring versus protecting. Performance of the clusters did not appear to be related to their level of internal consistency.

The patient data suggest that, unlike the normal participants, they tend to use only a limited range of descriptors when portraying the mother-child relationship and their self-concept when at their best. This finding fits well with Benjamin’s (1996b) contention that disordered interpersonal relations are characterized by inflexible, stereotyped transactions.

Although our results were not significantly affected by the low alpha coefficients for some of the facet scales, these would have been a concern had we been correlating the measures with other instruments. Since correlations cannot be greater than the internal consistency of the instruments employed, researchers who want to link the facet scales with extra test measures will do well to select ratings that are likely to yield high alpha coefficients. Among the normal participants, the “Mother focused on me” ratings were the most internally consistent, and for the patients it was the “I reacted to mother” ratings.

Because our data were limited to the mother-child relationship and introject at best, further research is needed to confirm potential problems in the performance of clusters that measure diagonal elements. Although Benjamin (1996b) has demonstrated the utility of her model and the INTREX measure in a number of normal and patient samples, a question that remains is whether improvements in defining the diagonal variables of affirming-blaming and protecting-ignoring would result in better differentiation from the horizontal loving-attacking axis in important superordinate/subordinate relationships.

REFERENCES


