Multivariate Experimental Clinical Research, Volume 6, No. 3, 1983, 143-159

ASSESSMENT OF ASSERTIVENESS IN THE INTELLECTUALLY HANDICAPPED

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ABSTRACT

Earlier work in the structural analysis of self-reported difficulty in assertiveness had indicated that individuals differed in terms of a two-facet model — response type (positive vs. negative assertiveness) by referents (close vs. distant interpersonal encounters). This study replicated the individual differences structure for an intellectually handicapped sample, thus extending the generalizability of that model. However, although the dimensions were found in three different methods of assessment, self-report, behavioral rating, and role play, little agreement was found between the methods in accounting for individual profiles. Additionally, there were hints that the four interaction dimensions of assertiveness might actually reflect different difficulty positions on a non-linear unidimensional scale of assertiveness. Using a Rasch model to derive the single scale, role play and self-report were significantly correlated in their assessments, but the correlation was not very great. It was hypothesized that method differences might reflect legitimately different perspectives of close-distant referent raters.

Assertiveness assessment has received considerable attention in the psychological literature, but its implied benefits have been sought more for general and clinical populations rather than the intellectually handicapped. Since non-institutionalized intellectually handicapped people are frequently subject to unrealistic demands which can lead to failure, low aspiration levels, and uncritical compliance and acquiescence (Cf. Rosen, et al., 1974), all of which exacerbate the initial handicap, more attention to their potential difficulties in assertiveness is warranted. This study extends earlier findings in the structural analysis of assertiveness difficulties (Firth & Snyder, 1979; Leah, et al., 1979) as applicable to the intellectually handicapped.

Following general disenchantment with assessments based on global clinical impressions (Eysenck, 1965), research and clinical practice in the area of assertiveness have employed three basic assessment methodologies: self-report, behavior ratings, and role play. These three approaches to data collection vary as to their strengths and weaknesses.

The most frequently used method has been the paper and pencil self-report inventory (e.g., Galassi, et al., 1974; Goldsmith & McFall, 1975; Lazarus, 1971; McFall & Lillesand, 1971; Rathus, 1973; Wolpe & Lazarus, 1966). Unfortunately, many of the available instruments have reliability, validity, or item specification problems (see Rich & Schroeder, 1976). By their very nature, self-report assessments are open to confounding response sets (Anastasi, 1979), and the extent of such response sets is related to the needs of the individual for protection, avoidance or criticism, sympathy, and help (Crowne & Marlowe, 1960). Intellectually handicapped individuals may well be particularly vulnerable to such needs and hence to response sets. Furthermore, individuals with restricted behavioral repertoires are less able to imagine what response they would make to the imaginary situation presented in the inventory (Miller, 1972). The routine, protected life of most intellectually handicapped people makes this a very real assessment problem. Nevertheless, self-report methodology has generally been shown to be as reliable and valid as any other (Hersen & Bellack, 1976; Scott & Johnson, 1972), and it is often able to tap information not detected in the standard laboratory/clinical assessment (Mischel, 1972). As such, its use would seem appropriate to an exploratory study with the intellectually handicapped.

An assessment methodology suited to the reading, writing, and verbal deficiencies of the intellectually handicapped is the behavior rating, which enables behavior to be recorded by some relevant observer in the natural setting. The majority of social skills inventories designed for use with the intellectually handicapped are of a behavior rating type (Gunzberg, 1967). These inventories have their problems as well. Mischel (1968) proposes that a significant source of variance in behavior ratings lies in the role of the rater, and that reported consistencies in behavior may result from constructs of the observer rather than from the performance of the observed. Similarly, Klimoski and London (1974) suggest that the rater interprets or classifies overt behaviors according to a personal conceptual schema, leading to biased recording. There is a need to investigate the extent to which behavior ratings agree with the results from other assessment methodologies.

Role play methodology has also had widespread use in the assertion field, particularly with the introduction and revision of inventories based on standardized interpersonal situations (Eisler, et al., 1973; Eisler, et al., 1975). Studies attempting to establish role play as a valid assessment tool have produced inconsistent findings (Greenberg, 1967), and it has been suggested that the results can often be re-interpreted in terms of experimenter demand characteristics (Orne, 1962). Problems can, however, be minimized if the experimenter fulfills certain requirements. The individual should role play his/her own behavior rather than that of another person (Geller, 1978), should be aware of all the circumstances relevant to each imagined scene (Darroch & Steiner, 1970), and should not be tested with situations far removed from his/her past experience

(Miller, 1972). The use of role play in the assessment of assertiveness has yet to be tested with the intellectually handicapped.

The varied strengths and weaknesses of the three assessment strategies (self-report, behavior ratings, and role play) suggest that each could make a contribution to the investigation of assertiveness in the intellectually handicapped. The application of all three strategies in the same sample permits each method to act as a validatory check on the others, as well as possibly revealing the unique capabilities of any one method in any one area of assertive behavior.

This study sought to evaluate the method influence in the assessment of assertiveness difficulties for an intellectually handicapped sample. Item selection was based on the findings of Leah et al. (1979). After earlier work had challenged the conceptual validity of a popular, global-index, assertiveness inventory (Law, et al., 1979), Leah et al. attempted to take account of types of responses and types of situations which characterize assertive behavior in university students. They extended the two-facet model developed by Gay, et al. (1975) — referents or interpersonal partners (e.g., friends, parents, strangers) x response classes or types of assertive behavior (e.g., asking favors, refusing requests, expressing disagreement). The results indicated that interpersonal partners could be reliably subclassified into distant and close referents, and that response types could also be grouped into two subclasses of positive and negative responses. They proposed that difficulty in assertiveness in a student population can be conceptualized by means of an interactionist model of two response classes x two referent groups. This conceptualization is supported by studies showing the importance of familiarity with the interpersonal partner (Bander, et al., 1975; Goldsmith & McFall, 1975; Warren & Gilner, 1978), and by clinical and research reports acknowledging the need to train both positive and negative expressions of feelings (Hersen & Bellack, 1976; Hersen & Eisler, 1976; Hersen, et al., 1973; Lazarus, 1971; 1973). Firth and Snyder (1979) also found that this structural pattern held equally well for a general population (hospital worker) sample.

In applying this conceptual scheme to the intellectually handicapped, data were collected across similar items representing the distant-close referent and positive-negative response categories of assertion for three assessment methods on a sheltered workshop sample. Tucker's exploratory three-mode common factor analysis (Snyder & Law, 1979; Tucker, 1966) was applied to the individual x assessment method x type of assertiveness difficulty data matrix to extract the structure of individual differences for the cross-method evaluation.

METHOD

SAMPLE

From the employees of the five Activity Therapy Centres in Brisbane, Queensland, sixty volunteer individuals were selected from the borderline to mildly retarded measured-intelligence range. Males and females were equally represented in the sample with an average male age of 19.4 years and an average female age of 21.1 years.

ASSESSMENT INSTRUMENTS

The assessments domain was represented by 16 items with each item appearing in a self-report, behavior rating, and role play rating inventory respectively. Items were derived from a two-facet model of assertiveness difficulty delimited by the interaction of assertiveness response classes and referents (Leah, et al., 1979). Response classes were categorized as positive or negative. The expression of warmth and the initiation of conversations represented positive assertiveness in this study; and the expression of negative feelings and the refusal of requests represented negative assertiveness. Referents were categorized as close or distant. Friends and parents represented close referents; and strangers and authority figures represented distant referents. Each item thus involved one assertive response, either positive or negative, with one referent, either distant or close. Actual phrasing of the item was based on practical circumstances typical of the situations that these individuals may encounter in their daily lives.

For all three assessments, the suspected degree of difficulty the individual would experience was rated. Gambrill and Richey (1975) suggested that the individual's degree of discomfort and anxiety in assertive situations may be a better predictor of clinical disability than measures of response probability or frequency. A 1 to 4 rating scale was considered most suited to the intellectual capacity of the sample. One corresponded to 'very difficult', two 'difficult', three 'easy', and four 'very easy'.

PROCEDURE

In order to avoid reading difficulties, each item of the self-report inventory was read aloud to each individual and where necessary, the meaning explained and clarified. The responses were recorded by the experimenter.

The behavior ratings were completed by one workshop supervisor in each Activity Therapy Centre. Four of the items, however, concerned the individual's behavior at home and it was therefore necessary to contact the parents for their ratings in those situations. Where such contact was impossible, elder siblings, hostel mistresses and housemothers completed the ratings.

The role plays were conducted individually in a private office at each center. Ratings, carried out by an Honors clinical psychology student, used the same four point scale and were based on (a) content of response, (b) duration of response, (c) latency of response, and (d) eye contact. An independent (clinical psychology student) rater assessed 60% of the role plays with an inter-rater reliability coefficient of 0.92. The role plays were conducted approximately two weeks after the self-report inventories were administered.

THREE-MODE COMMON FACTOR ANALYSIS

The data matrix, X(ijk), is arranged into three observational (raw data) modes: (I) persons × (J) assessment methods × (K) assertiveness difficulty items. The strung-out data matrix of individuals by combination variables, X (I × JK), intercorrelates to yield R (JK × JK). Factoring the combination variable correlation matrix leads to F (JK × M, where M < JK), the matrix of generalized individual differences factor loadings associated with the method-item variables.

Tucker's three-mode common factor analysis (Snyder & Law, 1979; Tucker, 1966, pp. 301-311) exploits the inherently three-mode data design more fully and decomposes these individual differences into their separate method, item, and interactional influences.

For each observation, Tucker's three-mode common factor analysis model is given as:

$$[1] \quad x_{ijk} = \sum_m \sum_p \sum_q a_{im} b_{jp} c_{kq} g_{mpq} + u_{ijk},$$

where x(ijk) is a difficulty rating for individual i by assessment method j on assertiveness item k; a(im) reflects the influence of the individual differences factor m on individual i; b(jp) reflects the influence of the method factor p on method j; c(kq) reflects the influence of the assertiveness difficulty factor q on assertiveness item k; and u(ijk) is the uniqueness associated with that rating. Each g(mpq) is an entry in a reduced three-way core matrix classified by the derivational (factor) modes, M, P, and Q; its value specifies the interrelationship among these three different domain factors.

Standardizing the ratings across i for each jk combination and calculating the correlations, the Tucker model becomes, in matrix form:

$$[2] \quad R \text{ (with communalities)} = (B * C)\, G\, A'\, A\, G'\, (B' * C'),$$

where * denotes the direct or Kronecker product (see Tucker, 1966, or below); A (I × M), B (J × P), and C (K × Q) are the basic derivational (factor) modes associated with the individuals, assessment methods, and assertiveness items observational (raw data) modes; and G (PQ × M) is the interactional, three-mode core matrix. In this case, the factor coefficients for individuals in matrix A are not determinate and A'A = I is assumed. The dimensionality of A and its interactional impact are contained in the core.

Although the matrix operation of the direct product will not be familiar to most psychologists, it is an important operation for the three-mode factor analytic model, in that it enables us to combine matrices of different orders. Applied to this case,

$$(B * C) = \begin{bmatrix} b_{11}C & \cdots & b_{1P}C \\ \vdots & & \vdots \\ b_{J1}C & \cdots & b_{JP}C \end{bmatrix}$$

where the direct product supermatrix has JK combination rows and PQ combination columns. Thus, a new row is formed by multiplying each entry in the B matrix by the entire C matrix row; a new column is similarly constructed by the

combination of each element of B with the entire C matrix column. Since the core matrix, G (in Equation 2), will have PQ combination rows, the direct product matrix and the core matrix can be multiplied in the usual way. In effect, the three-mode model indicates that the original correlation matrix (with communalities on the diagonal) is reduced to a three-mode core, but can be recovered by scaling the core by the direct product of the variable mode solutions.

The derivational modes, B and C, and the core, G, are related to a traditional factor analysis of the combination R matrix as follows:

[3] $F = (B * C)\, G$,

where B and C are column-wise sections of orthonormal matrices and because of the use of correlations, describe deviations from average ratings; and F is the factor pattern of the combination variables. Core, thus, weights each pq combination value in order to reproduce the individual differences factor loading associated with the particular combination variable. The larger the influence of the separate mode idealized dimensions in the combination variable individual differences factor, the higher the weight given in the core. These interactional weights in core are calculated by:

[4] $G = (B' * C')\, F$,

because $B'B = I$ and $C'C = I$.

Transformations (rotations) can be applied to each of the B and C modes and the core. Since the core is frequently interpreted in terms of the B and C dimensions, which form its rows, it must be transformed in the same way as those solutions. The inverse transformations from the B and C solutions produce what is called the "counter-rotated core." Further, in order to simplify the core (column) individual differences factors interpretation, the core can be transformed (rotated) itself. Calculation details are given in Snyder and Law (1979) and Snyder, et al. (1979).

In the present case, the following procedural steps were taken:

(1) The data were organized into a persons by combination methods-items matrix and standardized across persons in the usual manner during the calculation of correlations among the methods-items variables.

(2) The methods-items combination correlation matrix was factored to yield the F factor matrix (Equation 3).

(3) From the methods-items combination correlation matrix, the separate methods and items averaged correlation matrices were calculated.

(4) Both the methods and items correlation matrices were factored to yield the B and C matrices (Equation 3).

(5) All the factor matrices were rotated to an appropriately interpretable solution. Retention of roots was decided on the basis of Scree Tests and final interpretability.

(6) The core matrix was calculated (Equation 4); counterrotated to match the B and C solutions; and rotated to correspond to the F solution.

(7) Interpretation focuses on the core matrix, which in turn depends upon the B and C solutions.

RESULTS

The three-mode common factor analysis results are presented in terms of the assessment method component matrix, the assertiveness difficulty item factor matrix, and the three-way core matrix. Individual differences are implicated in the core interpretation.

Inspection of the assessment method component matrix (Table 1) indicates minimal cross-method agreement; that is, the variable vectors, when plotted in accordance with their weights on the component reference axes, are nearly perpendicular to one another (the highest correlation is 0.22 between self-report and role play methods). The apparent cross-method agreement in the first component is artifactual, attributable to component model constraints on variance accountability.

TABLE 1

Unrotated Component Loadings for the Assessment Methods (Unrotated B Matrix)

Method	Component		
	1	2	3
Self Report	.67	-.49	.55
Behavior Rating	.60	.78	.19
Role Play	.72	-.18	-.66

Note: Traditionally salient loadings (.30 and above) are not printed in bold face because the vector plots show the methods to be independent.

Since the method correlation matrix is calculated across the item relationships in the three-mode combination correlation matrix, the low correlations between the methods imply that the methods display little agreement across any item combinations. Difficulties expressed in any one data collection perspective may or may not be similarly detected in another approach. Since each method therefore presents a somewhat different view of the individual difficulties

experienced in these situations, a dimensional reduction based on common variance alone may be misleading and certainly less useful than retaining the full method variance.

Component axes were rotated through each of the method variables to ascertain counterrotational values for the calculation of the core. The methods retained their identification in the derivational mode: the first factor was the *Behavior Rating Factor* (B1); the second factor was the *Self-Report Factor* (B2); and the third factor was the *Role Play Factor* (B3).

TABLE 2

Varimax Rotated Factor Loadings for 16 Items
(Rotated C Matrix)

Item	Factor			
	1	2	3	4
Initiate interaction/Stranger	.04	**.41**	**.46**	.02
Express positive feelings/Authority	-.05	**.58**	.22	.15
Express displeasure/Friend	**.41**	.20	.24	.06
Refuse unreasonable request/Parents	.18	-.10	.24	**.48**
Express positive feelings/Stranger	-.05	.22	**.58**	.10
Initiate interaction/Authority	.01	**.72**	.19	.06
Refuse unreasonable request/Friend	**.53**	.00	-.13	.06
Express displeasure/Parents	**.32**	.18	.19	**.40**
Refuse unreasonable request/Authority	**.62**	-.17	-.05	-.02
Express displeasure/Stranger	**.56**	.08	.27	-.03
Initiate interaction/Friend	.04	.25	**.42**	**.38**
Initiate interaction/Parents	-.03	.20	.01	**.49**
Refuse unreasonable request/Stranger	**.42**	.14	-.23	.22
Express displeasure/Authority	**.50**	-.12	.00	.17
Express positive feelings/Friend	-.03	.16	**.38**	**.30**
Express positive feelings/Parents	.09	.00	.02	**.48**

Note: Salient loadings (.30 and above) are printed in bold face.

Common factor analysis of the assertiveness items resulted in four factors accounting for 50.8% of the total variance (see Table 2). The retention of four factors was consistent with the Scree Test of the eigenvalues (which were 3.26, 2.35, 1.40, 1.11, 0.97, 0.90, 0.80, 0.79, etc.) and the predicted number of dimensions based on previous research with this form of questionnaire. The first factor was marked by difficulties with negative assertiveness responses in general and was

interpreted as the *Negative Assertiveness Factor* (C1). The second was marked by difficulties with the initiation of interactions with authority and stranger referents and the expression of positive feelings to authority referents; this factor was interpreted as the *Distant Referent Factor* (C2). The third was marked by difficulties with positive assertiveness responses to strangers and friends and was interpreted as the *Positive Assertiveness Factor* (C3). The fourth was marked by difficulties with parents and in positive assertiveness, with friends. This factor was interpreted as the *Close Referent Factor* (C4). These results are consistent with the facet structure implicit in the item selection and further substantiate the generality of that structure across samples.

The remaining questions pertain to the generality of the assertiveness difficulty structure across the assessment methods and the similarity of the individual rankings within that structure. The pattern of core values indicates the way in which the three derived methods agree and disagree on the structure identified for the assertiveness items. Since these values for the individual differences factors (columns in Tables 3 and 4) display a similar differentiation across methods of positive and negative assertion and to a lesser extent, close and distant referents, these categories appear to reliably characterize the item structure regardless of the method of assessment.

TABLE 3
Rotated Core Matrix (G)

Method/Item	Individual Differences Factor					
Factor	F1	F2	F3	F4	F5	F6
B1 C1	0.08	1.44	0.00	0.03	0.00	0.21
B1 C2	-0.07	-0.04	-0.04	1.01	0.02	-0.13
B1 C3	0.35	-0.20	-0.10	1.18	-0.29	0.03
B1 C4	0.19	0.09	0.50	0.25	0.61	0.16
B2 C1	-0.29	0.29	0.05	0.22	-0.08	1.10
B2 C2	0.73	0.09	0.30	0.04	-0.59	0.19
B2 C3	0.49	0.32	0.27	0.23	0.02	0.02
B2 C4	0.32	-0.07	0.88	-0.18	0.11	0.73
B3 C1	0.39	0.01	-0.80	0.19	0.70	0.43
B3 C2	1.11	-0.17	0.18	-0.09	-0.07	0.20
B3 C3	0.97	0.08	0.05	0.26	0.36	-0.15
B3 C4	0.57	-0.06	0.40	-0.07	0.97	-0.10

Note (1). Entries indicate the extent to which a particular Kronecker value from (B*C) contributes to the individual differences factor.

Note (2). B1: Behavioral Rating; B2: Self-Report; B3: Role Play; C1: Negative; C2: Distant (Positive); C3: Positive; and C4: Close.

TABLE 4

Percent Variance of Rotated Core Matrix (G) Entries

Method/Item	Individual Differences Factor					
Factor	F1	F2	F3	F4	F5	F6
B1 C1		13%				
B1 C2				7%		
B1 C3				9%		
B1 C4			2%		2%	
B2 C1						8%
B2 C2	3%				2%	
B2 C3	2%					
B2 C4			5%			
B3 C1			4%		3%	
B3 C2	8%					
B3 C3	6%					
B3 C4	2%				6%	
Individual Differences (F) Slabs	25%	15%	13%	18%	15%	14%
Methods (B) Slabs	36%	28%	36%			
Items (C) Slabs	33%	22%	21%	24%		

The six columns in the core correspond to the individual differences factors (as per Equations 3 and 4) and the twelve rows correspond to the 3-methods-by-4-items factors derived from the B and C solutions. Retention of six individual differences factors is based on interpretability of the patterns of core weights (after rotation), before "factor splitting" occurs with greater dimensionality. Interpretation of the core rests on the interactional individual differences entries marking the method-item factors. Because the three-mode core is a kind of factor loading matrix, it can be rescaled so that each entry represents the proportion of variance accounted for by a particular interaction (see Table 4).

Convergent validity implies a similarity of structure across methods and agreement within the structure on individual status. As demonstrated by the assessment method analysis and confirmed in the core analysis, there is no *overall* convergence of any assertive dimension. However, the core specifies the derivational combinations which converge to some extent across pairs of methods. Salient interactional values for the *Self-Report* and *Role Play Factors*

across the *Distant (marked only by positive items)* and *Positive Factors* respectively reflect very slight validity for the identification of difficulties with positive assertive responses. Interestingly, although some of the positive-distant items involved the supervisor as the referent, supervisors apparently rated a different set of individuals as having these difficulties (*Individual Differences Factor 4*). The supervisors' perspective of the social interactions in the sheltered workshops may not accurately reflect the feelings and anxieties experienced by the worker in the initiation of social interactions and the expression of positive feelings to new people (strangers) and the supervisors themselves.

Different combinations of negative assertiveness and close referent interactions underlie the remaining four individual differences factors. Slight agreement across methods was found for the *Close Referents Factor,* split across two individual differences factors (Nos. 3 and 5). In role play assessment, negative assertiveness loads negatively on *Individual Differences Factor 3* and positively on *Individual Differences Factor 5,* both of which characterize parental relationships in the *Close Referents Factor.*

The *Negative Assertiveness Factor* showed no convergence across methods, resulting in four individual differences factors (Nos. 2, 3, 5, and 6). For *Individual Differences Factor 2,* negative assertiveness stood out as an independent marker, but in *Individual Differences Factors 3, 5, and 6,* it linked with the *Close Referents Factor* in different assessment methods. The association with the *Close Referents Factor* in these cases derived from the associated difficulty to refuse an unreasonable request from parents (Item 4). It is perhaps not surprising that marked individual differences would be reflected in parental relationships, an area deserving particular attention for intellectually handicapped adolescents.

DISCUSSION

Application of the Tucker three-mode common factor analysis technique to multi-method assertiveness difficulty rating data reveals six generalized individual difference factors, accounting for 45.5% of the total variance. Three assessment method factors and four assertiveness difficulty response factors are found to underlie the individual differences functions. Salient interactions are identified which imply variations in the influence of the assertiveness item structure within and across the different assessment methods, but no general claim for convergent validity can be presented.

DERIVATIONAL MODES

The categories of positive and negative assertiveness responses and to some extent, close and distant referents reliably characterize the item structure. Despite the special sample characteristics, these results confirm those found in student (Leah et al., 1979) and hospital worker (Firth & Snyder, 1979) samples.

The independence of the assessment methods indicates little cross-method convergence when assertiveness difficulties are considered without regard for their particular type and referent. By implication these results underline the complexity of the assertiveness construct.

CORE

The outstanding feature of the core is the differentiation of positive and negative assertiveness within each of the assessment methods. Referent designations are present but subordinate to the response category in the interactional pattern. This further underlines the differences between assertiveness categories regardless of the particular perspective (self, situational other, or objective observer).

Negative assertiveness shows no convergence across methods in the core although it accounts for 33% of the item common variance (slab C1) and marks about 28% of the core variance (B1C1F1 = 13%; B2C1F6 = 8%; and B3C1F3 = 4% plus B3C1F5 = 3%) in separate individual differences factors. Interacting with Close Referents (in F3, F5 and F6), negative assertiveness accounts for 33% of the core variance (11% in each individual differences factor). Thus, despite the clear distinction between positive and negative assertiveness, the structural interactions of response classes with referent types are ambiguous and the convergent validities are slight and unconvincing. Positive assertiveness shows some convergence across the self-respect and role play methods but separates for behavioral ratings. Interacting with Distant Referents, positive assertiveness accounts for 19% of the core variance with the self-respect and role play methods and 16% with the behavioral ratings method.

Although the procedural operationalization of this study purposefully fractionates the general construct of assertiveness, the utility and conceptual tidiness of construct unidimensionality luringly leads us to the reevaluation of the multidimensional hypothesis particularly when confronted with such weak confirmation of the more complex configuration.

SPECULATIVE COMMENTS

Table 5, in which the assertiveness items are rank ordered by their overall rating-means, reveals a possible explanation for the stability of the factor structure and the dominance of the positive/negative assertiveness dimension. Positive assertiveness with close, then distant, referents proved to be the easiest response category and negative assertiveness with authority, then close, then stranger, referents proved to be the most difficult for this intellectually handicapped sample. The rank orders for positive assertiveness items across methods were reasonably consistent and the demarcation with negative assertiveness items, was clear. This raises the spectre of a confound between individual differences variance and among-item variance; the factor structure (the C mode) may reflect the ordered difficulty of the items. That is, the factor structure may be determined by a grouping together of items of similar difficulty. Factor analysis operates on the implicit assumption that all items are approximately equivalent with respect to their extremeness. When the marginal distributions of two items are disparate, the correlation coefficient no longer has a maximum absolute value of 1.00. Further, when both marginal distributions are extreme but similar in shape, the lower absolute value of the coefficient is no longer zero. Thus, wherever a set of items varies in the extremeness, this variation influences the patterning of correlations and consequently, the factor structure.

TABLE 5

Mean Ratings for Assertiveness Items

Item No.	Facet Specifications	Self Report Means	Behavioral Rating Means	Role Play Means	Overall Means
11	Positive/Close (Friend)	3.45	3.48	3.40	3.44
16	Positive/Close (Parents)	3.43	3.37	3.45	3.42
15	Positive/Close (Friend)	3.28	3.37	3.15	3.27
12	Positive/Close (Parents)	3.15	3.22	3.40	3.26
2	Positive/Distant (Auth.)	3.10	3.27	3.30	3.22
6	Positive/Distant (Auth.)	3.03	3.13	3.08	3.08
1	Positive/Distant (Stranger)	2.80	3.02	2.97	2.93
5	Positive/Distant (Stranger)	2.75	2.98	2.91	2.88
13	Negative/Distant (Stranger)	2.78	2.68	2.72	2.73
10	Negative/Distant (Stranger)	2.72	2.87	2.53	2.71
3	Negative/Close (Friend)	2.53	2.87	2.63	2.68
8	Negative/Close (Parents)	2.57	2.73	2.53	2.61
7	Negative/Close (Friend)	2.53	2.65	2.60	2.59
4	Negative/Close (Parents)	2.53	2.70	2.50	2.58
14	Negative/Distant (Auth.)	2.37	2.80	2.57	2.58
9	Negative/Distant (Auth.)	2.33	2.57	2.58	2.49

Note. Scale ranges from 1 (very hard) to 4 (very easy).

TABLE 6

Individual Item Fit for the Three Assessment Methods from Recovery Data by the Rasch Multiplicative Binomial Model

Item No.	Self Report Probability	Behavior Rating Probability	Role Play Probability
1	.67	.17	.33
2	.18	.88	.44
3	.14	.12	.78
4	.40	.10	.51
5	.09	.56	.23
6	.21	.08	.52
7	.65	.06	.49
8	.24	.31	.32
9	.21	.01*	.84
10	.03	.06	.11
11	.41	.60	.75
12	.86	.32	.19
13	.94	.64	.94
14	.56	.21	.01*
15	.28	.78	.84
16	.78	.78	.27

Note: * indicates lack of fit as $p \leq .01$

In this case, negative assertiveness may be inherently more difficult than positive assertiveness, particularly for intellectually handicapped individuals. Given the interpretability of the rank-ordered items as a single dimensional construct of assertiveness, ranging in difficulty from positive to negative assertiveness, the item sets for each of the three methods were individually analyzed by the Rasch Multiplicative Binomial Model as a test of unidimensionality (Andrich, 1978). This procedure determines whether a set of items can be represented on a single latent variable by taking into account the variation in item difficulty. An item's distributional characteristics are handled by modeling the probability of a given response to an item as a logistic function of the item difficulty and the individual's overall assertiveness. The difficulty and assertiveness parameters are estimated by maximum likelihood procedures. By attempting to recover the individual subject data from these parameters and then testing the difference between the obtained and the recovered data with a Chi-square test, it is possible to see how well the unidimensional Rasch Multiplicative Binomial Model fits a particular set of data.

All three method item sets fit the unidimensional model (Table 6), with only minor perturbations. The small sample size precludes a conclusive demonstration of fit, but the unidimensional hypothesis is buttressed by the structural agreement across three separate methods of assessment. An important implication of this finding is that the summary status of any individual is now assessed by a total score of scaled items, which effectively results in a collapsed item mode. Taking into account these new scaled total scores, only the self-report and role play assessment methods were significantly correlated ($r = 0.37$; $p < .01$), indicating some convergent validity under the unidimensional hypothesis.

CONCLUDING REMARKS

Several hypotheses emerge from this study:

(1) The robust positive-negative/close-distant assertiveness structure may actually reflect a unidimensional scale of assertiveness. Difficulties with global scales in the past may have resulted from imprecise item sampling strategies.

(2) Role play and self-report methods show some agreement under the unidimensional hypothesis, but each method obviously offers a rather different perspective of an individual's status. Since these methods differ in terms of the rater's association with the rated individual (that is, self, stranger, and authority figures), the unique perspectives may validly reflect these differing relationships.

(3) While there may be quantitative differences in assertiveness difficulties across intellectual levels, the structure of individual differences appears to be highly similar for those groups studied (students, hospital workers, and sheltered workshop workers). This qualitative similarity highlights the generalizability of the structure of assertiveness, although the precise reasons for this generalizability require further examination.

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