Content Dimensions of Hogan's Empathy Scale

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Short Abstract

Factor analysis of Hogan's Empathy Scale, scored in Likert format, yielded four factors: Social Self-Confidence, Even-Temperedness, Sensitivity, and Flexibility. Correlations with ten personality measures confirmed the factors' psychological meanings. The factors accounted for small but equal amounts of variance in Hogan's original Q-sort empathy criterion.

Session Preference: Personality; General Personality; Personality Measurement
No slides.

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Sponsor's Statement:
I have read the full abstract of the original paper and recommend its inclusion in the 1982 program.

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Content dimensions of Hogan's Empathy Scale

(Categories: Personality; General Personality; Personality Measurement)

Problem and Purpose

In a factor analysis of Hogan's (1969) Empathy Scale, Greif and Hogan (1973) found three major factors: even-tempered disposition, social ascendency, and humanistic sociopolitical attitudes. The present study was designed to improve upon Greif and Hogan's analysis in three ways.

First, the data analyzed by Greif and Hogan were dichotomous (True-False), and many of the items' endorsement frequencies deviated from a 50-50 split. Factor analysts generally agree that it is hazardous to analyze such data (Comrey, 1978; Nunnally, 1978). The present study avoids that problem by using a Likert response format (1 = extremely uncharacteristic; 5 = extremely characteristic).

Second, the factor labels supplied by Greif and Hogan were based on an intuitive examination of item content. The present study interprets the meanings of the obtained factors not by item content alone, but by patterns of correlations with established personality measures.

Finally, Greif and Hogan's analysis did not discuss the relative importance of the three Empathy Scale factors. The present study addresses this issue by regressing the Q-sort empathy criterion scores originally used by Hogan (1969) on factor subscales, to determine how much variance can be accounted for by each factor.

Subjects and Procedures

Two groups of subjects were used. The first were 168 Johns Hopkins undergraduates (75 male; 51 female; 42 unidentified). They were administered Hogan's (1969) Empathy Scale in Likert form. A subsample of 65 men
Dimensions of Empathy

and 42 women also took a battery of personality scales (see Table 1).

The item response data from the Empathy Scale was factor-analyzed using the Pall Principle Components routine described by Nie, et al. (1975). The limited number of subjects precluded separate analyses by gender. Based on eigenvalue size, amount of explained variance, and interpretability of content, four factors were retained for final rotation.

To help interpret the factors, all items that loaded primarily on one factor were grouped, forming four factor-sub scales. Scores on these sub-scales were computed and correlated with the personality scales described in Table 1, and convergent and discriminant patterns identified.

The second group of subjects were the 45 research scientists and 66 student engineers studied by Hogan (1969). The archival records for this group were rescored to yield the four Empathy factor-subscale scores. The subjects' original Q-sort ratings of empathy (see Hogan, 1969) were regressed against the subscale scores, and the relative sizes of the simple correlations and beta weights were examined.

Results\(^1\)

Factor Analysis

Four factors had eigenvalues greater than 3; together they accounted for 26 per cent of the variance in Empathy Scale scores.

Items loading highest on the first factor included "I usually take an active part in the entertainment at parties" (.73) and "I have a natural talent for influencing people" (.65). Based on item content, the factor was tentatively labeled "Social Self-Confidence;" the factor resembles

\(^1\)A complete description of factor loadings and correlations is available from the first author.
Dimensions of Empathy

Greif and Hogan's second factor.

Highest loading items on the second factor included "I am sometimes cross and grouchy without any good reason" (-.55) and "I am usually calm and not easily upset" (.58). The content of the items loading primarily on this factor suggested the label "Even-temperedness;" the factor is similar to the first factor found by Greif and Hogan.

Items loading highest on the third factor included "I like poetry" (.41) and "I always try to consider the other fellow's feelings before I do something" (.38). The factor was tentatively labeled "Sensitivity."

Examples of items loading highest on the fourth factor are "It bothers me when something unexpected interrupts my daily routine" (-.51) and "Disobedience to the government is never justified" (-.53). The somewhat varied content of this factor we thought was best described by the label "Flexibility;" the factor resembles Greif and Hogan's third factor.

Correlates of Factors

Correlations between each of the four factor-sub scales and the personality measures were generally in the same direction, but differences in both magnitude and direction of some correlations supported the factor-sub scales' unique meanings (see Table 1).

Social Self-Confidence correlated highest with Acting Ability (.57), Sociability (.38), and, in the negative direction, Shyness (-.77), Agreeableness (-.65), and Personal Distress (-.57). Subjects were asked to rate how characteristic each of 28 adjectives were of themselves on a 7-point scale. Adjectives correlating highest with Social Self-Confidence
were Not Shy (.77), Assertive (.65), and Outgoing (.70). These results imply that the high-scorer on this factor is socially adept, confident, and perhaps a little overbearing; this supports the label Social Self-Confidence.

Even-Temperedness correlated highest with Agreeableness (.44), Perspective-Taking (.36), and the adjectives Cheerful (.40), Good-Natured (.56), and Even-Tempered (.61). This pattern of results discriminates the meaning of this subscale from the first factor-subscale, and supports the label Even-Temperedness.

The Sensitivity subscale correlated most highly with Imagined Self (a measure of the tendency to identify with characters in movies, novels, plays, and other fictional situations, .44), Empathic Concern (.42), and the adjectives Rule-Abiding (.31), Caring (.32), and Emotional (.29). The high-scorer on this subscale appears to be compassionate, concerned about others, and moral, supporting the label for the factor-subscale.

Finally, the Flexibility subscale correlated most highly with the Survey of Ethical Attitudes (.44), which measures a complex syndrome including political liberalism and a preference for unstructured, ambiguous, novel situations (Hogan, Johnson, & Emler, 1978). The three adjectives most descriptive of the high scorer were Unconventional (.39), Rebellious (.37), and Experimenting (.41). Flexibility may not be a perfectly precise label for this factor, though it is difficult to find a better term for the broad, complex syndrome implied by the factor's item content and pattern of external correlations.
Regression Analysis

The magnitudes of the simple correlations between Q-sort empathy criterion scores in Hogan's (1969) sample and the four factor-subscale scores were as follows: Sensitivity, .31; Flexibility, .23; Even-Temperedness, .14; and Social Self-Confidence, .16. The beta weights in the multiple regression equation were, respectively, .23, .16, .10, and .10. The overall multiple $R$ was .37. Each factor-subscale appeared to predict equally small, yet unique portions of variance in the Q-sort criterion scores.

Implications

Factor analysis of Hogan’s Empathy Scale, scored in a Likert format, yielded four distinct factors, three of which strongly resemble the factors found by Greif and Hogan (1973): Social Self-Confidence (Greif and Hogan’s social ascendancy); Even-Temperedness (even-tempered disposition); and Flexibility (humanistic sociopolitical attitudes). The items that defined the Sensitivity factor in the present study were split between Greif and Hogan’s even-tempered disposition and humanistic sociopolitical attitudes factors. One could argue that the present factor analysis essentially replicates the findings of the Greif and Hogan factor analysis. That is, people whose Q-sort profiles indicate that they are empathic also describe themselves—on Hogan’s Empathy Scale—as even-tempered, socially confident and ascendent, sensitive and caring, and politically and psychologically open-minded.

The present study extends Greif and Hogan’s findings in two ways. First, it confirms and clarifies the interpretation of the Empathy Scale’s
Dimensions of Empathy

6

dimensions by analyzing the convergent/discriminant patterns of correlations
with other personality measures.

Second, it shows that each factor predicts equally small yet unique
amounts of variance in Q-sort empathy scores. The regression analysis
suggests that the four factors are equally important facets of empathy,
but that a large amount of variance in the criterion was left unexplained.

These findings imply that Hogan's Empathy Scale, despite having shown
empirical validity many times in the past, could be improved by adding to
the item content of the scale. Specifically, items dealing with self-
awareness, imaginative play, insight, and social perceptiveness might be
added, because these are the defining characteristics in Hogan's (1969)
Q-sort profile of a highly empathic person. Furthermore, following
Davis (1981), it may be wise to score the components of empathy separately,
because each has a unique psychological meaning, and may yield unique re-
sults in different types of research studies.


Davis, M. H. A multidimensional approach to individual differences in empathy. Manuscript submitted to *Catalog of Selected Documents in Psychology*, 1981. Available from author at Program in Measurement, 7th Floor Ballantine Hall, Indiana University, Bloomington, Indiana 47405.


## Dimensions of Empathy

### Table 1 Correlates of Empathy and Its Factors

<table>
<thead>
<tr>
<th>Empathy</th>
<th>Social Self-Confidence</th>
<th>Even-Temperedness</th>
<th>Sensitivity</th>
<th>Flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Scale</td>
<td>(69)a</td>
<td>(79)a</td>
<td>(74)a</td>
<td>(61)a</td>
</tr>
<tr>
<td>Social Self-Confidence</td>
<td>64**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Even-Temperedness</td>
<td>43**</td>
<td>09</td>
<td>(74)a</td>
<td></td>
</tr>
<tr>
<td>Sensitivity</td>
<td>30**</td>
<td>02</td>
<td>06</td>
<td>10</td>
</tr>
<tr>
<td>Flexibility</td>
<td>68**</td>
<td>22**</td>
<td>19**</td>
<td>10</td>
</tr>
</tbody>
</table>

### Personality Scales

| Acting Ability   | 42**                   | 57**              | 03          | -08         | 14          | 12          |
| Sociability      | 33**                   | 38**              | 14          | 10          | 04          |             |
| Shyness          | -54**                  | -77**             | -14         | -02         | -02         | -14         |
| Personal Distress| -34**                  | -37**             | -26**       | 14          | -07         | -07         |
| Agreeableness    | -13                    | -40**             | 14          | 14          | -07         | -07         |
| Perspective Taking| 35**                   | 14                | 38**        | 23**        | 15          | 15          |
| Imagined Self    | 25**                   | 14                | -12         | 14          | 14          | 14          |
| Empathic Concern | 26**                   | 08                | 16          | 14          | 10          | 10          |
| SEA - Liberal    | 28**                   | 14                | -19         | -03         | 14          | 14          |

### Adjectives

| Not Shy          | 42**                   | 77**              | 03          | -08         | 12          |
| Assertive        | 33**                   | 65**              | -10         | -01         | 09          |
| Outgoing         | 45**                   | 70**              | 12          | -01         | 13          |
| Cheerful         | 36**                   | 13**              | 14          | -03         | 08          |
| Good Natured     | 36**                   | 19**              | 56**        | 08          | 10          |
| Even Tempered    | 06                     | -06               | 01**        | -07         | 01          |
| Rule Abiding     | -17                    | -15               | 14          | 31**        | -43**       |
| Caring           | 31**                   | 18                | 24**        | 32**        | 07          |
| Emotional        | 27**                   | 27**              | -16         | 29**        | 15          |
| Unconventional   | 22*                    | 19*               | -06         | -09         | 39**        |
| Rebellious       | 25**                   | 23*               | -24*        | -11         | 37**        |
| Experimenting    | 32**                   | 25**              | -01         | -09         | 31**        |

**Note.** Decimal points are omitted from all correlation coefficients. Underlined coefficients indicate correlations that best define the meaning of the empathy factors.

*a* Coefficient alpha reliability estimates for Empathy Scale and Subscales

*b* References for scales are as follows: Acting Ability (Briggs, Cheek, & Buss, 1980); Sociability and Agreeableness (Guilford & Zimmerman, 1955); Shyness (Cheek & Buss, in press); Personal Distress, Perspective Taking, Imagined Self, and Empathic Concern (Davis, 1981); and SEA, Form B, scored in the liberal (Ethics of Conscience) direction (Hogan, 1970).

*p < .05

**p < .01