

STAGE STRUCTURE IN OBJECTIVE MORAL JUDGMENT: A REPLICATION

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We assessed the stage structure of moral judgment, as defined by the Defining Issues Test, following the procedures used by Davison, Robbins, and Swanson (1978). Participants from 3 different age groups ($N = 234$; $n = 78$ respondents per group) were recruited. The adult age group (aged 20+ years) in this study was more representative than the adult age group used in the Davison et al. study and our findings did not replicate their results. In sum, we found no clear evidence of specific stage ordering.

Keywords: stage structure, moral judgment, objective moral judgment, Defining Issues Test.

Kohlberg (1969) specifies six hierarchical and sequential stages in his theory of moral development. Following Wohlwill (1973), these stages form a disjunctive scale in which each emerging stage is assumed to replace the preceding stage.

The Defining Issues Test (DIT; Rest, Cooper, Coder, Masanz, & Anderson, 1974) was developed as an attempt to operationalize the assessment of level of development of moral judgment. Following Kohlberg (1969), the DIT is used to assess level of development through the Piagetian technique of analyzing respondents' solutions to moral dilemmas. For each of six dilemmas, respondents use a 5-point Likert scale (1 = *great*, 5 = *no importance*) to rate 12 statements reflecting issues that might be useful for solving each dilemma. The statements are worded

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so as to reflect the thought processes associated with a specific stage, ranging from stage 2 (naively egotistical orientation) to stage 6 (social-principled orientation; Kohlberg, 1969). In fact, Kohlberg and Gilligan (1971) proposed that stage 5 be divided into two parts: 5A and 5B.

Davison, Robbins, and Swanson (1978) studied the data obtained by Rest, Davison, and Robbins (1978) using the DIT and concluded that, in general, stage scores derived from the DIT are consistent with the ordering of stages in Kohlberg's (1969) theory. In their definitive report on the stage structure of the DIT, Davison and Robbins (1978) employed a four-level, cross-sectional sample ($N = 160$) to demonstrate the age-relatedness of DIT stage scores. The oldest group in this cross-sectional sample comprised 25 male seminary students and 15 male doctoral students studying moral philosophy. Rest et al. (1974) and Davison et al. (1978) observed no sex differences on the DIT, but they seem to be unaware that this oldest group of respondents may be particularly sensitive to moral dilemmas because of vocation, rather than age.

Our intention in conducting this research was to replicate the study of Davison et al. (1978), which was based on data obtained by Rest et al. (1974), in which the oldest respondents did not have a vocation that might make them particularly sensitive to moral dilemmas.

Method

48

Participants

We recruited 234 participants on a voluntary basis, and divided them into three distinct cross-sectional subsamples (each $n = 78$). The respondents in Group 1 were junior and senior high school students (aged 13–16 years) at a predominantly middle- to upper-middle-class urban school. The respondents in Group 2 were seniors (aged 17–19 years) from the same school as Group 1 or were members of selected undergraduate classes from a relatively conservative, large Midwestern university. The respondents in Group 3 were predominantly graduate education students (aged 20+ years; specific ages not obtained), from the same Midwestern university; many were employed at a school system in the area.

Instrument

The instrument used was an adaptation of the DIT (Rest et al., 1974), with the directions modified (Rest, 1976, *personal communication*) to facilitate the use of computer response sheets; further, the illustrative example was considerably revised. Following Davison et al. (1978), six stage scores (2, 3, 4, 5A, 5B, and 6) were derived for each respondent by computing the average rating given by the respondent to items keyed to each of the six stages.

STAGE STRUCTURE IN OBJECTIVE MORAL JUDGMENT

Results

Following Schönemann (1970), Davison (1977), and Davison et al. (1978), there are three general structural hypotheses associated with the analyses of stage data:

1) The intercorrelations of the stage scores should display a simplex structure; this pattern is based on Guttman's (1959) contiguity hypothesis. The greater the order difference between two stages, the lower their intercorrelation will be. If the stages are ordered according to an underlying developmental continuum, the correlations in any row or column will decrease as they become removed from the diagonal element.

2) A principal components analysis of the stage intercorrelations should define a two-component solution, such that for the first component the intermediate stages have the largest loadings, whereas the loadings on the second component are ordered according to stage, with the most advanced stage having the largest loading (Davison, 1977).

3) A metric unfolding analysis (Schönemann, 1970) of the stage scores should result in a single dimension. Respondent scores along this dimension should be ordered by age, with younger respondents having the lowest scale scores. Furthermore, the lower stages should have lower scale scores than the higher stages do.

Table 1 shows the intercorrelations of the six stage scores as related to the first structural hypothesis. As can be seen in Table 1, there is a tendency for the large correlations to be in close proximity to the main diagonal. Three of six stages (5A, 5B, and 6) do not conform to a simplex structure. Whether or not the magnitude of the differences between pairs of correlations represents "realistic" differences is a legitimate question. Although a perfect simplex cannot be expected in practice, it remains to be determined whether these intercorrelations resemble a simplex.

Table 1. *Stage Score Intercorrelations*

Stage	2	3	4	5A	5B	6
2	1.00	.40	.40	.38	.38	.34
3	.40	1.00	.63	.62	.50	.37
4	.40	.63	1.00	.55	.47	.44
5A	.38	.62	.55	1.00	.43	.40
5B	.38	.50	.37	.43	1.00	.30
6	.34	.37	.44	.40	.30	1.00

Note. $N = 234$.

The second structural hypothesis, regarding a principal components analysis of the data, should provide additional information regarding the simplex nature of the intercorrelations. The latent roots of the

STAGE STRUCTURE IN OBJECTIVE MORAL JUDGMENT

intercorrelations clearly indicate a one-component solution (Table 2). Nonetheless, two components were retained to assess the second structural hypothesis regarding the factor pattern matrix. The extreme stages have the lowest loadings on component 1; however, the intermediate stages do not have the highest loading on component 1. The second component does not confirm the secondary expectation of the second structural hypothesis, that the magnitude of the loadings would be hierarchical, in the same order as the stages. In fact, when plotted according to their two-component loadings the stages do not come close to resembling a semicircle.

Table 2. *Stage Score Intercorrelations*

Stage	Factor pattern		Scale value	Characteristic root (ordered by magnitude)
	I	II		
2	.64	.20	-2.56	3.23
3	.82	-.23	-0.90	0.73
4	.81	-.06	-0.58	0.69
5A	.78	-.09	-0.54	0.57
5B	.70	-.37	-3.44	0.44
6	.63	.70	3.45	0.35

The third structural hypothesis stipulates that a metric multidimensional unfolding analysis (Schönemann, 1970) should yield one dimension along which people are ordered by age and the stages are ordered by hierarchical position. Following Davison et al. (1978), older respondents should have higher scores and higher stages should have higher scale values. The scale values may be thought of as estimates of moral development levels. A single scale was extracted, for which the values are reported as the middle column of Table 2.

The scale values do not conform to the structural expectations. Indeed, the more extreme stages showed the largest magnitudes of scale values, whereas the middle stages showed the smallest magnitudes of scale values. Along this same dimension, the oldest participants had an average scale score of .02, and the youngest had an average scale score of .03. The difference between these three means is neither statistically, $F(2, 233) = .02, p < .05$, nor practically significant.

The first structural hypothesis, stipulating that the stage intercorrelations follow a simplex, was not clearly supported or not supported. The second structural hypothesis, regarding the results of a principal components analysis of the stage intercorrelations, was clearly not supported. This lack of support offers additional evidence suggesting that the first structural hypothesis was not valid based on the data we obtained in this study. Finally, the third structural hypothesis, concerning the results of a metric multidimensional unfolding analysis, was not supported.

Discussion

Our results do not support the ordering of stages 2, 3, 4, 5A, 5B, and 6, as measured by the DIT. Furthermore, we obtained no clear evidence of any specific type of stage ordering, as demonstrated by our lack of support for the results of Davison et al. (1978). Rather than interpreting these results as a failure to confirm Kohlberg's (1969) theory of moral judgement, we believe it is more prudent to view them as evidence for the DIT's possible lack of construct validity (Rest, 1976, *personal communication*; Rest et al., 1974).

A major limitation to this study is that the adult sample from Davison et al.'s (1978) study was exceptionally sensitive and responsive to moral dilemmas. Such sensitivity could artifactually influence the perceived role of age in responding to the DIT. Additionally, our sample size within this age group was almost twice the size of that recruited by Rest et al. (1974) and used by Davison et al. (1978). Thus, our results may have greater stability than those of Davison et al. (1978). Clearly, an additional replication study is in order.

References

50

- Davison, M. L. (1977). On a metric, unidimensional unfolding model for attitudinal and developmental data. *Psychometrika*, *42*, 523–548. <http://doi.org/cqfzj5>
- Davison, M. L., & Robbins, S. (1978). The reliability and validity of objective indices of moral development. *Applied Psychological Measurement*, *2*, 389–403. <http://doi.org/c2ntt6>
- Davison, M. L., Robbins, S., & Swanson, D. B. (1978). Stage structure in objective moral judgements. *Developmental Psychology*, *14*, 137–146. <http://doi.org/cdmk6m>
- Guttman, L. (1959). A structural theory for intergroup beliefs and action. *American Sociological Review*, *24*, 318–328.
- Kohlberg, L. (1969). Stage and sequence: The cognitive-developmental approach to socialization. In B. A. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 347–480). Chicago, IL: Rand McNally.
- Kohlberg, L., & Gilligan, C. (1971). The adolescent as a philosopher: The discovery of the self in a postconventional world. *Daedalus*, *100*, 1051–1086.
- Rest, J., Cooper, D., Coder, R., Masanz, J., & Anderson, D. (1974). Judging the important issues in moral dilemmas: An objective test of development. *Developmental Psychology*, *10*, 491–501. <http://doi.org/c57gix>
- Rest, J., Davison, M. L., & Robbins, S. (1978). Age trends in judging moral issues: A review of cross-sectional, longitudinal, and sequential studies of the Defining Issues Test. *Child Development*, *49*, 263–279. <http://doi.org/c8wt5n>
- Schönemann, P. H. (1970). On metric multidimensional unfolding. *Psychometrika*, *35*, 349–366. <http://doi.org/dx6h72>
- Wohlwill, J. F. (1973). The environment is not in the head. *Environmental Design Research*, *2*, 166–181.