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EXPANDING ANALYTIC POSSIBILITIES OF ROKEACH VALUES DATA

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The non-parametric nature of Rokeach Value Scale data severely limits the kinds of analyses that currently can be used. This study investigated the validity of Hayes's (1967) formula for converting rank ordered Rokeach Values data to a normal distribution, the distribution theoretically achieved through the use of rated data. Findings support the validity of Hayes's formula and expand the analytic possibilities of data collected on the Rokeach instrument.

THE Rokeach Value Scale (Rokeach, 1967) has received wide use as an instrument for the measurement of values (Rokeach, 1970, 1973; Kitwood and Smithers, 1975; Feather, 1972, 1973a, 1973b). Respondents were asked to rank order 18 instrumental value terms and, again, to rank order 18 terminal value terms. In Rokeach's (1970, 1973) formulation, the rank ordering of these terminal and instrumental values constitute a person's value system. However, the nonparametric nature of the data severaly limits the kinds of analyses that can be appropriately used. Rank ordered data cannot easily be entered into regression or other multivariate analyses. Consequently, relationships between people's value structure and other attitudes and behaviors have often been unexplored, even when the data on those variables has already been collected.

Several authors, however, have suggested means of converting

rank ordered data to a normal distribution, the distribution theoretically achieved through the use of rated data. In particular, Hayes (1967 : 35) has suggested that the relative differences among the objects ranked be thought of as similar to differences between the Z values falling at the boundary points of N-1 equal probable intervals falling at the mid-range of a normal distribution. For any object falling at rank j, we can find from the normal table the Z score cutting off the lower $(j\text{-}.5)/N$ proportion of the area under the normal curve (Hayes, 1967 : 36). Hence, the ranked items of the Rokeach scales can be transformed into Z scores corresponding to the division into 17 equal areas (18 boundary points) under the normal curve. This transformation assumes that differences between ranks at the extremes would be more discriminable than differences in the middle of the scale. While Hayes suggested the formula, he did not report any evidence of its validity. He did not test scores computed by transforming ranked data with scores achieved by having subjects rate the same items.

Feather (1972, 1973a, 1973b) converted ranked data from the Rokeach Value Scale using the Hayes transformation in an effort to expand the possibilities for analysis. In one of his studies, Feather (1973b) investigated whether average value systems varied depending on the method used to assess importance. He randomly assigned 382 Australian college students to complete the Rokeach Value Scale by either ranking, rating (1-8 point scale) or paired comparisons methods. He concluded that the final average order of importance assigned to the values was much the same regardless of whether respondents ranked, rated, or paired the items. While the Feather study is a useful step in the investigation of methodological similarity, his comparison of the average order of importance falls short of validating the Hayes's conversion formula.

Method. During the Fall of 1979, as part of another study on faculty values and productivity, 63 faculty in the areas of science, social science and humanities at the University of Michigan completed the Rokeach Value Scale in two ways: They each rank ordered 18 terminal and 18 instrumental values in order of the importance of those values to them. They also rated each value term on a 1-8 scale (least important to most important). Order of presentation of the two response procedures was randomly assigned.

Value terms were rank-ordered based on the mean rankings of each term (Feather, 1973b). Rank ordered values were converted to a normal distribution (i.e., rated data) through the conversion formula presented by Hayes (1967). To investigate the validity of

TABLE 1
Distribution of Pearson Correlations Between Rank Ordering of Values Converted to Ratings and Actual Ratings

Magnitude of Pearson Correlations	Number of Persons	
	Terminal Values	Instrumental Values
90–99	16	16
80–89	22	14
70–79	14	15
60–69	1	4
50–59	2	2
40–49	2	2
30–39	3	4
20–29	0	0
10–19	0	0

this procedure, these "hypothetical ratings" (i.e., the converted rank ordered data) were correlated with the actual ratings of those values. Table 1 reports the distribution of those correlations. Eighty seven percent of the terminal value items and 79 percent of the instrumental items had correlations between rankings converted to ratings and actual ratings of $\geq .70$. These findings tend to support the validity of the Hayes's formula for converting rankings to ratings, at least as it is applied to Rokeach values data. Moreover, the results provide support for the use of Rokeach value data collected on rating scales. The results of this study, then, may help expand the analytic possibilities of values data collected on the Rokeach measure.

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