

ADAPTING SOCIAL MEASUREMENT FOR SPECIAL POPULATION GROUPS

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ALL TOO OFTEN investigators are faced with a major measurement problem in estimating values for socio-cultural-psychological variables. If there is a tool available to measure the dimension in question, very often it is designed for use with a population group different in type from that with which the investigator is planning to work. Such differences may affect the measurements obtained.

PROBLEMS OF RELIABILITY, VALIDITY AND COMPARABILITY

Researchers who are faced with the question of using a tool on a population for which it was not designed, if they suspect reliability or validity may be compromised, seem to deal with the problem in one of four ways.

1. They ignore the problem. Since researchers are but mortal beings as are other men, some mental process seems to assist them in believing that (a) what can be ignored perhaps does not exist, or (b) what cannot readily be dealt with will surely go away.
2. They identify a problem connected with the use of different and specific population groups, either in the studies in which the tool was developed, or in the new study being designed. However, although there may be such differences identified, for purposes of the study such differences are assumed to be negligible, and the tool is used as it stands.
3. They identify the problem, and recognize that population differences may modify in unknown ways the measurements which could be obtained through the use of such a tool. They reject the tool, developing a new method to measure the dimension in question.

4. They adapt the measurement tool for use with a different type of population, seeking to establish similar standards for reliability and validity.

Many factors enter into the making of such decisions in the practice of research, the variety of which may be known perhaps only to the researcher. Time, expense, the availability of populations suitable for study, the degree of measurement bias expected in the proposed study population, and the urgency of the research problem are just a few of the factors which may outweigh the disadvantages of pursuing the investigations with the tools readily at hand. Nonetheless, serious criticisms might be raised with the use of the first two ways of solving the problem, directed towards the obtaining of data which may be unreliable, invalid, or both. Following the course of action suggested in option 3, the development of a new measurement tool, raises other problems. The description of data measured with the new tool would not be comparable to that obtained in other studies, and the findings could not be compared directly. In fact, the definition of dimensions in social research is usually operational, which reduces the chances of developing a similar operational approach to define the same dimension. A new instrument, operationally at variance from the original, may sample a different variable dimension and cause problems of validity. Adapting a tool for use with a different population group seems to suggest the greatest opportunity to incorporate both reliability and validity into the measurements and allowing, at the same time, some basis for the comparison of findings with past studies.

PROBLEMS IN ADAPTING MEASURING INSTRUMENTS

When a decision has been made to adapt the measuring instrument for use in a new study, several problems invariably need to be solved. The study proper cannot proceed until the adapted tool is prepared and tested. Estimates of reliability and validity from the testing situations assist the researcher in refining the tool, allowing him to establish standards that are either comparable to the original tool, or at least as high as he is willing to accept as a minimum requirement.

The adaptation and refinement of measuring devices usually develop into a pilot study of a segment of the proposed project. Since research depends on the availability of funds from some source, very often an outside agency to the research body, the obtaining of such financial assistance depends, amongst other things, on the established reliability of the measuring devices outlined in the project proposal. Consequently a pilot study may very well have to precede an applica-

tion for assistance with research funding. This may leave the researcher to develop measuring instruments with little or virtually no resources, a realistic problem.

Presuming the investigator can find time and money to carry out a modest pilot study, there is still the difficulty of securing a study population similar in type to the population which he wishes to investigate in the project proper, without intruding on or contaminating that particular population group. This may pose problems when the population is limited in number, scattered over a wide geographical area, or in close communication one with another.

DEVELOPING THE ADAPTED INSTRUMENT FORM

Once a plan is made for carrying out a pilot study with the objective the adaptation of a specific measuring instrument, the next step is to prepare a new form of the instrument. Most researchers go to great lengths to describe the steps they have taken in developing a new instrument. These descriptions guide the adaptor in maintaining a similar approach in devising the new form. There may be a theoretical argument proffered for grasping the latent nature of the dimension in question. This dimension will then be connected to the use of one or more indicators which together are designed to sample differing quantities or degrees of the variable dimension characteristics. The sampling of indicators from the universe representing the manifest characteristics, and the combination of the weightings of indicators to produce an index, can follow the plan outlined by the creator of the original instrument. Some instruments are scales, perhaps composed in parts, which may or may not be balanced in some respect. Items in a scale may be specially grouped or dispersed randomly throughout the instrument; some may be reverse scored. Whatever the design may be, the closer the adaption can be to the original form, the more reliance one can place on the comparability of the study findings derived from the adapted instrument to those cited in studies using the original measuring tools, and the greater the chances of preserving validity. An example of the process used by the writer to produce an adapted form of a measuring instrument is given as illustration.

ADAPTING ROKEACH'S OPINIONATION SCALE

Opinionation is the name of a construct used by Rokeach in describing the way in which an individual holds values. The construct is built on the assumption that individuals with closed belief systems tend to accept those who agree with them and reject those who disagree with them more often than individuals with open belief systems.¹ Rokeach

identifies two subdimensions, opinionated acceptance and opinionated rejection. Opinionated acceptance statements are those "that imply the speaker believes something and, along with this, accepts others who believe it too".² "Opinionated rejection refers to a class of statements made by a speaker which imply that the speaker rejects a particular belief, and at the same time that he rejects people who accept it".³ Opinionation would seem to have particular relevance to the helping professions: medicine, dentistry, nursing, social work, counselling, to name but a few. Does a highly opinionated nurse, for example, relate more closely or less closely to the patient? What is more, whether she relates closely or not, does it make any difference to the quality of care she gives to the patient in encounters dependent on interpersonal relationship? Quality of care might be measured in this instance by interviewing ability, by grades in a clinical nursing course involving interpersonal relationships, such as psychiatric nursing, or the number of disclosures a patient may make to the nurse in discussing his health problems. Is opinionation a dimension which is altered by the educational process, or more specifically, experiences in a nursing program, or is it a fairly stable attribute of the personality? It might be helpful, then, to be able to measure opinionation in nurses.

Although Rokeach has demonstrated the generality of his findings in several different cultures, in children as well as adults, and using observation as well as paper and pencil tests⁴, nurses were not one of the specific population groups sampled when he established his reliability figures. His groups were drawn from university psychology students in the midwestern parts of the United States of America, New York City, and England, and from workers in a British automobile factory. These studies were carried out in the mid-nineteen fifties.⁵

The opinionation scale is composed of 40 items, 20 of which are opinionated acceptance, and 20 of which are opinionated rejection. The items cite issues which were relevant at the time and in the country in which subjects resided. American subjects, for example, considered a large variety of issues dealing with figures such as Roosevelt, Truman, McCarthy, and Alger Hiss; the British subjects had, amongst others, the Labour Government, Dr. Jagan, and freedom in the Colonies. Obviously a Canadian nurse population, and especially one composed of students or recent graduates, would hold few attitudes towards these issues. A shortened version of the scale was prepared at one time which omitted items including issues which perhaps might not be well-known to young Americans, and this scale was administered to student nurses in a baccalaureate program in nursing in the United States.⁶ The scale readings proved inconclusive, corre-

lating with no other measurements studied, and the judgment was made that the shortened form of the scale was an insufficient stimulus to provide reliable measurement. Clearly a new form of the scale would need to be devised suitable for young adults in Canada if a Canadian nurse population is to be measured.

To prepare the scale, issues were chosen for their central relevance to the concerns of young adults in general, such as issues concerning life and death, suffering and war. Rokeach categorized the issues with which he was dealing as right or left opinionation, that is, agreement with the item placed it to the right or left of a mid-point. To determine which items are right and which left Rokeach states "an opinionated statement is right of center if most judges generally see it as being to the right of an oppositely worded statement with which it is compared."⁷ Judges use as their frame of reference for right what they think most people believe. Forty items were either selected from Rokeach's Scale or written anew, then used in such a manner as to attempt to maintain the balance of the scale originally devised by Rokeach. Thus 10 items are right opinionated acceptance, 10 right opinionated rejection, 10 left opinionated acceptance, and 10 left opinionated rejection. These items were then placed in random order. To mask the nature of the opinionation scale, and to dilute possible feelings the subject might experience as a consequence of his exposure to it, twenty-three additional items, with a similar format but constituting a different scale, in this case one measuring humanitarianism, were randomly mixed in with the opinionation items. Rokeach also followed this practice.

The scale is prepared for use, at least initially, with baccalaureate nursing students. Measurement of all students on entering and graduating from a baccalaureate program in nursing is required for a longitudinal study. Since there is no other similar nursing population geographically accessible, the scale was tested on 24 students enrolled in a counselling and guidance class of a baccalaureate program in education.⁸

Following Rokeach's method of assessing reliability, product-moment correlation coefficients were computed for the total opinionation scale, the right opinionation subscale, and the left opinionation subscale. In each scale alternate items gave split-half scale scores, and the resulting coefficients were corrected using the Spearman-Brown Prophecy Formula. Additionally, right opinionation was correlated with left opinionation.⁹ The resultant coefficients are given in Table 1 below, along with the range of Rokeach's reliability figures¹⁰ with which they are compared.¹¹

Although the sample population selected for testing is composed of

education majors in a baccalaureate program, rather than nursing students, the sample selected was made up of students in a class preparing guidance counsellors. Counselling and nursing are both examples of helping professions, and since there is no other baccalaureate nursing program geographically available, it is felt that these two groups are similar enough in the characteristics important to the dimension of opinionation to warrant testing the instrument in this way. The two groups did differ on one important attribute however. Whereas the nursing students to date are all female, 8 of the 24 educa-

TABLE 1
COMPARISON OF RELIABILITY COEFFICIENTS,
ROKEACH'S OPINIONATION SCALES WITH
THE ADAPTED FORM

	Rokeach's Scales			Adapted Form
	American Students	English Students	English Workers	
Total opinionation	.67 to .76	.75	.75	.74
Right opinionation	.67 to .77	.86 to .88	.91	.77
Left opinionation	.39 to .74	.89 to .90	.91	.73
Right opinionation with left opinionation	-.51 to .09	-.65 to -.61	-.62	.55

tion students are male. Testing the two subgroups, males and females, for differences in opinionation using the median test, because of the small numbers, shows a probability of finding differences of .3 under the null hypothesis. Although significant differences were not found with this small sample, as norms are developed with nursing and other control groups, sex differences may still exert some influence in the manifestation of opinionation and this characteristic will be included in the further work planned.

Reliability figures for the total scale and the right and left subscales are comparable to those published by Rokeach. The correlation of right opinionation with left opinionation produced a positive relationship, however, rather than the negative ones recorded in several of Rokeach's analyses, although findings reported by Rokeach on students at one university in the United States produced no correlation at all. Rokeach has noted wide variations and suggests it may reflect national and regional differences in character.¹² He mentions that Inkeles and Levinson suggest "that important differences exist in the organization of attitudes along a left-right dimension", and that this area of personality would be a fruitful one for further study with

respect to different regional population groups.¹³ Certainly the findings from this small group of Canadian students supports Rokeach's suggestion. Further investigation of the left-right aspect of opinionation might disclose more clearly the left and right belief and disbelief configurations held by special population groups in Canada.

Since the reliability figures of the adapted form are consistent in general with those published by Rokeach, the decision is made to accept the new scale for studies on nursing populations in Canada. Norms derived from their use with different types of populations will further serve to distinguish as yet unknown differences in parameters within this heterogeneous group.

Footnotes

¹ Milton Rokeach, *The Open and Closed Mind*, (New York: Basic Books, Inc. 1960), p. 80.

² *Ibid.*, p. 81.

³ *Ibid.*, p. 80.

⁴ Discussed in an informal paper presented by Rokeach at the University of Kentucky, August, 1965.

⁵ Rokeach, *The Open and Closed Mind*, p. 88.

⁶ Ruth C. MacKay, "Effects of Interpersonal Difference, Social Distance, and Social Environment on the Relationship Between Professionals and Their Clientele" (unpublished dissertation, University of Kentucky, 1969), pp. 80, 91-92, 105-106.

⁷ Rokeach, *The Open and Closed Mind*, pp. 81-82.

⁸ The writer is indebted to Miss Mary Balanchuk, M. Ed., educational counsellor, associate professor Queen's University, for her critical review and helpful suggestions in the designing of new items for the adapted scale, and for her involvement in the testing of the instrument.

⁹ Acknowledgement is made to Miss Frances Pishker, B.N., for her help during the analytic phase.

¹⁰ Rokeach, *The Open and Closed Mind*, p. 92.

¹¹ A copy of the adapted scale may be obtained from the writer on request.

¹² *Ibid.*, p. 94

¹³ *Ibid.*, p. 95.