tionships the original data are reviewed, the reliability of interviews must also be objectively tested.

Next Steps in Improving Methods

Each point in the foregoing outline of factors in reliability demands extensive analysis and experiment. The outline is given here merely to indicate a framework within which it should be possible to study the whole problem of the interview as a tool of research. Perhaps the immediate need which is most practical is to make analyses of investigations already reported having a variety of purposes and methods. Out of such an analysis should emerge common elements, if there be any, or reasons for differences. Similarly, if investigators who are now at work on special studies will record in their reports a much fuller account of their methods than usually appears in print, it will serve the same purpose of accumulating actual experience and making investigators conscious of method.

Cooperation between the different branches of scientific work will be fruitful, because comparisons of work done from different points of view and on different phases of human relations will illuminate underlying principles of method and procedure. The psychologist and the anthropologist both have experience which would be very useful to the economist, the sociologist or the engineer. The historian has long experience in handling and verifying documents. The physical sciences have accumulated experience on definitions of problems, the logical procedure in drawing conclusions and the process of discovery. In the application of science to industrial relations we need to select problems upon which representatives of several sciences may work together, thus stimulating each one of the group to more precision in method.

What Standards of Value Is It Fair to Apply to Social Research?

The test of use by other investigators and by those who are concerned in some way with action on the subject is the final sifting process which discloses the validity of a piece of research. Mrs. Sidney Webb, describing the methods of social investigation, quotes George Henry Lewes' definition of truth as "the correspondence between the order of ideas and the order of phenomena, so that the one is the reflection of the other, the movement of thought following the movement of things." If finality be the test, few if any pieces of scientific work can be said to have possessed it. Witness the rapid changes in chemistry and in physics. After all, who knows enough to apply the test of finality? But if correspondence between the movement of thought and the movement of things be the test, it is not unreasonable to expect to achieve it in a relative and changing sense in studies of human relationships. As in all science, the most that can be desired for any single study is that it should be worthy of integration into thinking, so that the investigators who follow may make their own beginnings at a point a little closer to reality.

IF KANT'S famous definition of philosophy may be paraphrased, a critique of method must involve the three questions: What can the method reveal? What needs to be revealed? How may what is revealed be utilized? And the criteria of method are the same criteria of the scientist and the philosopher. In each case the conclusions must run the gamut of the same rigorous tests. Does the conclusion (the method) exclude other conclusions? Is it a consistent conclusion? Does it apply equally to the whole and to the parts? Is objective evidence available? If not, what is the validity of the subjective evidence? Will the conclusion be substantiated by the "consensus of the competent"? Is a consensus of the competent possible? Does the conclusion close the door upon experimentation? In view of these tests and criteria, . . . all methods must be regarded as relative and none as ultimate . . . Until a more adequate method of discovery is devised, it will be the part of wisdom to leave both the method and the content of the social sciences in a state of "experimental solution." (Eduard C. Lindeman, "Social Discovery," p. 31.)

The Manufacturers' Research Association[1]

An Organization of Massachusetts Manufacturing Plants Which Enjoys the Benefits of Joint Investigation of Common Managerial Problems

By R. L. TWEEDY, Director

THE MANUFACTURERS' Research Association —commonly referred to among its members as the M. R. A.—is a group of eleven companies and a large educational institution—twelve factories, if a university may be called a wit polishing factory. No two members manufacture competing products. It was organized just five years ago this fall. The membership comprises a machine tool builder, a paper manufacturer, a publishing house, a chain of cotton mills located both in the North and in the South, a paper specialty house, a tanner of sheep and goat skins, two manufacturers of textile machinery, a rubber manufacturer and a university. The value of the combined products turned out yearly amounts to at least $150,000,000. Of course, this figure does not include the university, whose product I would not presume to evaluate.

The foregoing statement enumerates the physical properties of the M. R. A. It is the sort of statement a banker would demand. Physical statements have a way of leaving out factors which are of the utmost possible importance but extremely difficult to evaluate in terms of dollars and cents. To leave in your minds an impression such as you might get from the foregoing statement of the Association's visible assets would be equivalent to falsifying a tax return. The really significant feature of the M. R. A. is the unusual coterie of men that organized it and has stood solidly behind it ever since it started. The unusual thing about the group is that it includes a number of men who have made outstanding contributions to the science of management. Whatever may be said about the founders, they are not collectors of antique business systems. Nor are they men who willingly walk along crooked thoroughfares which began like the calf-path described so well by Sam Walter Foss. On the contrary, they are men of courage and vision: courage to tackle the things that can't be done and do them. They have a social conscience and realize that for a considerable element in the community business is life. Furthermore, no confusion exists in their minds as to which of these two things is a means and which is an end.

In order to promote intimacy between the members, and familiarity with each other's problems, the membership is limited by the constitution to twelve. To make it practical for persons connected with these companies to take part frequently in Association activities, the policy has been to restrict the membership to companies located in Eastern Massachusetts and Rhode Island.

Purpose

The Association was organized for the purpose of pooling business information and experience in all the factories, in the belief that the formation of such a pool would make it possible to render mutual assistance in solving problems common to two or more members. Besides enabling one member to profit by another's accomplishment, the aim is to effect savings through the avoidance of duplicating costly experiments and investigations which have become matters of record. Other objects of association are: to promote greater excellence in the science of management and to permit progress in this science to become more rapid and widespread and at the same time less costly.

Will Durant says: "Every science begins as philosophy and ends as art; it arises in hypothesis and flows into achievement. Philosophy is a hypothetical interpretation of the unknown, or of the inexactly known; it is the front trench in the siege of truth. Science is the captured territory; and behind it are those secure regions in which knowledge and art build our imperfect and marvelous world."

[1]Paper presented before the Taylor Society, New York, December 10, 1926.