Comments and Communications

Research Note on Randomization in a Social Experiment

When the sociologist attempts to apply an experimental design to measure the effects of some social program of treatment, such as a public housing program in the free community situation, two obstacles to generalization of results are encountered: (1) the selection of slum families for an experimental group to receive treatment and a control group denied this treatment (admission to the public housing project) cannot ordinarily be randomized, because administrative rules always require that families to be admitted to the project must be the *most needy*; and (2) during the experimental period of 1–5 years, there are losses of cases due to death, mobility, etc., which would destroy any randomization at the outset. In one study of this problem these losses of cases due to death, illness, mobility, refusals, etc., amounted to 12% of the experimental group of slum families admitted to the housing project, and to 42.7% of the families in a matched control group remaining in the slum for the 1-year run of the study. The following design of experimental study would obviate both these difficulties.

The operations would be: (1) take a housing project of limited accommodations, say, 500 dwelling units; (2) build up a pool of 1,000–1,500 eligible and processed families who could be admitted; (3) explain to applicants for admission to the housing project that the limited accommodations require that applicant families draw lots for admission (randomization); (4) then the families that drew lucky numbers will be admitted; and (5) the families that drew unlucky numbers will have to wait their turn as further construction opens up new projects. These rejected families become the control group remaining in slum conditions. In this manner favoritism and bias in admission would be avoided and yet randomization would be obtained. Both groups would be measured for adjustment at the beginning of the experiment, followed through an experimental period of 1–5 years, and then measured for adjustment at the terminal date.

The second dilemma is loss of cases from death, illness, mobility, refusals, etc., during the run of the experiment, thus destroying the initial randomization. The resolution of this dilemma is to randomize the experimental group of residents, and likewise the control group, into 50 small samples of 10 families each. Some of these samples will lose cases during the run of the experiment, but in all probability some of the small samples will not lose cases and hence will remain randomized groups throughout the period. These residual small groups of families may then be the subjects for analysis of variance and covariance to test the results of the experiment. Since experience shows that losses from death, illness, mobility, and refusals are more frequent in the control group than in the experimental group, the control group should be larger than the group of resident families, to allow for shrinkage. Harold Hotelling, in correspondence with the author, points out that it is essential, when randomization into subgroups is carried out, that a careful scheme of analysis of variance should be laid down in advance and in full detail.

The foregoing design should provide a basis for generalization so often lacking in control group studies in the free and uncontrolled community situation. It has the merits of avoiding matching to obtain homogeneity (which experience shows may occasion losses of 27% of the initial cases), and also of avoiding the usual penalty on randomization caused by losses of cases from natural reasons during the run of an experiment.

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Social Responsibility in Science

When Albert Einstein joined the Society for Social Responsibility in Science during the past summer, he made a public statement for the society to use as it pleased. The SSRS feels that Dr. Einstein's statement deserves the thoughtful attention of as wide as possible a group of his colleagues. His statement follows.

William F. Hewitt, Jr.

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Dear Fellow-Scientists:

The problem of how man should act, if his government prescribes actions or society expects an attitude which his own conscience considers wrong, is indeed an old one. It is easy to say that the individual cannot be held responsible for acts carried out under irresistible compulsion, because the individual is fully dependent upon the society in which he is living and therefore must accept its rules. But the very formulation of this idea makes it obvious to what extent such a concept contradicts our sense of justice.

External compulsion can, to a certain extent, reduce but never cancel the responsibility of the individual. In the Nuremberg trials this idea was considered to be self-evident. Whatever is morally important in our institutions, laws, and mores can be traced back to interpretation of the sense of justice of countless individuals. Institutions are in a moral sense impotent unless they are supported by the sense of responsibility of living individuals. An effort to arouse and strengthen this sense of responsibility of the individual is an important service to mankind.

In our times scientists and engineers carry particular