DISCUSSION

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Dr. Groves is to be congratulated for a carefully designed and executed study. There are a number of interesting points made in the paper, and questions suggested, and I will comment on a few.

First, the paper again confirms the possibility of serious biases in coverage of the population through a telephone frame. Roughly 1 in 10 households overall are estimated to not have a telephone in the household. The rate estimated from the study is about 1 in 20 for white households and 1 in 6 for nonwhite households, 1 in 6 for households outside SMSA's, and 1 in 6 for those with 1974 income under $7,500. As Dr. Grove points out, for many surveys both the overall coverage and, especially, the differential coverage of subgroups in the population would not be acceptable.

These coverage rates may be viewed as measuring essentially coverage of households. However, coverage of persons within household is at least as important and, in the Census Bureau's experience, more troublesome. Research is needed to assess the extent to which the household is properly defined and acceptable coverage of all persons within households is achieved.

The response rate analysis, as has been noted in other studies, is troublesome -- primarily because of problems in measuring the denominator of the rate. I also would question the average number of calls per household as a measure of effort, since this can be an artifact of the strategy adopted. In some testing of computer-assisted telephone interviewing by the Census Bureau we have had higher telephone response rates than found in the study. This may be due to the auspices. Thus, the paper suggests familiarity with the research organization as an explanation of the lower State-wide rate in Michigan compared to that in the area closest to the telephone interviewing staff. However, it may be that with more experience higher response rates could be achieved. The Census Bureau has not used telephone as the mode for the interviewing of a household for the first time, but we have used it as a supplement to reduce noninterview rates for respondents hard to find at home. Also, in panel studies we make use of telephone interviewing on second and later occasions. We have not found in this context that older people are more easily accessed by telephone as reported by Dr. Groves.

I found the use of the "unfolding measure" in telephoning as a substitute for a flash card in personal interviewing interesting, as are the findings of interviewer influence through the pace of the interview. With regard to the analysis of respondent preferences as to mode, some caution as to the findings may be advisable. The Census Bureau, as I noted, uses telephone interviewing in panel studies on second and later occasions if the respondent when asked is willing to accept it. Interestingly, when we set targets for reducing interviewer mileage in the fuel crises of 1974, the proportion of households in eligible panels that were interviewed by telephone rose substantially. With regard to the question of whether the quality of data obtained by telephone is lower or higher than with personal interviewing, our experience may be summarized as a Scotch verdict. The Census Bureau is planning to carry out extensive controlled studies of this question.

The analysis of sampling and interviewer design effects is interesting, although difficult to follow since the estimators of the various quantities are not given. It appears that in the analysis in Table 5, inadequate account was taken of sample size variation. The large difference in design effects between stratified and clustered telephone interviewing is interesting, but perhaps not surprising. From the point of view of planning a multi-purpose survey, using some quantile of the distribution of design effects over items may be a useful alternative to the average design effect. Any given quantile of the distribution indicates the items and proportion of items which would be subject to design effects no larger than the quantile-value, and hence the proportion subject to greater effects. Viewed this way, there is much less difference -- for example, at the 80-percent point -- between the personal and clustered telephone design effects.

The cost analysis is to be commended, although individual cost factors may differ substantially among organizations.

It is easy to agree with Dr. Groves' conclusions as to the research needs, and to urge his model of controlled experiment. Telephone interviewing is here, and in combination with computers is a much more flexible and potentially useful tool than ever. Now the need is to establish a sound scientific base of knowledge for its use .