

Comment

*Barbara A. Bailar*¹

The article by Don Dillman was provocative. It caused me to reminisce about my days at the U.S. Census Bureau, to remember the frustrations, but also the joys. To me the Census Bureau provided marvelous opportunities to do important research over a wide variety of surveys and censuses. Yes, there were often times that research ideas were not funded or the results from research studies were not implemented, but I believe the incidence was no greater than in any other type of institution.

Dillman raised many points with which I agree, but as I read his article from the perspective of one who worked close to 30 years at the Census Bureau, I wondered whether we had worked in the same organization. It is possible that the Census Bureau may have changed dramatically in the eight years since I left it, so Dillman's perceptions may be correct. Yet, he seems to have little appreciation of the history of the Census Bureau, the work that was accomplished there, and the way the bureau led the world in innovation and improvement in the survey process.

First, let me state the areas in which I am most in agreement with Dillman. He is absolutely right that there is a tension between the operations and research cultures at the bureau, as I expect exists in most large institutions. However, the tension is not always bad. Research needs to be geared to the world the operations people live in, so research projects need to be informed by the experiences of the operations staff. This does not mean poor decisions are not sometimes made with the operations people, who control the purse strings, opting not to use money on research.

Another area of agreement is on the need for more in-service training of people at all levels of the organization, including Division Chiefs and Associate Directors. We are living in a time of change, with new methodology and new technology. Rather than draw a line to delineate the roles of statisticians and other social scientists, I would urge both groups to learn more about the world of the other. Cross-disciplinary work usually benefits the organization and the people working in it.

Now let me turn to some areas of disagreement. One major area is with Dillman's perception of statistics as a profession and the role of the statistician. My bias may be showing because I am a statistician. Yet, in my years at the bureau, it was the statisticians who brought in other types of research. It was Morris Hansen who created the Research Center for Measurement Methods, which funded research by ethnographers,

¹ National Opinion Research Center at the University of Chicago, 1155 E. 60th St., Chicago, Illinois 60637, U.S.A. Tel: (312) 753-7500. Fax: (312) 753-7886.

economists, sociologists, and psychologists as well as statisticians. It was also the statisticians who created the Center for Survey Methods Research, a group headed by Betsy Martin, which has a staff of social scientists, who do innovative work on censuses and surveys.

From the very earliest days at the Census Bureau, statisticians have encouraged, funded, and provided a framework for the study of measurement and nonresponse errors. Rather than see a rigid dichotomy of the world between statisticians and social scientists, the statisticians worked to set up an atmosphere of collegial cross-disciplinary methodological research. In the 1940s, the remarkable team of innovators assembled by Morris Hansen and Bill Hurwitz, including Ben Tepping, Max Bershada, Joe Waksberg, Joe Steinberg, Eli Marks, and Hal Nisselson, turned from their great triumph of having probability sampling accepted by the bureau and many other agencies to a focus of improving censuses and surveys more generally. The 1950 census was used as a testing ground to measure the effects of interviewers on survey data. Hansen, Hurwitz, and Bershada developed a model that recognized interviewer, respondent, coder, and supervisor effects, and then established experiments to estimate the parameters of the model. Such work was ground-breaking, led to a new appreciation of the effects of survey personnel, and was the primary reason for the introduction of self-enumeration in subsequent censuses. Led by the results from the research, the operations group changed the entire method of census taking.

Hansen's group also recognized that they needed collaboration from people outside the Census Bureau. They set up what were known as Joint Statistical Agreements, whereby researchers at the bureau and at universities could collaborate on problems of mutual interest. Many interdisciplinary studies were funded in this way, as well as more statistically focused projects. I have learned that these agreements can no longer be used and see this as a serious loss. These agreements funded researchers all over the country and provided high-caliber research at relatively low cost.

Another way that university people were brought into the Census Bureau to contribute to the solution of survey and census problems was through the ASA/NSF Fellowship program. Many researchers, including many social scientists, worked on measurement error problems on-site at the Census Bureau, funded by this program.

Thus I find Dillman's argument that statisticians are primarily interested in sampling error not to have been the case at the Census Bureau. The statisticians brought in social scientists, worked with them in a collaborative way, and set a very useful and productive framework for pushing forward the measurement and nonresponse frontiers of survey research.

The research innovations that have come from the Census Bureau have been many and varied. Let me just run through a few of them. One is on the coverage of the population in censuses and surveys. The Census Bureau very openly began publishing its estimates of the decennial census undercount in the 1950s. Census researchers, both demographers and statisticians, showed substantial undercoverage of minority populations in the census, while also showing that the coverage in a census was superior to that of surveys. With the need to understand coverage mechanisms better, the statistical group funded studies at universities and began the first ethnographic

studies to shed more light on the reasons for undercoverage. This kind of research continued during the years I was at the bureau, culminating in an impressive demonstration during the 1990 census. Well over 25 ethnographic studies in different types of neighborhoods and different ethnicity groups defined many of the root causes of undercoverage.

Similarly, the bureau has made huge strides in improving current surveys. One area in which I spent a considerable amount of time was on rotation group or time-in-sample bias. In continuing surveys, the length of time a respondent is in the sample seems to affect the responses. The bureau funded numerous studies over the years, looking at the effect of varying nonresponse error in the months in sample on the estimates, on the role of interviewers, proxy respondents, the effect of additional questions in certain months, and the role of the use of personal interviewing in certain months with telephone interviewing in the remaining months. Because the bias is probably due to no single factor by itself, no one underlying cause was identified. Yet, by looking at how the results of the bias were exacerbated by the statistical estimator of the number of employed and unemployed, in the next redesign of the Current Population Survey, an estimator was adopted to dampen the effect of bias. Again, statisticians and social scientists worked together.

Another interesting problem in surveys comes about when the questionnaire asks for data not only for a recent time period but for earlier time periods. John Neter and Joe Waksberg examined this phenomenon in the 1960s in connection with a survey focused on alterations and repairs of housing units. In that landmark study, they coined the term “telescoping” to describe the displacement of data in the interview from one time period to the next. This same phenomenon shows up in many surveys, primarily in bringing estimates forward from more distant months to those closer in time. Thus, we see criminal victimizations, money spent for different kinds of services, and the like, moved forward in time. Closely related to this is the “seam” problem, which shows that if a questionnaire asks about data over a number of months, the month closest to the reporting time shows the most activity, but when the next interviewing report is obtained, there is a very uneven distribution of reports, bunching at the “seam” of the two reports. Census Bureau researchers have been actively working on that problem.

The bureau has also played leading roles in question wording and question placement. Though survey researchers were well aware that placing certain questions early in an interview could have a strong effect on the responses to later questions, Census Bureau researchers showed that answers to questions late in the interview could cause changes to questions asked early in the interview. Questions asked of discouraged workers at the end of a labor force interview often made interviewers change responses to the early labor force questions, even when they were asked not to.

Rather than a litany of bureau innovations adopted worldwide, let me end with some possible explanations for the difference in perceptions between Dillman and me. For one, the pendulum may have swung. At one time, researchers and operations people worked well together in implementing research findings. The research part of the bureau has been shrinking with many research areas being swallowed by operations groups. Most of the people who were lucky, as I was, to work with Hansen,

Hurwitz, and their team, have left the bureau. Many of those who were also working in that tradition and had grown up with the tradition of cross-disciplinary research have also left the bureau. Within the Federal agencies, the bureau is no longer seen as a leader in research and innovation. So it may be that the research area is very weak. For innovation to be accepted quickly, strong champions are needed. These champions need to be permanent employees who are going to see through the necessary changes. With all the change and turmoil at the bureau, these champions may not be there. Let us hope the pendulum is beginning to swing back to its former position.

Received November 1995