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Ms. Cathryn S. Dippo  
Senior Mathematical Statistician  
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Bureau of Labor Statistics  
U.S. Department of Labor  
441 G Street, N.W.  
Washington, D.C. 20212

Dear Ms. Dippo:

Enclosed are two copies of a summary report containing my recommendations for redesigning the CES and the CPS.

I enjoyed meeting you and your colleagues at the conference which I thought was most worthwhile.

I look forward to hearing from you on your plans for the CES and the CPS. If you have any questions, feel free to call me at 513-475-5028.

Sincerely,

A handwritten signature in black ink that reads "George Bishop".

George Bishop

GB/klb

Enclosures

RECOMMENDATIONS ON REDESIGNING THE  
CONSUMER EXPENDITURE SURVEYS  
AND THE  
CURRENT POPULATION SURVEY

by

George F. Bishop

Behavioral Sciences Laboratory

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RECOMMENDATIONS ON REDESIGNING THE  
CONSUMER EXPENDITURE SURVEYS  
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CURRENT POPULATION SURVEY

I think much of the systematic response error in these surveys stems from four sources:

1. the use of proxy respondents to report for other members of the household,
2. the ambiguity of various questions in both the CES and CPS,
3. the difficulty of recalling the information that is required by many of the questions, particularly those in the Consumer Expenditure Survey, and
4. the problem of getting respondents sufficiently motivated to report fully and accurately the information that is needed.

Proxy Reporting

Based on the discussions we had at the conference and my experience as an interviewee, I think the use of proxy reports on the behavior of other members of the household is probably the major source of inaccuracy, particularly in the Consumer Expenditure Survey (CES). A number of the household purchases I had to report on, for example, in my CES interview would have been noticeably

more accurate had my wife participated in the interview with me. I believe this observation would hold true for the great majority of households with more than one person over the age of 12. For this reason, I would recommend a field experiment in which households for the CES are assigned to one of two conditions:

1. A standard CES interview with a responsible adult informant reporting for the entire household, and
2. A CES interview with all household informants, age 12 or older-- preferably with all members of the CU present simultaneously, as this would provide an immediate check for validity on each other's reports.

This is a relatively straightforward experiment that could tell us rather quickly whether significant improvements in reporting on the CES can be achieved by greatly reducing, or eliminating altogether, the use of proxy reports. The Bureau would then have to judge whether this change would be worth the cost--assuming there were significant improvements in reporting (as I think there would be).

The experiment should be done in at least two locations with probably no less than 1000 households at each site (500 in each experimental condition). This should be sufficient to tell us whether we can expect significant improvements on the problems of underreporting (e.g., on apparel and household furnishings), and in accuracy of reporting more generally. This is a very feasible experiment, and I highly recommend that it be done. Compared to some

other research that might be done, the cost-benefits of such an experiment, I think, would be rather high.

### Ambiguous Questions

The discussions we had at the conference suggest that a number of questions in both the CES and the CPS may be misunderstood by respondents. In fact, we really don't know much, if anything, about how the questions in these surveys are interpreted. Here I would recommend, as others have, that the BLS sponsor a series of laboratory and field experiments on how respondents interpret the standard CES and CPS questions. At the Behavioral Sciences Laboratory (BSL) in Cincinnati we have experimented with the use of "think-aloud" (or "talk-aloud"), personal interviews to discover how respondents interpret survey questions and how they arrive at their answers. I think this intensive technique would be quite useful in revealing how respondents answer the CES and CPS interviews. Such research has, of course, already been recommended for the CPS by the BLS-Census Bureau Questionnaire Design Task Force. The same thing should be done with the CES.

Because the CES interview is rather lengthy, I would recommend breaking it up into perhaps a half a dozen or so smaller interviews of no more than an hour in length (each of which must be taped and transcribed). My experience with doing such interviews here at the BSL is that they can be quite demanding of respondents, and so an hour is about the upper limit on their patience and concentration. For content analysis of these think-aloud protocols, I would recommend at least 200--preferably 300 or 400--cases for each one of the mini-CES interviews. You need this many cases to discover most of the variation in

how respondents interpret the questions. The analysis of such protocols should suggest various ways in which existing CES and CPS questions can be revised and elaborated to produce more accurate reports. So I think it is well worth the investment to pursue this research.

### Recall Problems

The analysis of the think-aloud protocols should also yield some useful insights into how respondents retrieve information from memory to answer the CES and CPS interviews. Several panelists at the conference have, moreover, proposed some ways of improving recall on difficult questions (e.g., the use of birthdays, holidays, etc. as bounding events). Though I think such research may be worth doing, I am not optimistic that it will lead to significant improvements in reporting on the CES because of the length of the recall period: three months. For the items that are subject to the greatest under-reporting (e.g., apparel and house furnishings) a three month recall period is just too long and difficult for most respondents to handle. Adding new questions or statements to aid their recall of this material (i.e., eliciting landmark events) will only add to an already lengthy and burdensome interview for perhaps only modest improvements in recall. I could very well be wrong, but I think that significantly greater improvements in reporting in the CES (and the CPS) can be achieved by reducing or eliminating proxy reports than by focusing on ways to improve recall for a three month time period (or for even a one-month period).

Furthermore, as I indicated at the conference, the BLS should seriously consider eliminating the quarterly CES interviews and reallocating those

resources to the diary survey, as there is evidence that the reports in the latter are generally more accurate than those obtained in the quarterly panel interviews. I fully realize that there are also problems with the quality of the diary reports, but they seem to me to be far more tractable than those associated with the recall problems in the quarterly panel interviews.

### Respondent Motivation

Here I think the use of techniques developed by Cannell and his associates at Michigan--explicit instructions to the respondent on how to report, commitment to being a good respondent, feedback and reinforcement procedures, etc.--would be quite helpful in improving respondents' reports in both the diary and panel interviews of the CES, as well in the CPS interviews. Controlled experiments with these procedures are well worth doing. And I leave it to Cannell and his colleagues to propose that work.

I also think serious consideration should be given to experimenting with financial incentives for respondents to complete the diary survey, for example, as accurately as possible. It is a burdensome task for many respondents, and so financial compensation might well motivate them to take it more seriously than they now do. Specifically, I would suggest controlled experiments with and without financial compensation for completing the diary (e.g., for \$5, \$10, or \$25) to determine whether it results in significant improvements in reporting. This may not be as theoretically or methodologically exciting as some other ways of improving reporting, but it may work much better than anything else that we might try. So I think it is worth experimenting with, at least on a small scale with perhaps 300-400 respondents.

As in the use of the quarterly panel interviews, I would recommend a field experiment in which CES households are assigned to one of two conditions:

1. A standard diary interview with a responsible adult informant keeping track of all the purchases for the CU, and
2. An interview in which every member of the CU, age 12 or over, keeps a diary for a two week period.

Recent studies by Teen-Age Research Unlimited, Inc., a Lake Forest, Illinois firm that monitors teen consumer behavior found that teenagers between 12 and 19 years old were directly responsible for roughly \$40 billion of their families' purchases in 1986 (data cited in a Cincinnati Enquirer story by Patricia Gallagher, February 15, 1987, D-1). I suspect that many of these expenditures are not accurately reported in the CES and may account for a significant part of the underreporting on such items as clothing and food at home, as teenagers make many such purchases according to the recent surveys by the Lake Forest firm. So having everyone age 12 or over keep a diary would very likely increase the accuracy of CES reports, though it would certainly increase the cost of data collection significantly. So I recommend a field experiment to determine the cost-benefits of such a change in the standard diary survey.

I think it would also be useful to experiment with reminder telephone calls to diary respondents in the early evening hours (7-9 P.M.) each day or every other day. The interviewer would call to find out if the respondent has any questions about completing the diary. This should help maintain a respondent's motivation to take the task seriously. Perhaps a phone call reminder



the first day or two of each week would be sufficient to accomplish this purpose. This type of experiment can easily be done and should probably be part of a larger factorial experiment on the effects of having all members of the CU, age 12 or over, keep a diary.

Most of my recommendations have focused on the CES because it appears to be subject to significantly greater response error than the CPS. The report of the BLS-Census Bureau Questionnaire Design Task Force also seems to have addressed rather well the cognitive and conceptual problems in the CPS questionnaire (a similar task force should do the same for the CES). In addition, I would recommend--as with the CES--a controlled field experiment on the effects of using proxy reports. Interviews with everyone age 16 or over in the household should be compared with standard CPS interviews to assess potential improvements in reporting from this straightforward, though costly, change in the present mode of data collection.

I think many of the problems of accuracy in the CPS could be addressed by having respondents keep a diary of their work hours each day, reasons for not working, specific job search activities, etc. This may seem like another burdensome task, but I think it would be much easier to do than the CES diary. A small-scale experiment with 500-600 respondents (half of whom are currently unemployed) would tell us whether we might expect to find significant improvements in reporting in the CPS. It is perhaps not as glamorous as some other research we might do, but it is quite practical and could produce some rather large payoffs in the measurement of the labor force in the near future. Whereas other things we might do may take quite a few years to produce a payoff, if any at all.