

## DISCUSSION

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The papers in this session were all very good. It was an exceptionally cohesive set of papers for a contributed papers session. All the papers pertained to coverage of censuses or surveys. Four of the five were on work by Statistics Canada or the U S Census Bureau to improve or to evaluate coverage. The order of discussion of the papers is somewhat arbitrary, but I will discuss the decennial census papers first.

The Statistics Canada paper presented by Craig Brown presented the methodology of the 1996 Dwelling Coverage Study. The study is clearly sound and well-designed. It is much easier to discuss papers with major deficiencies. Since this paper has none that are apparent to me, I have been unable to think of much to say. The paper presentation was clear and complete, and the study that was described is very good.

The second Statistics Canada paper was presented by Michael Mayda and discussed the 1996 Automated Match Study. It gave the results of a pilot study, the design of the 1996 study, and a little on future plans. The study is very well designed. The future plans are sound and seem to me to be exactly right. As with the other Statistics Canada paper, there are no obvious shortcomings in the paper for me to discuss at length.

I next discuss the paper on the U S Census, presented by Elaine Zanutto. Rather than dealing with census evaluation like the Statistics Canada papers, this paper deals with imputing for households not included in the Census. In particular, it is concerned with households that will not be included in the nonresponse follow-up. Simulations were done to compare different imputation methods. The paper deals with an extremely important issue, since this will be the first time that the Census will have a sizable percentage of noninterviewed households for which imputation will be necessary. The paper clearly indicates considerable promise for the use of administrative records in the imputation process. I was somewhat surprised (though I think the authors weren't) that direct use of administrative records appears to be far inferior to their use in models. I look forward to the continuation of imputation research along the lines discussed in this paper.

I will next discuss the only paper which is not from Statistics Canada or the Census Bureau. The paper by Montaquila, Waksberg, Mohadjer, and Khare shows coverage rates by age/race/ethnicity/sex for a survey, the third National Health and Nutrition Examination Survey, and compares the rates to those

from other surveys. In one sense, this is a routine and maybe even boring paper. The computation and discussion of coverage rates is not unlike that of nonresponse rates. Nonresponse rates are routinely computed and evaluated for virtually all government surveys. Suppose an ASA paper was written showing the nonresponse rate results for every survey. We'd have sessions full of such papers and we would get quickly bored. This *could* happen for coverage rates as well. However, at present hardly anyone routinely computes coverage rates. In fact, to my knowledge there has never before been a paper evaluating coverage for a particular survey. I urge survey sponsors to use this paper as a model. Insist that your contractors (or the Census Bureau or whoever conducts a survey for you) do this type of coverage evaluation. Will this paper be the first of many on coverage evaluation? Perhaps some day we will get so many such papers that they *will* become boring and this type of discussion will get relegated to the back of technical reports. But as of today, I find this paper to be exciting.

The most interesting specific finding of this paper is the high coverage for Blacks. One possible explanation is the monetary incentive respondents were offered for participating in the survey and obtaining the physical examination, but the authors don't believe this could have had a large effect on coverage. Although I do not doubt that the training and experience of the interviewers in this survey were excellent, it is hard to believe that this would account for Black coverage being as good or better than white coverage. Thus, there is no apparent explanation for this finding. Although perplexing, the result is not entirely unprecedented. In the 1997 National Medical Care Expenditure Survey, NORC obtained coverage rates for both Whites and non-Whites that were over 1.0 for most age-sex groups (Cox and Cohen, 1985). RTI, which also conducted part of the survey, had normal coverage rates of under 1.0 for most non-White age-sex groups.

Finally, I discuss the paper dealing with household attachment by Betsy Martin. This paper contains a lot of interesting data and ideas. The paper's key conclusion is that there are attractive alternatives to the usual residence rule for determining who should be included in a particular household. Betsy Martin suggests that two items or three items might be used in combination for determining whether a person is a household resident.

I address the issue of how often the three item measure disagrees with the single item of usual

residence. Table A below, a summary version of Table 4 in the paper, helps in addressing this issue. The first row of Table A contains cases in which all three measures are in agreement - the first and last lines of Table 4. The second row contains those cases where the first measure, usual residence, is "no", and the level of attachment is 1. The third row contains those cases where the first measure is "yes", and the level of attachment is 2 according to the author's scale, i.e., one of the other measures is "yes" and one is "no". The second and third rows represent cases where one other measure agrees with measure 1 and one other measure disagrees. The fourth row contains those cases where the first measure is "no" and both the other measures are "yes". Finally, the fifth row contains those cases where the first measure is "yes" and both other measures are "no". Betsy Martin suggests that a level of attachment of 3 would be a household resident, a level of attachment of 0 or 1 would not be a household resident, and a level of attachment of 2 is problematical. In the first row, representing the vast majority of cases, it makes no difference whether the three item measure or simply usual residence, measure 1, is used. In the second row, both the three item measure and measure 1 agree that the person should not be counted as a household resident. In the third row, representing only 0.7% of all persons, usual residence suggests residence in the household whereas the three item measure is inconclusive. In the fourth row, usual residence suggests non-residence in the household whereas the three item measure is again inconclusive. Finally, the last row is where the three item measure

and usual residence flatly disagree. My point is simply that the three item measure is rarely needed to determine residency. Only in the last three rows, 2.3% of all cases, does it matter, and only in 0.3% of all cases do usual residence and the three item measure flatly disagree.

A second conclusion in this paper is that reports of usual residence by a household respondent may not be reliable for persons with tenuous household attachments. This conclusion is based on Table 6, which shows that people with weak attachments to the household (levels 0 or 1) are not infrequently reported as usual residents in individual interviews. These individual interviews were usually conducted with the person themselves, but on occasion were conducted with another person. A concern I have is whether most of the reports of being usual residents come from proxy responses. In these cases, people reporting for themselves might have reported themselves as being usual residents elsewhere. My concern about proxy responses stems from an additional table and discussion that Betsy Martin had in a longer draft version of her paper. This concern leads me to wonder whether reports of usual residence by a household respondent may not, in fact, be reliable, even for persons with tenuous household attachments.

#### REFERENCES

Cox, Brenda and Steven Cohen (1985), **Methodological Issues for Health Care Issues**, New York: M. Dekker.

Table A. Observed resources for three measures

All Measures Agree	3,353	95.4%
Measure 1 No, Attachment Level 1	80	2.3%
Measure 1 Yes, Attachment Level 2	26	0.7%
Measure 1 No, Other Measures Yes	46	1.3%
Measure 1 Yes, Other Measures No	9	0.3%
Total	3,514	100%