Discussion

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It is well-established at Suitland, near Washington, and at Tunney's Pasture, near Ottawa, that the Census Bureau and the Dominion Bureau of Statistics share experiences, fears, successes, frustrations, and the very considerable amount of critical evaluation of the work which is carried on at both locations. Our Canadian colleagues tend to see in our decennial census a pretest for theirs. We took a census in April 1960; they took theirs in June 1961. On the other hand, recognizing the lead time that is a necessary part of all such activities, we find that the census of 1966 provides some useful lessons for our census of 1970. Actually, the sharing is a continuous one and it is a 2-way street which is heavily traveled. Their observers at our pretests have given us some very incisive and useful observations and criticisms. When we saw their questionnaires for the London Pretest, we gave our printer a hard time, telling him that if the Canadians could print a relatively uncluttered questionnaire, we could do so also. I mention this only to emphasize that the sharing of experience goes far beyond an occasional scanning of the formal papers or an occasional conference. From the standpoint of the Bureau of the Census, these papers are welcome, for they give us in systematic fashion an account of work in progress and some leads for further joint exploration.

In view of our close association, I was startled to learn from the paper by Fellegi and Krotki that the Canadian data are based on the "longest series of modern censuses stretching back just over 300 years." I hasten to set the record straight. Even though we don't want to claim the "longest continuous census"--(our critics tell us it is much too long), we like to point out that ours is the longest series of periodic nationwide censuses. In addition, some 38 censuses of individual colonies had been taken prior to the first national census in 1790, chiefly at the instigation of the British Board of Trade. The first of these was taken in Virginia in 1635.

From the papers presented here this morning, it is easy to see that we share many common approaches to our problems. We are agreed on the need of pretests, on the need for evaluation of the census as it is taken, on the need for quality control in all phases of the work, and on methods of achieving such control. Our experiences, too, have been quite similar. Thus, in the case of the re-enumeration in connection with the Census of Agriculture, as reported by Krotki, Muirhead and Platek, the total underenumeration of farms seems relatively large, but the undercount of the important commercial production is far less. In other words, much of the underenumeration occurs at the margins where the determination that a unit belongs in the universe becomes difficult to make. The units which are clearly to be included in the universe have a much lower likelihood of being missed. We are agreed also on the need to investigate coverage and content errors and on the relative importance of sampling and response errors and of methods for dealing with the reduction of response variance.

That same paper offers an interesting demonstration of why experts are often charged with making any apparently simple problem complex. Matching two sets of records seems like a simple operation, especially when both records were secured by the same organization within a short time span. But this simplicity is apparent only to the uninitiated. Matching two records to determine whether they relate to the same individual turns out to be a very difficult operation, requiring careful specification of when a match has actually occurred, what differences in spelling or characteristics to accept as not violating the match, what degree of field reconciliation is feasible and what to do with the apparent failures to match. The whole field of research in census methods offers another case in point, for no one with experience in the field would agree with the comment of an uncritical observer who said with some surprise, "I would have thought that census-taking is least in need of research. " It seemed to him that nothing could be simpler than counting such discrete units as people. At least there can be little question whether a unit once located belongs in the national inventory, even though it may be debatable that his attachment to a given locality is such that he should be enumerated there.

Although the conditions under which a census count is made differ somewhat in the two countries, there is a remarkable similarity in the degree of the undercount, and in its incidence by age and sex. Response rates to the mail questionnaire in London at 85 percent were only slightly higher than the experience of the Census Bureau in its pretests. The experience in London was like that in the States, that the great majority of the returns were in the office within a few days of the census date.

On one point our experience would provide a clear answer to a question posed in the paper by Fellegi and Krotki. They appear to question whether the computer delivers as good a job of editing as clerks. That there is a tendency at the outset to ask the computer to do much more editing than was expected of editing clerks is a common experience. That some clerks will challenge the reasoning behind an instruction, whereas the computer is not likely to do so is also common experience. But granting this, it is clear that the computer can edit more consistently and take into account a more complex set of factors than is the case with clerks. It can also be depended upon to reject for manual intervention more consistently than was the case with clerks.

The paper by Fellegi and Weldon outlines an ambitious program of geo-coding which we will be watching with a great deal of interest. They are motivated by the same conditions which lead the Census Bureau to make efforts along this line; i.e., the need for quick and inexpensive tabulation for areas required to meet special needs. The users of census data are no longer content with having to take standard small area units as building blocks and laboriously allocating segments and adding the on persons who submitted change of address cards to the post office. We are also in essential agreement in regard to the significance of response variance in relation to sampling variance as applied to the social and economic characteristics which have been mentioned. It is not clear from the scheme presented that adequate provision has been made for special tabulations involving a number of characteristics; for example, the number of preschool age children living with both parents in families with an income below a specified level. It is likely that the provision for rapid retrieval of single characteristics will not prove adequate to the needs of users of census data.

These papers are a welcome addition to the exchange of experience and the joint study of census problems which has been going on for many years, and, hopefully, will continue for many more.

bits and pieces to arrive at the distributions and totals which are needed. The use of computers has considerably enhanced the ability to meet these needs and here is one more instance of both agencies working along closely similar lines in order to provide the same basic services.

Our experience has been quite similar to that of our Canadian colleagues in respect to the proportion of free form addresses which can be coded by the computers, in the ability to find persons whose names come from lists of a previous census, birth records or immigration records, in the reliability of the post office check, and in some of the results of a followup