

PRESIDENT'S CORNER

Sampling is Not Enumerating...

In the February 1998 issue of *Amstat News*, we reprinted William Safire's column entitled **Sampling is not Enumerating**, which appeared in *The New York Times* on December 7, 1997. David Moore responded to Safire's comments in his February column, **President's Corner**.

Mr. Safire raises political and constitutional objections to the use of statistically designed sampling in Census 2000. The ASA has no position on political and constitutional issues, which will be settled by Congress and the courts. But Safire also states explicitly that "Sampling is no science; ask President Dewey and Prime Minister Peres." He even suggests that plans for Census 2000 are the result of political influence. Others, including some Members of Congress, have voiced similar opinions. They constitute an attack on important aspects of the statistical profession and ought to concern all statisticians.

The ASA's Census 2000 Blue Ribbon Panel, created by 1996 ASA President Lynne Billard to address concerns about the statistical methods proposed for use in the census, began its report succinctly: Critics have questioned the Bureau's intent to make greater use of sampling. Their criticism may be based upon a misunderstanding of the scientific basis of the Census Bureau's sampling plans." This is certainly true of Safire's broadside, which attacks sampling in general with no attention to the specific uses proposed for Census 2000. He focuses on the weaknesses of pre-election polls, weaknesses which statisticians recognize and which do not characterize most other applications of sampling. It should be obvious that responses to a question that begins, "If the election were held today, ..." are unreliable predictors of what will happen when the election is actually held two weeks from now. A better analogy would be the Current Population Survey (conducted by the Census Bureau for the Bureau of Labor Statistics), which produces our monthly unemployment rate and much else. The CPS, unlike pre-election polls, asks about the current state of a specific population. Both the government and the private sector have long used the results of the CPS and other sample surveys to guide decisions, a practice that Safire's claim that "sampling is no science" condemns along with plans for Census 2000.

What is the issue?

In response to the expense of the 1990 Census and its substantial undercount, Congress in 1992 passed legislation with bipartisan support creating an expert panel of the National Academy of Sciences to study these issues. In 1994, this panel concluded that the census could obtain higher accuracy at lower cost "by supplementing a reduced intensity of traditional enumeration with statistical estimates of the number and characteristics of those not directly enumerated." Another National Academy panel said in 1996 that, "It is likely that repeating 1990 methods with the same relative level of resources to conduct the 2000 census will yield results that are of worse quality than obtained in 1990 and that have bias and undercoverage problems of unknown size and direction."

The Census Bureau then announced a variety of initiatives to improve Census 2000, including many to improve the initial enumeration, as Safire wants. The Bureau also announced two new uses of statistical sampling. In place of an attempt to contact in person every household that fails to respond to two mailings, sampling would be employed to ensure that data are obtained from at least 90 percent of the housing units in each census tract. This would roughly attain 1990 completeness levels, but at substantially reduced cost. To attack the remaining undercount, the Bureau proposes a national state-by-state quality check sample survey of 750,000 housing units. It will conduct dress rehearsals of various aspects of Census 2000 in three locations during 1998. You can find the details in "Report to Congress: The Plan for Census 2000" and other material available at the Census Bureau Web site <http://www.census.gov>.

There is a consensus among those competent to judge that the Bureau's intended uses of sampling are sound. Specifically, they are likely to produce both more accurate counts and more accurate estimates of the size of remaining errors than would intensified use of traditional enumeration. The plans have been endorsed by several National Academy panels, by the ASA through its Blue Ribbon Panel and other channels, by the American Sociological Association, and by other expert groups. Most observers feel that only the clearly expressed consensus of scientific groups has prevented Congress from mandating non-use of sampling, by making less plausible the pretext that plans for Census 2000 are not scientifically sound. Safire's column restates this pretext. Even more seriously, Safire also suggests that the Census Bureau's plans for Census 2000 are politically motivated. He attributes use of sampling to the influence of "Democrats" and "liberals." This charge ignores the genesis of the plans in National Academy recommendations and the imprimatur given by ASA and other scientific groups. It also engages in the risky tactic of implying that national statistical agencies have abandoned their longstanding non-partisan professionalism. The tactic is risky because we all rely on these agencies for data on politically sensitive issues such as unemployment. Their non-partisan neutrality should be a starting point for debates on national issues, not a subject of the debates.

Congressional attempts to mandate technical details of census procedures are exactly the type of political influence that Safire condemns. I do not question what Congress may do through its control of federal budgets, but I do question the wisdom of its recent interactions with the Census Bureau and their likely effects on public confidence in all government data.

What can you do?

Safire's column is widely distributed, and replies to the Times are an inadequate response. We can expect more of the same as Census 2000 approaches. Here are two requests: First, local news media will continue to carry comments on sampling in the census in news articles, opinion columns, and letters to the editor. When these are uninformed, please submit a temperate and informed reply that cites the scientific consensus and reaffirms that sampling is a valid and widely used method of producing trustworthy data. Include a plug for the value to the nation of non-partisan statistical services. Second, write your Senators and Members of Congress when there is pending congressional action on technical statistical matters. Although ASA sent a letter signed by ten past and present presidents to all Members of Congress in June of 1997, letters from constituents may carry more weight. Even better, persuade the head of your company or organization to write. You will find good background material for your efforts on the ASA Web

site. The report of the Census 2000 Blue Ribbon Panel and the presidents' letter appear under "Previous Postings" for 1 July and 25 June 1997. If we do not speak up for statistics and federal statisticians, who will?