

CENSUS 2000: PUTTING OUR MONEY WHERE IT COUNTS

HEARING
BEFORE THE
COMMITTEE ON
GOVERNMENT REFORM
AND OVERSIGHT
HOUSE OF REPRESENTATIVES
ONE HUNDRED FOURTH CONGRESS
SECOND SESSION

—————
FEBRUARY 29, 1996
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CENSUS 2000: PUTTING OUR MONEY WHERE IT COUNTS

THURSDAY, FEBRUARY 29, 1996

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT,
Washington, DC.

The committee met, pursuant to notice, at 9:05 a.m., in room 2154, Rayburn House Office Building, Hon. William F. Clinger, Jr., (chairman of the committee) presiding.

Present: Representatives Clinger, Morella, Zeliff, Horn, Mica, Fox, Chrysler, Gutknecht, Bass, LaTourette, Ehrlich, Thurman, Maloney, Barrett, Moran, Green, Meek, and Holden.

Staff present: James Clarke, staff director; Judy Blanchard, deputy staff director; Kevin Sabo, general counsel; Jonathan Yates, associate general counsel; Judith McCoy, chief clerk; Cheri Tillett, assistant chief clerk/calendar clerk; Jane Cobb and Cissy Mittleman, professional staff members; Michele Lang, special counsel for the Subcommittee on National Security, International Affairs, and Criminal Justice; Sean Littlefield, professional staff member for the Subcommittee on National Security, International Affairs, and Criminal Justice; David Schooler, minority chief counsel; Donald Goldberg, minority assistant to counsel; Dan Hernandez, David McMillen, and Mark Stephenson, minority professional staff; and Ellen Rayner, minority chief clerk.

Mr. CLINGER. The Committee on Government Reform and Oversight will come to order.

I am very pleased today to convene this hearing on the plans for the next decennial census in the year 2000. At 4 years out, it may seem early for us to be thinking about the census, but, in fact, it's rather late. Major decisions in the planning process for the year 2000 are well underway. Preparations for a decennial census usually begin some 10 to 12 years in advance of census day, and already millions of dollars have gone into planning and testing different methods and techniques for the millennium census.

Some of the Census Bureau's major decisions were announced by Commerce Department officials yesterday. They announced new cooperative partnerships at the State and local levels. They announced new plans for public awareness campaigns and more user-friendly forms. They also announced advances in fine-tuning the country's address list. And they announced the use of sampling and adjustment to complete the count, to reduce costs, and to try and eliminate the minority population undercounts. They also announced the extensive use of other agencies' records and files to complete missing information.

The Bureau says its new plan will cost a total of \$3.9 billion. That is approximately \$1 billion less than the estimated \$4.8 billion if we did the census the same way that it was done in 1990. However, it is still more than \$1 billion more than the \$2.6 billion spent on the 1990 census.

What is really fundamentally at issue here is the methodology to be employed in conducting the decennial census. Prior to 1990, the census was done by an attempt at physically locating every live being in the United States. Because of the incremental costs and increasing difficulty in counting the hard to reach populations, such as the homeless and illegal immigrants, plans for the 1990 census included a "postenumeration survey," which was a sample survey of the population which was to be used to adjust the original head count and to more accurately reflect the population that didn't respond initially.

However, because of controversy over the accuracy and fairness of the sampling method, then-Commerce Secretary Mosbacher decided against using the adjusted number. Over 50 lawsuits were filed after the 1990 census, and some are still in the process of being decided. One of those cases, *New York City v. Department of Commerce*, was argued just last month before the Supreme Court, and we anticipate a decision in that case by June of this year.

The Census Bureau has made the determination to use more advanced statistical sampling methodologies in the 2000 census. Although technically very complicated, my understanding is that the Bureau will use sampling to adjust the census count after a physical identification of 90 percent of the population in each county. It also plans to get at the hard to reach populations by conducting a separate survey of 750,000 households and incorporating that data into the initial figure to effect what Bureau officials have termed a "one-number" census.

Clearly, the stakes are very large, not only for fulfilling our constitutional mandate for apportionment, but for the billions of dollars in Federal grant moneys that are divvied up each year to pay for new roads, schools, Medicaid, and many other critical needs.

My goals for convening this hearing on the 2000 decennial census are to bring together a group of experts—and I truly believe we have assembled a group of experts here today—who have experience with decennial census issues and who will bring to the table a representative sample, if you will, of the various opinions. And there are many and varied opinions on the Bureau's new, and somewhat controversial plans.

Census issues are not only a new jurisdiction of this committee—and we are pleased to have with us the former gurus in this area—but they are likely new issues for those who were not in Congress for the intensive debates and the numerous pieces of legislation that were considered in the years leading up to and directly following the 1990 census.

I believe it is important that our members realize the critical role they must play in guiding, shaping, and validating decisions about how our decennial census is going to be conducted. I want to express my appreciation to Congressman Zeff, whose subcommittee retains jurisdiction over this matter, for allowing me the opportunity to hold a full committee hearing on this very critical issue.

Again, in doing so, I hope to raise the level of consciousness in Congress about these important issues.

There are benefits as well as drawbacks to any methodology which may be chosen. It is best to air these earlier rather than later in the process; otherwise, the closer we get to the year 2000 without understanding and resolving our differences, the greater the risk of tremendously costly changes to the final plans, and another decade of litigation and continued erosion in the public's confidence and participation in the decennial census.

I want to welcome and introduce our witnesses. On our first panel, we are very pleased to have the distinguished Senator from Wisconsin, Mr. Herb Kohl. Senator Kohl, in an action which highlights the level of concern about the adjustment issue, joined Senators Specter and Feingold in submitting a brief in the case pending, that I alluded to earlier, in the Supreme Court. We look forward very much to hearing his thoughts on the plans for the 2000 census.

We are also fortunate to have with us Congressman Tom Sawyer and Congressman Tim Petri, the chairman and ranking member, respectively, of the former Census Subcommittee. Both of these men put in many hours of subcommittee work and come before us with a level of expertise unparalleled in the House of Representatives.

The other witnesses on the second panel, I will introduce at a later time.

[The prepared statement of Hon. William F. Clinger, Jr., follows:]

PREPARED STATEMENT OF HON. WILLIAM F. CLINGER, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF PENNSYLVANIA

I am pleased to convene this hearing today on the plans for the next decennial census in the year 2000. At four years out, it may seem early for us to be thinking about the Census. However, major decisions in the planning process for the year 2000 are well underway. Preparations for a decennial census usually begin some 10 to 12 years in advance of Census Day. Already, millions of dollars have gone into planning and testing different methods and techniques for the Millennium Census.

Some of the Census Bureau's major decisions were announced by Commerce Department officials yesterday. They announced new cooperative partnerships at the state and local levels. They announced new plans for public awareness campaigns and more user-friendly forms. They announced advances in fine-tuning the country's address list. They announced the use of sampling and adjustment to complete the count, to reduce costs, and to try and eliminate the minority population undercounts. And they announced the extensive use of other agencies' records and files to complete missing information. The Bureau says its new plan will cost a total of \$3.9 billion. That's approximately one billion dollars less than the estimated \$4.8 billion (in 1992 dollars) if we did the census the way it was done in 1990. However, it's still more than a billion dollars more than the \$2.6 billion spent on the 1990 census.

What is fundamentally at issue is the methodology to be employed in conducting the decennial census. Prior to 1990, the Census was done by an attempt at physically locating every live being in the United States. Because of the incremental costs and increasing difficulty in counting the hard-to-reach populations, such as the homeless and illegal immigrants, plans for the 1990 Census included a "post enumeration survey"—a sample survey of the population which was to be used to adjust the original headcount and to more accurately reflect the population that didn't respond initially. However, because of controversy over the accuracy and fairness of the sampling method, then-Commerce Secretary Mosbacher decided against using the adjusted number. Over 50 lawsuits were filed after the 1990 Census, and some have yet to be decided. One of the cases, *New York City v. Department of Commerce*, was argued last month before the Supreme Court. A decision is due in June.

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my understanding is that the Bureau will use sampling to adjust the census count after a physical identification of 90% of the population in each county. It also plans to get at the hard-to-reach populations by conducting a separate survey of 750,000 households and incorporating that data into the initial figure to effect what Bureau officials have termed a "one-number" census.

Clearly, the stakes are large, not only for fulfilling our Constitutional mandate for apportionment, but for the billions of dollars in federal grant monies that are divvied up each year to pay for new roads, schools, Medicaid, and other critical needs. My goals for convening this hearing on the 2000 Decennial Census, are to bring together a group of experts who have experience with decennial census issues, and who will bring to the table a representative sample, if you will, of the various opinions about the Bureau's new plans.

Census issues are not only new jurisdiction for this Committee, but they are likely new issues for those who were not in Congress for the intensive debates and numerous pieces of legislation that were considered in the years leading up to and directly following the 1990 census. I believe it is important that our Members realize the critical role they must play in guiding, shaping and validating decisions about how our decennial census is conducted.

I want to thank Mr. Zeliff, whose subcommittee retains jurisdiction over this matter, for allowing me the opportunity to hold a full committee hearing. Again, in doing so, I hope to raise the level of consciousness in Congress about these important issues. There are benefits as well as drawbacks to any methodology chosen. It is best to air these earlier rather than later. Otherwise, the closer we get to 2000 without understanding and resolving our differences, the greater the risk of tremendously costly changes to the final plans, another decade of litigation, and continued erosion in the public's confidence and participation in the decennial census.

I want to welcome and introduce our witnesses. On our first panel, we will hear from the Senator from Wisconsin, Herb Kohl. Senator Kohl; in an action which highlights the level of concern about the adjustment issue, joined Senators Specter and Feingold in submitting a brief in the case pending before the Supreme Court. We look forward to hearing his thoughts on the plans for the 2000 census.

We are also fortunate to have with us Congressman Tom Sawyer and Congressman Tom Petri, the Chairman and Ranking Member, respectively, of the former Census Subcommittee. Both these men put in many hours of subcommittee work, and come before us with a level of expertise unparalleled in the House of Representatives.

Finally, we have a panel of experts that bring a great deal of knowledge and experience to the table. We have two former Commerce Department officials here. Bruce Chapman served as Census Bureau Director under President Reagan—he is now President of the Discovery Institute in Seattle—and Barbara Bailar topped her 29-year career at the Census Bureau as Associate Director for Statistical Standards and Methodology. Dr. Bailar is now at the National Opinion Research Center at the University of Chicago.

We are fortunate to have demographer Dr. Steve Murdock, who specializes in rural demographics and sociology at Texas A & M University. Also with us is Charles Schultze, Senior Fellow at The Brookings Institution, who has a distinguished record of service in the federal government. He was the Director of the U. S. Bureau of the Budget in the mid-60's, and Chairman of the Council of Economic Advisors under President Carter. More recently, he chaired the "Panel on Census Requirements in the Year 2000 and Beyond" sponsored by the Committee on National Statistics. And testifying jointly with Dr. Schultze, and also having served on the Census 2000 panel is Dr. James Trussell, economist and statistician, currently a professor of economics and public affairs at Princeton, he is also the Director of the University's Office of Population Research. I want to thank you all for coming, some of you from across the country, and welcome you to this important discussion today.

Mr. CLINGER. At this time, I would defer to the gentlelady from Florida if she has any opening statement.

Mrs. Thurman.

Mrs. THURMAN. Mr. Chairman, I do have an opening statement; however, I would like to get unanimous consent to go ahead and have it submitted for the record. I think you have summed up all of our concerns, and I would like to have this time for our witnesses to come and speak to us, and not use their time any more

than just to listen to their expertise. And we appreciate them being here this morning.

Mr. CLINGER. Without objection, so ordered.

[The prepared statement of Hon. Karen L. Thurman follows:]

PREPARED STATEMENT OF HON. KAREN L. THURMAN, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF FLORIDA

Thank you Mr. Chairman. I am pleased that the Full Committee is examining this important subject. The National Security, International Affairs, and Criminal Justice Subcommittee held an oversight hearing on the 2000 census back in October. As I said then, all of us have a vested interest in assuring that the 2000 census is the most accurate possible—to make sure that everyone is counted.

The census is used for Congressional representation and to distribute billions of dollars in Federal funds. It is used by state governments to distribute funds among communities. Local governments use it to plan fire protection and ambulance routes. Corporations use it in marketing.

There are three key issues as the 2000 census approaches: the public must be convinced that the procedures are fair to every citizen, professional statisticians and demographers must be convinced that the Bureau's methods are valid, and finally Congress must be convinced that the procedures are fair.

The census has never been perfect, and never will be. George Washington complained about the first census. In 1870 several cities had to be recounted. In 1940 the Census Bureau began estimating how many people were missed.

The total undercount has come down considerably since 1940, but the difference in undercount between Blacks and Whites has persisted. In 1990, the undercount went up for the first time since 1940, and the differential was larger than it had ever been.

Since 1980, the experts at the Census Bureau have been telling us that with enough time and resources, they can solve the problem of the undercount. They made a valiant effort in 1990, but enough questions were raised about those procedures by statisticians and politicians that the Secretary of Commerce chose not to correct the census numbers.

For Florida that meant a loss of millions of dollars. In Medicaid alone, according to GAO estimates, Florida lost 8.2 million dollars in 1991 because the adjusted census numbers were not used. Over the decade, Florida is likely to lose over 100 million dollars in Medicaid funds alone.

We are here today to make sure that the 2000 census is fair—fair to states like Florida who are shouldering an unfair burden, and fair to both the poor and homeless, in rural and urban areas, who are left out of the census.

If we are to make the 2000 census more equitable, a strong partnership between the Congress and the Bureau of the Census is absolutely necessary.

The first goal for the Census Bureau must be to ensure the public confidence in the numbers. During the October hearing before the National Security Subcommittee, the Inspector General for the Department of Commerce criticized the Census Bureau's decision on sampling because other options would save more money. What he did not take into account was the effect sampling might have on public confidence. If public confidence is lost, future censuses will be imperiled. This creates a tight balancing act—maintaining public confidence and providing cost-effectiveness.

The Census Bureau must also convince the professional community that their procedures are sound. Robert Fay, the Senior Mathematical Statistician at the Census Bureau, said in 1993, "the 1990 [post enumeration survey] was so complex that the statistical profession has been unable to achieve a unified perspective on even its most technical and presumably objective aspects."

If the Census Bureau convinces the public that its procedures are fair, and convinces the demographic community that its methodologies are sound, it will go a long way towards convincing Congress that the census is equitable.

I would like to commend both Chairman Clinger and my good friend from New Hampshire, Chairman Zeff, for the truly bipartisan manner in which this hearing is being conducted. As I stated during the October Subcommittee hearing, there are a lot of stakeholders in this game and by working together, we can make sure the data collected from the 2000 census will benefit every American as we enter the 21st century.

Finally, I want to welcome all of today's witnesses. I look forward to their testimony. I also want to take this opportunity to thank Congressman Sawyer for all

the assistance he gave me during our October hearing. He provides a great deal of knowledge on this subject, as do Congressman Petri and Senator Kohl.

Thank you Mr. Chairman and I yield back.

Mr. CLINGER. Are there any other opening statements?

Mrs. Morella.

Mrs. MORELLA. Thank you, Mr. Chairman. I will just make a very brief comment. I want to thank you, first of all, for calling this hearing to look at the important issues to be addressed in planning the census. Boy, how time flies. It was 10 years ago when I started in Congress, and I served, initially, on that committee that dealt with census and population. And then my heirs are here who have done such a superlative job.

It's a very critical process, as critical an exercise in democracy as it's always been, and we are looking now at how the distribution of funds, that will gain even more attention at a time of general budget constraints, how we're going to be able to manage this in an expeditious way, with accuracy, and at what cost.

How should the Census Bureau carry out its responsibilities in the most efficient way possible? Are there new ways of doing old things that will provide the quality product we deserve at a cost we can afford? The Census Bureau has worked very hard to devise an approach that responds to these questions, but we are here to see whether or not the process could be even fine-tuned more.

I am glad, Mr. Chairman, that you have been able to assemble these two panels of very distinguished people who can add to the knowledge that we have, give us their technical knowledge, special perspectives, and years of experience.

I thank you, Mr. Chairman. I will submit a longer statement for the record.

[The prepared statements of Hon. Constance A. Morella, Hon. William H. Zeff, Jr., and Hon. Carrie P. Meek follow:]

PREPARED STATEMENT OF HON. CONSTANCE A. MORELLA, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF MARYLAND

Mr. Chairman, thank you for calling this hearing to look at some of the important issues that need to be addressed in planning the census coming up in the year 2000. This process, called for by the U.S. Constitution, is as critical an exercise in democracy today as it has always been. The results of this effort serve as the basis for making many decisions in our Government ranging from apportionment to Voting Rights Act enforcement to deciding how Federal funds are distributed in a fair and equitable manner. The distribution of funds gains even more attention at a time of general budget constraints and at a time when many policies are undergoing increased scrutiny and change. Thus, accuracy is critical.

But, at what cost? How should the Census Bureau carry out its responsibilities in the most efficient manner possible? Are there new ways of doing old things that will provide the quality product we deserve at a cost we can afford? The Census Bureau has worked hard to devise an approach that responds to these questions but could the process be fine-tuned even more?

I am glad, Mr. Chairman, that you were able to assemble these distinguished panels today so that we all can draw on their technical knowledge, special perspectives, and years of experience. The panel's insights into controversial issues such as census sampling techniques and census adjustments should be particularly valuable to the members of this committee.

As you know, I have one of the largest concentrations of Federal employees in any congressional district in the country. These employees include some who will be involved in the data gathering process and some who will be using the data. I single out these individuals because they have a special interest in knowing that we're going to "get it right" in the year 2000.

PREPARED STATEMENT OF HON. WILLIAM H. ZELIFF, JR., A REPRESENTATIVE IN
CONGRESS FROM THE STATE NEW HAMPSHIRE

Last October, as Chairman of the Subcommittee on National Security, International Affairs, and Criminal Justice, I convened an oversight hearing to review the status of the Bureau's Census 2000 preparations. At that time, Census Bureau Director Dr. Martha Riche informed the Subcommittee that the Bureau was planning to use a new methodology which would incorporate a statistical adjustment into the official census count.

The Census Bureau presented this methodology in its official public "roll out" of its Census 2000 plan yesterday. This plan is a dramatic departure from the 1990 and earlier censuses. Most significantly the Bureau will be using sampling to derive the official census count for the first time. Other major changes include incorporating the results of an independent sampling survey into the official census count to adjust for the undercount and using administrative records to supplement the count of nonresponding households.

While each of these features may have positive benefits, they also have many potential negative implications which could have dramatic effects on the costs and accuracy of the census. In 1980, the decennial census cost \$1.1 trillion dollars. In 1990, the census cost \$2.6 billion. And, if the 2000 census is conducted the same way it was in 1990, the cost is estimated to rise to \$4.8 billion. These are astronomical increases. Ironically, although we spent twice as much in 1980 as in 1990, the differential undercount increased.

Because of these increasing costs and decreasing accuracy, Congress, and in particular my Subcommittee, is faced with some very difficult policy decisions. Should the Bureau stop counting when it reaches 90%, and sample for the last 10%? Should the Bureau use the results of an independent sample survey, known as the Integrated Coverage Measurement, to adjust for the predicted undercount? Should the Bureau use administrative records from the IRS, the Food Stamp Program, Social Security and several other programs to supplement the count of nonresponding households? Should the Bureau seek to make broader use of other federal agency cooperation, including the Postal Service? Should the Bureau focus on wider public relation efforts, a shorter response form, and other measures to increase the initial response rate? Could we not save money by increasing the initial response rate? These are just some of the questions that, it seems to me, must be answered. I think today's full committee hearing will be a big step in bringing these issues to the public's attention.

However, the bottom line is that we must get this next census right. We cannot afford to spend billions of dollars fixing errors not addressed in planning, or accumulated later in costly court battles. In my view, the goal of a cost-effective and accurate census remains achievable. Over the next four years, my Subcommittee plans to work extensively with the Bureau, statistical experts, Members of Congress and other stakeholders to meet that important goal.

PREPARED STATEMENT OF HON. CARRIE P. MEEK, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF FLORIDA

Mr. Chairman, I appreciate very much your having this hearing at this time so that Congress can get involved in the 2000 Census. Article 1 section 2 of the Constitution says that Congress "shall by law direct" the manner by which the census shall be done. This hearing will help us comply with this constitutional mandate.

I am very concerned that the Census Bureau, in order to save money, is proposing to use a new hybrid way to conduct the census. The Bureau proposes to actually count people until they've counted 90 percent of the people in a county and then use a sampling method to count the remaining 10 percent. One of our witnesses, Dr. Murdock, says, at page 3 of his written statement, that this approach would be likely to have a disproportionate impact on minority racial/ethnic groups. I presume he is referring to groups like African Americans, Hispanic Americans, and Cuban Americans. He also says this approach will affect the accuracy of the count in many rural areas.

I have a special interest in accurate census data for African Americans and other minorities. The boundaries of my district, Alcee Hastings district, and Corrine Brown's district were established in 1992 by the Federal court in order to comply with the Voting Rights Act of 1965. It is difficult enough for a legislature or a Federal court to draw district boundaries. We should not make it any harder for them by having census data which are less accurate for African Americans and other minorities than they are for whites.

I cannot support a change in the way the census is done unless I have assurances that the change will not make the data for counting African Americans and other minority groups less accurate than they are now.

So, Mr. Chairman, I have a request of you and then a question for the panel. My request, Mr. Chairman, is that the Committee send a letter to the Census Bureau asking whether it can give us such assurances. I also would like the Census Bureau to tell the Committee why it decided on a 90 percent direct count and a 10 percent sample. Why not, for example, a 95 percent direct count and a 5 percent sample? Or a 50 percent direct count and a 50 percent sample? How much would each of these alternatives save us? Mr. Chairman, will you send such a letter?

Mr. CLINGER. Any further opening statements?

The gentleman from Maryland.

Mr. EHRLICH. Now I feel peer pressure from my colleague from Florida to forego, but I have no choice, since I'm here representing my chairman. I have a very brief statement, Mr. Chairman.

On behalf of Chairman Zeliff and myself, I thank Chairman Clinger for holding this hearing at the full committee level in order to highlight the importance of the Bureau's plans for Census 2000. It is critical Congress understand and consider the direction the Bureau has decided to take with Census 2000. The understanding gained today will assist my subcommittee's work with the Bureau in future hearings.

Last October, Chairman Zeliff convened an oversight hearing to review the status of Census 2000. At that hearing, we had Census director, Dr. Martha Farnsworth Riche, Commerce Inspector General, Frank DeGeorge, and Nye Stevens from the GAO testify. Dr. Riche informed the subcommittee that the Bureau was planning to use a new methodology which would incorporate a statistical adjustment into the official census count.

Since our subcommittee census hearing, further developments have occurred regarding the census. On January 10, the Supreme Court heard arguments, as the chairman has already testified. Just yesterday, the Bureau presented its official public roll-out of its Census 2000 plans, which is a radical departure from the 1990 and earlier censuses.

Major features in its plan include sampling for nonresponse, incorporating results of an independent sample survey into the official census count, and using administrative records from major national program to supplement the count of nonresponding households.

In an effort to determine whether these Census 2000 plans address problems that the 1990 census encountered and issues which arose from its proposed adjustment, Chairman Clinger has convened this full committee hearing today. I want to thank my colleagues appearing before the committee today. As a freshman Member, I look forward to hearing your thoughts and insights on the Bureau's plans for Census 2000.

I thank the indulgence of the chairman and the ranking member.

Mr. CLINGER. There being no further opening statements, I am now very pleased to call upon our first panel, if they would come forward, please: Senator Kohl, Congressman Sawyer, and Congressman Petri.

Gentlemen, we welcome you, especially Senator Kohl, we appreciate your taking time to come and share your insights on this critical matter with us. We are also delighted to have, as I said, our

former and continuing gurus on this issue from the House side, Mr. Sawyer and Mr. Petri.

So, gentlemen, welcome. Senator Kohl, would you lead off, please.

STATEMENTS OF HON. HERBERT KOHL, A U.S. SENATOR FROM THE STATE OF WISCONSIN; HON. THOMAS C. SAWYER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO; AND HON. THOMAS E. PETRI, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WISCONSIN

Senator KOHL. Thank you, Mr. Chairman. Thank you for inviting me to address the committee today. Although I am no longer a member of the Senate Governmental Affairs Committee, I still take a keen interest in our census.

As you know, I recently filed an amicus brief in the case on adjustment of the census before the Supreme Court, which was heard last month. I am optimistic that the Supreme Court will agree that the 1990 census should not be adjusted. And if there is no objection, I would like to submit a copy of the amicus brief for the record, at this time.

As we approach a new census, it is incumbent on all of us to do all that we can to ensure that everyone living in the United States on census day is counted. It is also our duty to ensure that the Census Bureau not rely on adjustment procedures that may result in a count that sacrifices the accuracy of the population distribution among the States.

The census is one of the few mandates of our Constitution. Article I, section 2, requires an actual enumeration, an individual count, not a statistical survey or poll of our Nation's population, every 10 years. There is little disagreement that the census should be as accurate as possible.

It disturbs me quite a bit that many people are missed in the census and that those missed are disproportionately poor, disproportionately minorities, and disproportionately isolated from our society. Their lack of representation is a solemn problem of equity that none of us should take lightly.

Public confidence in the census may have reached an all-time low in 1990. Many people know more about the problems with the census than the successes. Yet public confidence is essential for the voluntary cooperation that will control costs, and it is essential to achieve the level of accuracy that we all desire.

The State of Wisconsin has demonstrated, admirably, how State and local governments can play a role in improving the accuracy of the census. Wisconsin was given an award following the last census for the highest mail-back rate in the country. Much of the credit for that goes to the good people of Wisconsin who take their responsibilities seriously. But credit also belongs to the State and local officials, university faculty and staff, and our congressional delegation.

All of those officials worked hard to make sure that every citizen knew his or her responsibility. That is why it struck me as a particularly cruel twist of fate that Wisconsin would have lost a seat in the House of Representatives had the census been adjusted. But

that is not the reason that I opposed the adjusting of the 1990 census.

After considerable study and consultation with a number of experts, many of whom will testify before your committee today, I came to the conclusion that the proposed adjustment not only failed to improve the accuracy of the census, but it probably would have undermined the accuracy of the population distribution among the States.

In retrospect, we were extremely fortunate that we did not adjust the 1990 census. Several months after that contentious decision in July 1991, the Census Bureau discovered an error in the adjustment procedures that significantly reduced the undercount. Let me emphasize the word "significant." That is not my term but one used by Robert Fay, senior mathematical statistician at the Census Bureau.

If we had adjusted the 1990 census in July 1991, we would have had to do it all over again a few months later. Now, that is no way to build confidence in either the census or an adjustment procedure. Let us not forget, an adjustment is not a recount. It is, at best, an estimate about who was missed in the actual census, and it is an estimate based on hundreds of different factors.

I am pleased that the Census Bureau has begun the process of informing the American public of its plans for the 2000 census. There are a number of aspects of the plan for 2000 that make great strides over what was done in 1990, and I know that others will address these improvements in their testimony.

Unfortunately, some of the new procedures proposed for 2000 concern me. The procedures surrounding sampling for nonresponse and adjusting for the undercount will do more to undermine public confidence, both in 2000 and in the future. These procedures may save money in the short run, but we may end up with a census count that is less accurate and less fair.

Sampling for nonresponse is not something we should dismiss out of hand. We all have experience with sample surveys as part of our campaigns, and they can be remarkably accurate devices. But what is envisioned for the 2000 census is something that is quite different. The procedures for getting from the mail-back rate to the 90 percent cutoff for sampling are greatly disturbing. There appears to be no scientific method for determining who is included and who is not.

We are asked to believe that this sample will be more accurate than the census, but we are given little reason to believe that. This is a survey of 1.2 million housing units, yet we know from years of study that surveys conducted by the Census Bureau of 50,000 to 60,000 households have a much more serious undercount problem than the census.

I fear that, when the work is done, the 2000 census will have a higher undercount than in 1990. This will increase the pressure for some sort of statistical adjustment, but the same questions will dog adjustment in 2000 as in 1990. Is it more accurate for all levels of geography? Is it more accurate for the population distribution? Is the system free from errors like those discovered following the decision not to adjust? How will we know if it is error-free?

Ultimately, as the Constitution requires, we want a census as close to an actual enumeration as possible. The Census Bureau must prove to us that the problems of 1990 will not be there in the year 2000. Matching 170,000 households to the census files was a serious problem in 1990. In 2000, there will be nearly 5 times as many households in the survey and less time to do the match.

I very much hope that the 2000 census is the most accurate ever and that there is no need for statistical measures to improve the count. I hope today's hearing will move us closer to a 2000 census that is fair and beyond reproach.

So I thank you, Mr. Chairman, for inviting me to address the committee, and I am sorry I am unable to stay, as I have to get back to the Senate.

[The prepared statement of Hon. Herbert Kohl and the amicus brief follow:]

PREPARED STATEMENT OF HON. HERBERT KOHL, A U.S. SENATOR FROM THE STATE OF WISCONSIN

Thank you Mr. Chairman for inviting me to address the Committee today. Although I am no longer a member of the Senate Governmental Affairs Committee, I still take a keen interest in our census. As you know, I recently filed an *amicus* brief in the case on adjustment of the census before the Supreme Court, heard last month. I am optimistic that the Supreme Court will agree that the 1990 census should not be adjusted and, if there is no objection, I would like to submit a copy of the *amicus* brief for the Record at this time.

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That is why it struck me as a particularly cruel twist of fate that Wisconsin would have lost a seat in the House of Representatives had the census been adjusted. But that is not the reason I opposed adjusting the 1990 census. After considerable study and consultation with a number of experts—many of whom will testify before your committee today—I came to the conclusion that the proposed adjustment not only failed to improve the accuracy of the census, but it probably would have undermined the accuracy of the population distribution among the states.

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I fear that when the work is done, the 2000 census will have a higher undercount than in 1990. This will increase the pressure for some sort of statistical adjustment. But the same questions will dog adjustment in 2000 as in 1990. Is it more accurate for all levels of geography? Is it more accurate for the population distribution? Is the system free from errors like those discovered following the decision not to adjust? How will we know if it is error free? Ultimately, as the Constitution requires, we want a census as close to an actual enumeration as possible.

The Census Bureau must prove to us that the problems of 1990 will not be there in 2000. Matching 170,000 households to the Census files was a serious problem in 1990. In 2000 there will be nearly 5 times as many households in the survey, and less time to do the match.

I sincerely hope that the 2000 census is the most accurate ever, and that there is no need for statistical measures to improve the count. I hope today's hearing will move us closer to a 2000 census that is fair and beyond reproach.

Again, thank you Mr. Chairman for inviting me to address the Committee.

Nos. 94-1614, 94-1631 and 94-1985

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**BRIEF OF U.S. SENATORS HERB KOHL,
ARLEN SPECTER AND RUSSELL FEINGOLD
AS AMICI CURIAE IN SUPPORT OF PETITIONERS**

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INTEREST OF AMICI CURIAE

Herb Kohl, Arlen Specter and Russell Feingold are United States Senators who, as citizens, legislators and members of the Senate Committee on the Judiciary, share a direct interest in the integrity of the census.¹ The decision, by a divided panel, of the court of appeals in *City of New York v. U.S. Department of Commerce*, 34 F.3d 1114 (2nd Cir. 1994), *cert. granted*, 64 U.S.L.W. 3238 (Sept. 27, 1995), questions not only that integrity but the countless decisions made, since 1991, by local, state and federal governments relying on the census for its accuracy and fairness.

¹ Senator Kohl was, until 1993, the Chairman of the Subcommittee on Government Information and Regulation of the Senate's Committee on Governmental Affairs, which has oversight jurisdiction of the census.

A decision by this Court to affirm the court of appeals would lead, inexorably, to a reapportionment of the Congress and, directly, to the mid-decade loss by Wisconsin and Pennsylvania of seats in the U.S. House of Representatives and their corresponding votes in the electoral college. *Id.* at 1122. Moreover, the harsh consequences of the court of appeals' decision would reach every level of government and every citizen for they have properly relied, for the last four years, on the accuracy of the 1990 census to conduct the public's business and to ensure "equal representation for equal numbers of people." *Wesberry v. Sanders*, 376 U.S. 1, 7-8 (1964).

The principal petitioner and the principal respondent have consented to the filing of this brief, and their letters of consent are on file with the Clerk of the Court pursuant to Rule 37. With the United States and the States of Wisconsin and Oklahoma (in Case Nos. 94-1614 and 94-1631, respectively, which have been consolidated with this case), amici request that this Court reverse the decision of the court of appeals, thereby affirming the district court's judgment and the 1991 decision by the Secretary of Commerce that declined to use statistical sampling to adjust the results of the census.

SUMMARY OF ARGUMENT

The Constitution, in Article I, section 2, mandates an "actual enumeration" of the country's population every 10 years. The census serves two related and equally compelling purposes: to count the population and to locate the people of this country by state and political subdivision. The results of the census determine the apportionment of the House of Representatives, the number of presidential electors for each state, the shape of state legislative districts, and boundaries for county and city elections. In addition, Congress and the executive branch rely on the decennial census to allocate federal funds to state and local governments. The census, in this federalist

system, provides nothing less than distributive fairness in a country of 250 million people.

The census is an enumeration, an individual count under the Constitution of the “whole number of persons in each state,” not a statistical survey or poll. And it is imperfect. Long before the 1990 census, there was controversy over whether statistical sampling procedures should be used to adjust the results for the miscounting that occurs in every census. For at least 50 years, concern has grown about undercounting, particularly “differential undercounts” (higher undercount rates for certain racial and ethnic minority groups than for non-minorities). That has led to repeated proposals, repeatedly rejected by Congress and the courts, to alter or statistically “adjust” the decennial census data to “improve” their accuracy.

The precise number of people and their distribution within the United States can never be determined with absolute certainty. The size of the country, its heterogeneity, and the mobility of its population over a large area make that impossible. Some people are unwilling to be counted while others are unable to complete the census forms. Given the complexity and inherent imperfection of any census, the question for this Court is whether the administrative decision not to adjust the 1990 census was within the range of choices constitutionally available to the federal government through the Department and Secretary of Commerce. Indeed, the dispositive question is not whether there was an undercount, but whether it is possible to “remedy” an undercount without damaging the accuracy, the credibility and the distributive fairness of the census.

Any decision to adjust the census cannot be based solely on the possibility, or even the certainty, that the statistically-adjusted result might reflect more accurately the *total* population of the country or any particular state. Adjusted totals must, if they are to supplant the census, reflect as well a more accurate distribution of the relative

population among the states, counties, cities, wards, and precincts of the United States. The Secretary's decision in 1991 to leave the census intact rested on persuasive evidence that the proposed adjustments failed to improve—and, indeed, probably would undermine—the accuracy of the population distribution among the states. The court of appeals improperly applied strict scrutiny to the Secretary's decision, mistakenly equating a dispute over “equal representation” with a dispute between statisticians. Yet under *any* standard of review, strict or deferential, the Secretary's decision should be affirmed.

The proposed adjustment at issue here would sacrifice distributive accuracy—“fairness,” the district court said, *City of New York v. U.S. Department of Commerce*, 822 F. Supp. 906, 924 (E.D.N.Y. 1993) (*City of New York III*)—on the altar of an unattainable statistical ideal for the country as a whole. The adjustment would “count” six million unidentified people yet “discount” more than 900,000 people actually counted and identified by the census. If the census were now adjusted, the record suggests the population of 29 states arguably would be more accurately reflected, but the population count in the remaining 21 states would become less accurate and, accordingly, less fair. Administrative decisions can turn on these statistical distinctions, but constitutional decisions should not.

PROCEDURAL BACKGROUND

Statistical adjustment, which has had its advocates since the 1950s, first became a major issue for the 1980 census. See JENNIFER D. WILLIAMS, CONGRESSIONAL RESEARCH SERVICE REPORT FOR CONGRESS, DECENNIAL CENSUS COVERAGE: THE ADJUSTMENT ISSUE 5 (1994) (the “CRS Report”). On May 13, 1980, the Secretary of Commerce directed the Census Bureau to decide whether to adjust the 1980 census results. Declining to do that, the Bureau maintained that its “coverage improvement programs had been successful and that there was no accurate method available to adjust the population data.”

Id. at 6. The Bureau stressed the need for continuing research on undercount measurement. See U.S. Library of Congress, *Adjusting the 1990 Census*, p. 6.

Following the announcement, more than 50 lawsuits were filed, most asking the courts to order the census statistically adjusted. In one case, *Carey v. Klutznick*, 508 F. Supp. 420 (S.D.N.Y. 1980), *decided sub nom.*, *Cuomo v. Baldrige*, 674 F. Supp. 1089 (S.D.N.Y. 1987), the State of New York alleged that, because of the 1980 undercount of African-Americans and Hispanics, it lost a congressional seat and millions of dollars in federal funds. The court affirmed the Census Bureau's conclusion that adequate census adjustment methodology had not been developed. *Id.* at 1107; see U.S. Library of Congress, *Adjusting the 1990 Census*, p. 7.

For the 1990 census, the Census Bureau created an Undercount Steering Committee and staff to address the undercount issue. The Bureau also solicited opinions on adjustment from outside experts and organizations including the American Statistical Association and the National Academy of Sciences. See *City of New York III*, 822 F. Supp. at 913-14. On October 30, 1987, however, the Commerce Department announced that it did not intend to adjust the 1990 census for a number of reasons, including the inherent subjectivity and questionable reliability of the adjustment process.

Within a year, the plaintiffs sued to enjoin the 1990 census, challenging its methodology and seeking to reverse the administrative decision against adjustment. The Department of Commerce, its Secretary, the Census Bureau, President George Bush and other public officials, all defendants, moved to dismiss the case, but the U.S. District Court for the Eastern District of New York concluded that the plaintiffs had standing to challenge the census on constitutional grounds. *City of New York v. U.S. Department of Commerce*, 713 F. Supp. 48 (E.D.N.Y. 1989) (*City of New York I*). The district

court also ruled that it would review the Secretary's decision not to adjust the 1990 census under the "arbitrary and capricious" standard of review established by the Administrative Procedure Act, 5 U.S.C. § 706(2)(A) (1982) ("APA"). See *City of New York I*, 713 F. Supp. at 54.

The parties ultimately agreed that the Commerce Department would vacate its 1987 decision against the prospective census adjustment—provided that Robert A. Mosbacher, then Secretary of Commerce, would decide by July 15, 1991 "de novo and 'with an open mind' whether adjustment was warranted." *City of New York III*, 822 F. Supp. at 915. The stipulation acknowledged the Commerce Department's program to gather the statistical data necessary for an adjustment, and the Department established "guidelines" for the Secretary's decision. With the stipulation, the parties also created an eight-member Special Advisory Panel of statistical and demographic experts with the plaintiffs naming four of the experts.

The plaintiffs then challenged the Department's guidelines as vague and inadequate and sought a declaratory judgment that a statistical adjustment would not violate the Constitution or any federal statute. The defendants again responded that the plaintiffs' challenge presented a nonjusticiable political question. In *City of New York v. U.S. Department of Commerce*, 739 F. Supp. 761, 767-68 (E.D.N.Y. 1990) (*City of New York II*), the district court again rejected the political question defense and concluded that statistical adjustment *per se* would not violate the Constitution or federal law.

On July 15, 1991, with the case pending, Secretary Mosbacher announced that the 1990 census would not be adjusted. See 56 Fed. Reg. 33582 (the "Decision"). Appearing before the census subcommittee of the House of Representatives' Committee on the Post Office and Civil Service, Mosbacher testified that "[a]fter a thorough review, I find the evidence in support of an adjustment to

be inconclusive and unconvincing.” *Oversight Hearing to Review Census Adjustment Decision: Hearing Before the Subcomm. on Census and Population of the House Comm. on the Post Office and Civil Service*, 102d Cong., 1st Sess. 13 (1991) (testimony of Robert A. Mosbacher).²

The district court tried the case for more than two weeks in 1992, hearing a wide variety of testimony and evidence. In an April 13, 1993 decision, Judge Joseph M. McLaughlin declined to overturn the Commerce Department’s decision against adjustment and held that the Secretary’s decision, construed in light of constitutional requirements, was not “so beyond the pale of reason as to be arbitrary or capricious.” *City of New York III*, 822 F. Supp. at 929.

On July 6, 1993, the plaintiffs appealed the decision to the U.S. Court of Appeals for the Second Circuit. Vacating and remanding the district court’s decision, the appellate court concluded last year that “given the concededly greater accuracy of the adjusted count, the Secretary’s decision was not entitled to be upheld without a showing by the Secretary that the refusal to adjust the census was essential to the achievement of a legitimate governmental objective.” *City of New York*, 34 F.3d at 1124. This Court granted the petitions for a writ of certiorari on September 27, 1995.

² Following the Secretary’s decision not to adjust the 1990 census, the States of Wisconsin and Oklahoma intervened as defendants in the New York district court case. Wisconsin had filed suit in the U.S. District Court for the Western District of Wisconsin to enjoin the proposed adjustment, but the state voluntarily dismissed the case following the Secretary’s decision. *State of Wisconsin v. U.S. Department of Commerce*, No. 91-C-0542-C (W.D. Wis. 1991).

ARGUMENT

The court of appeals erred, fundamentally, when it characterized the Secretary's decision as conceding the "greater accuracy of the adjusted count." In fact, the Secretary's only concession was to acknowledge the obvious: the statistical adjustment might well improve the total count for some purposes and in some areas, but for many—if not most—purposes, the census itself provided the more accurate count. Ultimately, the Secretary concluded that the evidence in support of an adjustment was both inconclusive and unconvincing:

In attempting to make the total count more accurate by an adjustment, the relative count among the states would become less accurate with about 21 states adversely affected.

Many large cities received less accurate treatment under an adjustment.

Fully one third of the population lives in areas where the *census* appears more accurate and, as population units become smaller, the adjusted figures become increasingly unreliable.

And, finally, when the Census Bureau made allowances for factors not yet estimated, the census enumeration in 28 or 29 states became less accurate "as adjusted."

Decision at 1-1 - 1-5. Any one of these factual conclusions, standing alone, would support the Secretary's conclusion and the district court's decision affirming it. Taken collectively, however, the facts more than meet even the Second Circuit's demanding (and erroneous) requirement that the decision not to adjust the census be "essential" to achieve a legitimate governmental objective. The Secretary's decision not to adjust the 1990 enumeration applies and protects the constitutional principles of fairness, accuracy and integrity that underlie the decennial census.

I. THE PROPOSED ADJUSTMENT WOULD NOT, IN FACT, MAKE THE CENSUS MORE ACCURATE.

An adjustment is not a recount. It is, at best, an estimate—albeit an educated one—about who was missed in the actual census. There is a general consensus among statisticians and demographers who oppose adjustment that the process of estimating the undercount is, itself, very uncertain. Assuming that minorities were disproportionately undercounted, in a census that actually counted more than 98 percent of the population, then they will likely be undercounted at even higher rates in a post-census survey that samples a much smaller segment of the population. That is particularly true where, as here, the post-census survey depends entirely on census employees canvassing residential areas rather than on individual household participation in the process.

There have been many attempts—in Congress and in the courts, before and after the 1990 census—to require the Census Bureau to adjust the census results to “correct” the undercount. The two other circuits that have addressed this issue agreed with the district court in this case.³ No attempt had succeeded until the Second Circuit’s decision, and with good reason. The director of the census may have put it best: “Adjustment is an issue about which reasonable men and women and the best statisticians and demographers can disagree.” BARBARA EVERITT BRYANT, RECOMMENDATION TO SECRETARY OF COMMERCE ROBERT A. MOSBACHER ON WHETHER OR NOT TO ADJUST THE 1990 CENSUS 3 (1991) (the “Bryant Report”). That is precisely why the Secretary’s administrative decision should stand and the census should remain intact.

³ See *City of Detroit v. Franklin*, 4 F.3d 1367 (6th Cir. 1993), cert. denied. — U.S. —, 114 S. Ct. 1217 (1994); *Tucker v. U.S. Department of Commerce*, 958 F.2d 1411 (7th Cir.), cert. denied. — U.S. —, 113 S. Ct. 407 (1992).

A. The Enumeration Is Accurate.

The 1990 census counted 248,709,873 people in the “actual enumeration” required by the Constitution. In his report to the Secretary of Commerce, one member of the Special Advisory Committee summarized the critical difference between the census itself and the proposed adjustment:

Adjustment numbers are no more than estimates, just as the Census numbers are estimates. The difference is that Census estimates are based on a physical count—at least some sort of reality—while adjusted numbers are not. Since the Census correctly enumerated 98.8% of the population—a percentage that is well within the margin of error for a survey of this size—there is no reason to use an adjustment that has a greater margin of error.

J. MICHAEL MCGEHEE, REPORT TO SECRETARY ROBERT A. MOSBACHER ON THE ISSUE OF ADJUSTING THE 1990 CENSUS 3 (1991) (the “McGehee Report”).

The first step in the 1990 decennial census was an enumeration, an attempt actually to count every person residing in the United States on April 1, 1990 by mailing census questionnaires to addresses compiled by the Census Bureau. Residents were asked to complete the questionnaire and return it by mail. To independently evaluate and assess the quality and coverage of the census, the Census Bureau used two statistical measurements: the post-enumeration survey (the “PES”) and a demographic analysis (the “DA”).

The PES is a sample survey developed in the 1980s to provide additional geographic and ethnic information about the people missed in the census. The Census Bureau conducted a survey of approximately 165,000 housing units in 5,290 census blocks or small block clusters shortly after the 1990 census. Interviewers went to every household on the sample blocks to collect basic information.

These survey records were then matched against the census data for those blocks to determine who had been missed or erroneously included in the census. Following the matching process, the Census Bureau developed undercount factors for 1,392 groups based on census division, type of place of residence, tenure of residence, race, ethnicity, gender, and age. Decision at 2-13. Using an intricate combination of statistical models, the Bureau then drew inferences about the number of people missed by the census and their location. The Secretary's ultimate decision not to adjust the census was based, in part, on the uncertain quality of the PES and the inferences drawn from it.⁴

The second population measurement, demographic analysis, takes information from administrative records (previous censuses, birth and death certificates, and immigration and emigration forms) to develop an independent estimate of the population at a *national level*. Historically, both this type of post-census research and surveys like the PES had been used only for evaluation purposes and to plan the next census rather than, as proposed here, for adjusting the most recent one. See Bryant Report at 5.

The official 1990 census of the resident population (the civilian plus U.S. Armed Services population living in the United States) counted 248.7 million people. The Census

⁴ The PES methodology attempts to count people twice, in selected areas, and then compares the results from one count and set of records (the census) with the results from the other count and set of records (the PES compiled by interviewers):

As a result, not only do the enumeration errors affect the quality of both sets of numbers, but the problems associated with matching records between the PES and the Census must also be taken into account; e.g. Do women match better than men?; Do matchers in Kansas City do a better job than those in Albany?; . . . Are there more people to match in Albany than in Kansas City?

McGehee Report at 10.

Bureau's estimates from its demographic analysis indicated a net undercount of about 4.7 million people, almost 1.9 percent of the total population. The Bureau's estimates from the PES initially suggested a net undercount of 5.3 million or 2.1 percent of the 1990 total population. Subsequent research and the discovery of a computer error, however, revised the PES undercount to just 1.6 percent of the population. *See* CRS Report at 11-12.

There is an obvious difficulty in using PES or DA-based data to "correct" any undercount in the 1990 census—the corrections suggested by each method are substantially different and, indeed, contradictory. A PES adjustment to the census would move many subpopulation totals in precisely the opposite direction of an adjustment based on demographic analysis:

- An adjustment based on the PES will add 180,318 non-black males age 19 while the DA suggests that 136,908 be deleted from the count.
- A PES adjustment will delete 91,631 males over the age of 65 while DA would add 192,950.
- An adjustment based on the PES will add 375,053 females age 10-19 while DA indicates that 7,141 should be deleted.
- While DA indicates that 146,255 females over the age of 45 should be added, the PES would delete 245,253 of them.
- An adjustment based on the PES would add 1,055,826 more females than would DA. If the demographic analysis were correct, and the enumeration adjusted, the official population would have a .82 percent overcount of females imbedded in it.

See Decision at 2-10, 2-12.

In his decision, the Secretary found another comparison disturbing: every group of black males (except those age

10-19) was substantially undercounted by the PES when compared with DA. Accordingly, the PES-based undercount rates are substantially smaller. An adjustment based solely on PES would add 804,233 black males to the population while, under demographic analysis, the number of black males that theoretically should be added to the population is 1.33 million. For black females, the PES adjustment would add 29,390 fewer people. Even assuming for purposes of argument that DA estimates are more precise, however, DA could not be used to add the people missed by the PES to the census count because there is no way to determine where—in what state or county or city—to locate them. *See id.*

Ultimately, Secretary Mosbacher decided that neither accuracy nor fairness—both vital to the credibility and effectiveness of the decennial census—would be enhanced by the application of either a PES- or DA-based adjustment:

[I]ncreased accuracy for census counts means not only increased accuracy in the *level* of the population, but also increased accuracy of the *distribution* of the population in states and localities. In particular, for the primary uses of the census—apportionment and redistricting—the share or fraction of the total population in a given state, city or precinct is critical. It is this fraction that determines political representation and the amount of Federal funds allocated across political jurisdictions. The paradox is that even if you improve the accuracy in the *level* of the population in any given city by adding at least some of the people missed in the census, you do not necessarily improve and can worsen accuracy in the *share* of the population in that city.

Id. at 2-11 (emphasis in the original).

Although the 1990 census may have undercounted several million Americans, no one can say with any confidence where those people are. The PES did *not* sample individual states or counties or cities. Without that infor-

mation, statistical surveys provide little reliable information to adjust the census fairly to reduce the impact of under-enumeration, or other sampling errors, at the national, state or local level.

After his July 15, 1991 decision, the Secretary testified at several congressional hearings that there simply was insufficient statistical precision in the adjusted counts to warrant their use instead of the original enumeration. That was at the heart of his decision. There was expert consensus, the Secretary said, that the adjusted numbers were less accurate on the block level. Even at the state level, moreover, there was uncertainty about which was more accurate, the original census or the adjusted counts. Referring to the people missed by the census, Secretary Mosbacher noted that the "implicit assumption" in adjusting the count is that "they are spread over the country in the same way as the post-adjustment population." Yet, he said, that "assumption has no empirical foundation." *Id.*

The Census Bureau analysts essentially concentrated on whether there was sufficient information to reduce the error in the numeric counts—without regard to whether that increased or decreased the severity of differential undercounts across geographical areas. "That is," the Secretary said, "they interpreted accuracy as concerned with getting the number of people closer to the truth rather than getting the allocation of the population for the purposes of political representation and funding closer to the truth." *Id.* at 2-24. The adjusted counts were less accurate than the enumeration, the Secretary concluded, and distributive accuracy would actually be impaired if the census were adjusted:

[T]he Constitutional and legal purposes for the census must take precedence, and accuracy should be defined in terms of getting the proportional distribution of the population right among geographical and political units. This argues for putting aside the judgment of accuracy based on getting absolute num-

bers right (numeric accuracy) and instead focusing on the question of whether there is convincing evidence that the accuracy of the population distribution in the adjusted numbers (distributive accuracy) is superior to the distributive accuracy of the actual enumeration.

Decision at 2-25. Senator Kohl reiterated precisely that point in his statement to the Senate Committee on Governmental Affairs on November 13, 1991: “[T]he most important question is this, can we prove that adjusted Census numbers are more accurate than the original numbers? Unless that question can be answered with an unequivocal yes[,] it would be *irresponsible and unfair* to adjust the numbers.” (Emphasis added.) *Dividing The Dollars: Issues in Adjusting Decennial Counts and Inter-censal Estimates for Funds Distribution, Hearing Before the Subcomm. on Government Information and Regulation of the Senate Comm. on Governmental Affairs, 102d Cong., 2d Sess. 20 (1992)* (statement of Sen. Kohl).

At a minimum, the first guideline adopted by the Department of Commerce for the census establishes a rebuttable presumption that the unadjusted census figures provide the most accurate count. The burden of proof falls on the proponents of “adjustment” to demonstrate otherwise.

The Census shall be considered the most accurate count of the population of the United States, at the national, State and local level, unless an adjusted count is shown to be more accurate.

Decision at 2-5. The mandate of this guideline is unambiguous. In the absence of evidence establishing that adjusted estimates are more accurate than the census—at the national, state and local level both in relative and in absolute terms—the census counts are presumed more accurate. The Secretary of Commerce found that evidence wanting or unavailable in 1991, and it remains so today.

In affirming Secretary Mosbacher's decision not to adjust the 1990 Census, Judge McLaughlin emphasized the importance of distributive fairness:

The Secretary's decision to focus on distributive, rather than numeric, accuracy was consonant with the constitutional goal of assuring the most accurate census practicable, given the census's function as a standard by which to distribute political representation and economic benefits. . . . [T]he Secretary's concern that "with respect to places under 100,000 population, there is no direct evidence that adjusted counts are more accurate" was legitimate, given Guideline One's requirement that the adjusted counts be shown to be more accurate at the local level. Decision at 2-30.

City of New York III, 822 F. Supp. at 924. The census is not an academic exercise, in other words, but a constitutional responsibility of the federal government that literally shapes the political and social structure of this country. Census decisions are reviewable in that context, whether under the APA or a more demanding standard, not as part of the search for statistical perfection.

B. Adjustment Produces More, Not Less, Uncertainty.

The procedures proposed to adjust the census are novel, experimental at best. See Decision at 1-7. "Such research deserves and requires careful professional scrutiny," Secretary Mosbacher concluded, "before it is used to affect the allocation of political representation." *Id.* State demographic officials responding to a 1991 poll on the adjustment issue overwhelmingly opposed adjustment. A smaller group of statisticians and demographers were evenly split on adjustment—for, against, and undecided—with one expert quoted as describing adjustment, candidly, as "a statistician's sandbox." *Adjustment Again? The Accuracy of the Census Bureau's Population Estimates and the Impact on State Funding*

Allocations, Hearing Before the Senate Comm. on Governmental Affairs, 102d Cong., 2d Sess. 3 (1992) (statement of Sen. Glenn).

Following the decision not to adjust the 1990 census, the Senate's Governmental Affairs Committee concluded that:

There is no new information to suggest that adjusting the census is any more accurate or feasible now than it was last July [1991]. Since then we have discovered that the adjusted numbers published at that time were incorrect. Thus we conclude that accurately adjusting the census to correct for the undercount is not possible.

. . . .

In sum, the post-enumeration survey should be viewed as a major experiment in understanding the characteristics and geographic distribution of persons missed in the census. That experiment should be evaluated in an effort to reduce the undercount in the 2000 census. . . . [T]he time available in 1990 was insufficient to both develop the adjustment model and carry out the complicated procedures required by that model. Rather than lock onto a model that is inherently flawed, the PES can be used to develop models for future use that are more robust and less sensitive to minor changes in assumptions.

Dividing The Dollars: Issues in Adjusting Decennial Counts and Intercensal Estimates for Funds Distribution, Report Prepared by the Subcomm. on Government Information and Regulation of the Senate Comm. on Governmental Affairs, 102d Cong., 2d Sess. 3 (1992). J. Michael McGehee, a member of the Advisory Panel, explained in his report that the problem with statistical census adjustments was that the verification of results had proven that "adjustment formulas were highly inaccurate. Twenty-six Census Bureau studies of the Post Enumeration Survey . . . and Demographic Analysis . . .

which form the Dual System Estimate (DSE) methodology[,] have shown that they are no more accurate than current Census practices.” See McGehee Report at 2.

In concluding that the 1990 census should not be adjusted, the Secretary considered the shortcomings generally inherent in statistical formulations—that any statistical formula attempting to establish precise populations would be based on assumptions, assumptions that are subjectively chosen and weighed, assumptions that might be wrong. In addition, the Secretary considered the fact that adjusted numbers are no more than estimates and—unlike the enumeration, which is based on an actual count—entirely the product of statistical inferences with no correspondingly direct basis in reality.

Since statistical assumptions are the foundation upon which confidence in the “final” adjustment rests “[a] politically ‘better’ count cannot be defended if it is shown that the assumptions on which it rests are changeable.” *Id.* at 6. Even small changes in statistical models result in different population estimates. Consider the results of two adjustment processes released by the Census Bureau on June 13, 1991. Although the technical differences between them were minor, the differences in results were substantial and, in terms of apportionment and equal representation, extraordinary.

Under one plan, two seats in the House of Representatives moved while under the other method only one seat moved. See Decision at 1-5. Similarly, one expert found that among five reasonable alternative methods of adjustment, none of the resulting apportionments of the House of Representatives were the same, and 11 different states either lost or gained a seat in at least one of the five models. *Id.* at 1-5 - 1-6. In view of these facts, Secretary Mosbacher found it unsettling that a subjective choice of statistical methodology can create such a dramatic practical difference in apportionment. *Id.* at 1-6.

The only acceptable rationale for a decision to adjust the census would be to correct a demonstrable inequity. No inequity can be corrected, however, unless the statistical quality of the numbers can be assured. That is not possible with respect to the 1990 adjustment because those numbers rely on statistical methods that are untested, unstable and unverifiable. Dr. Michael R. Darby, then Under Secretary of Economic and Statistical Affairs and one of the Advisory Panel members, summarized the decision not to adjust in familiar terms:

[M]y conclusion was that it certainly was not proven that the adjustment would improve the accuracy, and it may well worsen the accuracy and treat people less fairly.

. . . .

If we miss four million people and we don't know where they live, putting them into some other block than where they live doesn't really help them or help fairness. Some people get too much and other people still get too little, and it can make things worse.

Review and Evaluation of Secretary Mosbacher's Decision on the 1990 Census Adjustment, Hearing Before the Subcomm. on Government Information and Regulation of the Senate Comm. on Governmental Affairs, 102d Cong., 1st Sess. 9-10 (1991) (statement of Dr. Darby).

II. ADJUSTMENT WOULD DISCOURAGE CITIZEN PARTICIPATION IN THE CENSUS AND ENCOURAGE THE POLITICIZATION OF THE CENSUS.

The success of the 1990 census, based on a mail out/mail back format, depended on the widespread and voluntary participation of the people. See *Baldridge v. Shapiro*, 455 U.S. 345, 354 (1982). The most accurate method for locating and counting the people of the United States is to ask each household to submit information about the number of people living there. When people fail to submit the requested information, the Census Bu-

reau must send enumerators (field workers) to canvass neighborhoods house-to-house to learn how many people live in each one. Data collected by enumerators can never be as accurate as data submitted voluntarily. *See* U.S. GENERAL ACCOUNTING OFFICE, DECENNIAL CENSUS: 1990 RESULTS SHOW NEED FOR FUNDAMENTAL REFORM 3 (1992) (the "GAO Report"). As voluntary participation in the census declines, there is necessarily greater dependence on data collected by enumerators. The more data enumerators have to collect, however, the more likely they are to miss and miscount people, and the more inaccurate the census becomes.⁵ *Id.* at 47. Accordingly, the GAO concluded, "[a] high level of public cooperation is the key to obtaining accurate data at a reasonable cost." *Id.* at 35.

A Any Statistical Adjustment Would Lead To Declining Participation In The Census.

The Secretary decided not to adjust the 1990 census based, in part, on his concern about the effect an adjustment would have on future census participation:

[A]n adjustment would remove the incentive of states and localities to join in the effort to get a full and complete count. The Census Bureau relies heavily on the active support of state and local leaders to encourage census participation in their communities. Because census counts are the basis for political representation and federal funding allocations, communities have a vital interest in achieving the highest possible participation rates. If civic leaders and local

⁵ Low participation leads to increased costs as well as errors. Voluntary participation by mail in the 1990 census was lower than in previous censuses and, as a result, the Census Bureau had to hire over 300,000 enumerators. *See* GAO Report at 45. That follow-up is expensive: in constant dollars, the Census Bureau spent 65 percent more on the 1990 census than on the 1980 census. *Id.* at 4. The increasing costs of the census are due, at least in part, to declining participation. *Id.* at 24.

officials believe that an adjustment will rectify failures in the census, they will be hard pressed to justify putting census outreach programs above the many other needs clamoring for their limited resources.

Decision at 1-6 - 1-7.

Currently, it is in the interests of every governor, mayor, and interest group to help get their target populations counted. . . . The[ir] efforts include mapping, address compilation, massive advertising campaigns, and public awareness activities . . . [that] are absolutely critical to the Census Bureau's mission to conduct an actual enumeration. . . . [A]n adjustment would remove the incentive that these public officials and groups currently have to provide active support in achieving a complete count.

Id. at 2-59. "Without the partnership of states and cities in creating public awareness and a sense of involvement in the census," the Secretary concluded, "the result is likely to be a further decline in participation." *Id.* at 1-7.

The 1990 census provides a stark example of how adjustment would penalize a high rate of census participation. Prior to the census, Wisconsin undertook a state-wide public awareness campaign and targeted outreach program that resulted in the highest census participation of any state. The state's efforts included a matching grant program aimed at traditionally undercounted groups. See Nancy Hurley, *Winding Up Wisconsin's Census Efforts*, WISCONSIN COUNTIES, Dec. 1990, p. 36 ("Hurley"). To qualify for grants, municipalities submitted proposals targeting "hard-to-enumerate" groups including racial and ethnic minorities, people with limited English-speaking ability, the homeless, migrant workers, homebound individuals, students and people living in public housing or other concentrations of rental units. See *Wisconsin's Census Awareness Campaign*, THE 1990 CENSUS, A WISCONSIN HANDBOOK, p. 17.

As a result, Wisconsin had the highest voluntary census mail response rate in the country: 75 percent of the Wisconsin households that received a census questionnaire in the mail completed and returned the form, compared with about 64 percent nationwide. *See Hurley* at 36. Yet despite that accomplishment, formally recognized by the Census Bureau, the state stands to lose a seat in the House of Representatives and a portion of its share of federal funds if the census is adjusted. *City of New York*, 34 F.3d at 1122. The state would suffer that loss precisely *because* of its relatively low estimated undercount compared with other states. Faced with this example, how many state and local officials will choose to allocate their declining resources to programs designed to encourage participation in the next census?

The Census Bureau can estimate how many people were missed or erroneously included in the census, but it has no way of knowing where those people actually live. Accordingly, local officials in many census subdivisions will have even less reason to encourage citizen participation because it would reduce the high error rates that the adjustment process otherwise would “assume” affected their counts. Those error rates would lead to a higher estimated population under an adjusted census and, thus, a greater share of political representation and federal funds.

The statistical adjustment rejected by the Secretary uses sampling methods to assign people, assumed erroneously included or omitted from the census, to specific geographic areas. That process is based on the known error rate in counting similar people in similar communities within the same census division, though not necessarily the same state. Thus, an area with particularly high error rates will drive up the error rates imputed to all of the communities within the same census division. Since the census results for those communities would then be adjusted to show additional people, com-

munity leaders would be foolish to risk greater political representation and federal funding by encouraging the very participation that will reduce the error rates.

Adjustment also threatens public confidence in the census, adversely affecting citizen participation. The public no doubt will question why the government spent \$2.6 billion to conduct a head count that produced results inaccurate enough to require "adjustment" by a statistical formula. Adjustment necessarily implies that the census itself is significantly flawed, that the federal government has unwisely spent tax dollars, and that there is no need to be counted voluntarily because statisticians eventually will "count" everyone even if they choose not to participate in the census. Ultimately, the reduced accuracy and diminished integrity of the census will erode public confidence in government, lead to lower citizen participation and, in turn, to a further decline in census accuracy and to doubling the cost of the next decennial census.⁶

B. Statistical Adjustment Would Permit Political Manipulation.

Another concern raised by the Secretary was the possibility of political manipulation. Any adjustment methodology selected by the Census Bureau involves a number of subjective assumptions. As the assumptions vary, the results vary:

[T]he choice of the adjustment method selected by Bureau officials can make a difference in apportionment, and the political outcome of that choice can be known in advance. I am confident that political considerations played no role in the Census Bu-

⁶ If the trend in public cooperation continues, the national mail response rate could be as low as 55 percent in the year 2000. This would generate a corresponding increase in the Census Bureau's workload of nearly 50 million cases. Under this scenario, the Bureau's planning staff has estimated, the 2000 census could cost \$4.8 billion in current dollars. See GAO Report at 41.

reau's choice of an adjustment model for the 1990 census. I am deeply concerned, however, that adjustment would open the door to political tampering with the census in the future.

Decision at 1-6. Depending on the assumptions in a particular statistical model, the resulting adjustment will literally move Congressional seats from one state to another:

Adjustment of census numbers, as it is devised at this point, is unfortunately subject to not only the charge but the actual fact of political manipulation. . . . The present adjustment process is subject to many "inside" assumptions and innumerable decisions by individuals about where to draw the sample, how to determine the various strata, what mathematical formulae to use, to name only a few of the important decisions. *It is certainly not hard to imagine that such a process, especially when cloaked in the mysteries of statistical complexity, could easily be corrupted and manipulated, particularly if it should become accepted practice and not subject to rigorous public examination, as is the case for the present decision.* (Emphasis in original.)

V. LANCE TARRANCE, JR., REPORT TO THE SECRETARY OF COMMERCE 29 (1991).

No individual can affect the outcome of the census enumeration, nor could the federal government directly manipulate adjusted census counts for political gain. "By contrast, a statistical adjustment of the census involves discretion in the selection of methods that can produce a wide variety of results. This permits government officials to know the political outcome of the chosen method in advance." MICHAEL R. DARBY, RECOMMENDATION TO THE SECRETARY ON THE ISSUE OF WHETHER OR NOT TO ADJUST THE 1990 DECENNIAL CENSUS, E-1 (1991). The concerns expressed by these and other experts justify the Secretary's decision. Rather than embark on a path

of unknown political possibilities with adjustment, he determined that the federal government's efforts and resources would be better spent developing a census-taking procedure that would reduce the problem of differential undercounts.

III. THE RELIEF GRANTED IN THIS CASE, IF ANY, SHOULD BE PROSPECTIVE.

This Court should reverse the court of appeals and remand the case to be dismissed with prejudice. If this Court nevertheless affirms the court of appeals' decision, any relief granted here or, on remand, by the district court, should be prospective. Indeed, any relief granted should be effective with the year 2000 census.

A retrospective adjustment of the 1990 census would disrupt program allocations and program planning for many states—at both the state and local level. State, county and municipal agencies use decennial census data for the planning and management of health and human service programs as well as for other “need” and “population” based programs. Political districting and political representation at the state and local levels have already been put in place based on the 1990 census data.

Many states, including Wisconsin and Pennsylvania, have allocated funds based on the 1990 census data. To change the base of the census numbers in mid-decade would significantly disrupt the delivery of social services, particularly in those states that would lose a substantial amount of federal funds. Litigation soon would follow, no doubt, to recover funds “overpaid” since 1991. Using the General Accounting Office's estimates of fiscal impact, for instance, Pennsylvania would lose \$40 million and Wisconsin \$15 million in federal funds annually if the census were adjusted. Shifting millions of dollars in federal aid from states that have relied on the 1990 census figures, when the Census Bureau itself concedes that sta-

tistical adjustment would not accurately reflect populations at subnational levels, would be imprudent and harsh.

The political impact would, if anything, be even more draconian. Testifying against adjustment before a Senate subcommittee, Wisconsin's Attorney General explained that the proposed "adjustment would unduly disrupt and delay the established political process":

An adjusted census would require my State and other States to scrap that [local and state redistricting] process and start over with different population data. Such a change would result in confusion and delay for Congressional, State, county, city, town and village redistricting across the country. Indeed, we would run the risk of not completing our reapportionment work on time for the next election.

The Case Against Adjustment: The 1990 Census, Hearing Before the Subcomm. on Government Information and Regulation of the Senate Comm. on Governmental Affairs, 102d Cong., 1st Sess. 4 (1991) (statement of James Doyle, Attorney General, Wisconsin). And that was four years ago.

The reapportionment, by every state legislature, of their own legislative districts and every state's Congressional districts inevitably spawned an avalanche of federal court cases that only now are reaching this Court. *See, e.g., Miller v. Johnson, — U.S. —, 115 S. Ct. — (1995)*. Those disputes, whatever the issues and whatever the outcome, have assumed the constitutional accuracy of the 1990 census. To permit the district court even to consider, on remand, the possibility of retrospective relief would create a political and judicial nightmare.

The Census Bureau conceived the PES to help it do a better job of counting the people of America. The Bureau already has incorporated the results of the PES and its other post-census surveys into the planning for the year 2000 census. In fact, the next census may be

remarkably different than the 1990 census in concept and in methodology. Any relief granted the respondents in this case similarly should be directed to making the next census better and not to revisiting the last census—with all of the problems that would entail.

CONCLUSION

The apportionment of seats for the House of Representatives is done by “equal proportions,” and redistricting within the states and the allocation of federal funds all rest on distributing the population into areas that are approximately equal. Accuracy for the decennial census requires the most accurate *proportional* distribution of the population across the country. Placing greater importance on distributive rather than numeric accuracy, the Secretary of Commerce correctly concluded that the “adjusted” data became less reliable below the national level, and the census numbers became more reliable. Accordingly, for the constitutionally mandated purposes of the census, the adjusted numbers are not only less accurate but less fair than the actual census count.

For these reasons, this Court should reverse the decision of the court of appeals.

Respectfully submitted,

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Mr. CLINGER. Senator, we thank you very much for coming over and testifying, and we understand you do have pressing appointments. I might just say to you that, as the Representative from Pennsylvania, who would have also been adversely affected by what was proposed in the 1990 census, I share your concerns about some of the issues that you raise. But we thank you very much, again, for your testimony.

Senator KOHL. Thank you.

Mr. CLINGER. Congressman Sawyer.

Mr. SAWYER. Thank you, Mr. Chairman. I am pleased to be here with you. And thank you very much and the full committee for this hearing. I particularly want to thank Congressman Zeliff for allowing me to take part in the hearing of the subcommittee that took place last fall, and I want to thank you for inviting our colleagues who join me at the table.

I have more testimony here than you want to hear, so I'm going to try to summarize it as much as I can. But let me say that the topics that have been raised to this point, I think, really come to the core of what we're talking about. We are talking about accuracy; we are talking about cost; and we are talking about confidence. Those three factors interplay with one another in a way that makes them inextricable from one another.

I also want to say that, as I suspect you know, the questions surrounding the census can take on partisan content, but they are not partisan at their base. They are questions of doing the best job that we can for the Nation. I come here not really as an apologist for the Bureau or as a member advocating full funding for a preferred agency. But I do believe, as I hope we all do, that an improved census can yield measurable benefits in terms of policy and funding distribution for our Nation at a time of extraordinary change.

The 2000 census will attempt to count something close to 120 million households and over 260 million people. Yesterday, the Bureau began the process of shifting from planning to implementation. I am told that most of the new procedures that were tried in the 1995 test census worked.

I am particularly pleased at the kind of work that Governor Ridge and I did on the subcommittee, in terms of the recommendations that came from the National Academy of Sciences that were a part of that test. Both of these are good developments, because the decisions made over the next 12 months will largely determine the success or failure of the dress rehearsal in 1997 and the success of 2000 itself.

Tim Petri and I did work that I like to think will help improve the address lists that are a part of the census, to work with the Postal Service in a Federal, State, and local partnership that will be extremely important to the success of the census. The local update of census addresses will be an integral part of planning and implementation, and I hope it will alleviate some of the concerns of local government over the abandonment of the old precensus and postcensus local review. I am hopeful that the final boundary review may also help that.

The Bureau is facing a new phenomenon. Well, it's not entirely new, but it's one that will be more intense than they have ever encountered before. The folks who usually participate in the census

are going to be relatively small in number in 2000. Two-income families, a reduction in the crop of recent graduates, a reduction in the number of homemakers in the country, and the fact that the boomers will not yet have hit retirement will mean that 2000 will engage with a very large force of largely part-time workers. That may well force the Bureau to hire more workers at higher wage rates to do the same amount of work.

So it is particularly encouraging that the Bureau seems to be treating the census more than ever like a direct mail campaign, with advance notice letters, and reminder post cards, and replacement questionnaires, and continuing work on redesigning forms that will, I hope, offer a significant improvement over 1990.

Clearly, the primary goal, or at least one primary goal, of the Congress and the Bureau is to avoid the differential undercount that everyone has mentioned so far. I won't go into the long history of litigation. But, clearly reducing cost is every bit as important as reducing the differential. And I applaud the Bureau's recognition of this. I understand their efforts to reduce risk factors while cutting costs is difficult, but I think it's enormously important.

I am concerned that some of the new methodologies and strategies may raise new concerns. I just want to lay out a couple of those that have some of that potential, if I could. First of all, let me touch on the use of administrative records. The Bureau plans to test, in the year 2000, the degree to which future censuses can make use of administrative records.

There are clear privacy issues that are a part of that. There may be methodological difficulties. And there is the simple fact that many records are not stored in a format that allows them to be easily transferred for census purposes. Yet I think it's extremely important that that test go on. If we continue to plan with a 10-year horizon and we do not use each succeeding census as a potential live test bed for the technologies and techniques that may be useful in future censuses, we will waste an enormous opportunity.

The chances for duplication are real, not because of fraud, but just because of the attempt to make sure that everyone is counted, and the use and wide availability of multiple forms raises concerns about double counting. I think they are ultimately answerable, but I think it's important to ensure that safeguards are undertaken.

Let me talk very briefly about nonresponse follow-up and the increased use of statistical methods in that process. The Bureau proposes to use 1 in 10 sampling to complete the final 10 percent of nonresponse follow-up. It is true, as we have heard and I suspect we will hear, that the use of statistical methods—in fact, even the use of the word “statistics,” by itself, often invites criticism, unless adequate testing and evaluation are conducted.

I believe that sampling can and perhaps must be an integral part of improving the accuracy of the fundamental enumeration that is at the heart of the census, and it can certainly help to reduce costs. I share the Bureau's assessment, though, that the transition from full to sample nonresponse follow-up will be difficult to control, logistically.

Let me touch on something that involved a lot of controversy in 1990, and that's the use of the long form and the degree to which it was often confused with the short form, when the short form ap-

peared to be as long as it did. The Bureau has expressed the intent to hold the long form distribution to the smallest possible sample of households. I understand that it's the same 17 percent sample that they used in 1990.

The concern I have is that, if the sample is as small as it can be, then the use of statistical methods in the completion of nonresponse follow-up is heightened. Long form data is important. It is used for a wide array of applications for economic and societal modeling, for the uses of the private sector and local governments. A suspect result runs the risk of compromising expert and public confidence in those numbers that the Nation needs to make a myriad of decisions in long-term planning.

There may be some increased sampling error, and the Bureau recognizes it, but there will be a reduction in the concerns about quality that take place when the returns of forms are removed in time from the census day itself. Both have the tendency to undermine the full measure of confidence, and there are tradeoffs in the use of that kind of statistical method. I think the Bureau needs to work to limit any potential loss in the quality of data.

Let me touch on the planned investment in the evaluation of the 2000 census for 2010 and beyond. This, coupled with the end of follow-on surveys, I believe, will hamstring recent efforts to keep the Bureau's data base as current as possible in an era of enormous change. It may well be that the characteristic that is most important to measure is change itself.

I know the Bureau recognizes those shortcomings, and I also know that they made decisions to limit those efforts for budgetary reasons. Indeed, most, if not all, of the concerns I have expressed are the direct result of planning decisions made with the bottom line very much in mind. So while I recognize, Mr. Chairman, that this is not the Appropriations Committee, let me conclude with a modest appeal for adequate Bureau funding.

As we have heard, every census since 1940 has been more expensive than its predecessor. But the Bureau's funding is perhaps unique among Federal agencies in its cyclical nature. Even with the most efficient and effective census operation possible, Congress still has to plan for a multi-billion-dollar appropriation only 3 years after it spent only millions on the same activity. What this really requires is a 10-year funding cycle that is carefully planned and perhaps even more carefully executed.

In order to approach that kind of efficiency, it is clear that the Bureau needs to invest first in order to save money in the future. This is probably most clearly seen in the comparative costs of conducting a replica of 1990 as opposed to following a more state-of-the-art approach, as you mentioned in your opening statement, Mr. Chairman. Those numbers that you suggest, I think, are absolutely correct. It comes down to a question of pay me now or pay me later, penny-wise and pound foolish, and all of those other cliches that we are so used to using in this body.

Mr. Chairman, I appreciate the time you have taken on this hearing. I appreciate your latitude in the time that you have given me. And I hope that, from time to time, I will be able to join you and participate in the work that you do ahead.

[The prepared statement of Hon. Thomas Sawyer follows:]

PREPARED STATEMENT OF HON. THOMAS SAWYER, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF OHIO

I greatly appreciate the opportunity to appear here today. In a real sense, this is a continuation of the work that I began with Tom Ridge, Tom Petri and others in previous Congresses as we looked at improving and evaluating the 1990 Census and the beginnings of planning for 2000. (This is a bit like old home week for the Members of Congress who have focused on the Census.)

As this indicates, views on census issues do not necessarily break down along partisan lines. I opposed the Bush Administration on adjustment, but worked with a Republican Bureau Director (Barbara Bryant) who shared my view. Recently, I have found myself at odds with the current Democratic Administration on the same issue when the 1990 Census adjustment case went to the Supreme Court.

I should also mention that I am a strong supporter of the Coalition Budget. I understand the need to set fiscal priorities. I am also committed to the notion that an accurate picture of the nation as we head into 21st century is critical to the process of setting those priorities.

I say all this to underscore the fact that I am not here as an apologist for the Bureau or as a Member advocating full funding for a preferred agency. I simply believe that an improved census can yield real policy and funding benefits for our nation.

The Bureau's task

The 2000 Census effort will involve an estimated 118.6 million households, containing over a quarter of a million people. Yesterday, the Bureau began the process of shifting from planning to implementation. I have been told that most of the new procedures tried in the 1995 Test Census surveys worked. I am pleased that the Bureau has incorporated many of the recommendations that the National Academy of Sciences made pursuant to Public Law 102-135, of which Governor Ridge and I were original sponsors. Both are good developments, because the decisions that must be made over the next 12 months will largely determine the success or failure of the "dress rehearsal" in 1997 and the entire Census 2000 effort.

In 1994, Tom Petri and I introduced the Address List Improvement Act to help prevent undercounting by allowing local governments to help improve the core Address List. Working with the Postal Service, this type of federal-state-local partnership will be extremely important to the success of the census. The Local Update of Census Addresses (LUCA) program will be an integral part of effective planning and implementation. But more importantly, a successful LUCA effort will alleviate the concerns of local governments over the abandonment of the old precensus and postcensus local review. The Final Boundary Review operation may also help that.

The Bureau is also facing a new phenomenon in its temporary workforce. The groups who have traditionally become enumerators are relatively small in number. The need for two incomes has dramatically reduced the number of homemakers in the country. In 2000, the crop of recent graduates—another source of temporary employees for the Bureau—will be members of the relatively small "Baby Bust" generation. And the Boomers will not have hit retirement yet. This means that enumerators in 2000 will be largely part-time workers, forcing the Bureau to hire more workers at higher wage rates to do the same amount of work.

And so, I am pleased that the Bureau seems to be treating the Census for what it is at its core—a direct mail campaign. They will send an advance notice letter and a reminder postcard to each address, and a replacement questionnaire to missed households, if necessary. I also understand that the newly-redesigned forms are a significant improvement—the product of the best minds in form design in the public and private sectors.

Clearly, the primary goal of Congress and the Bureau is to avoid the differential undercount inherent in the 1990 Census and the litigation that has attended it. But, given the short- and long-term budgetary outlook, reducing cost is as crucial as reducing the differential.

I applaud the Bureau's recognition of this. And I understand Bureau's efforts to reduce risk factors while cutting costs. But I am concerned that some of the new methodologies and strategies will raise new ones. I want to just quickly lay out areas I see the potential for problems.

Use of Administrative Records

The Bureau plans to conduct a test in 2000 to determine whether future censuses can be conducted entirely through the use of administrative records, as is done in some other countries. There are clear privacy issues raised whenever there is exchange of information that is tied to individuals. However, I believe that methodological difficulties may prove even more problematic. The simple fact is that

many records are not stored in a format that allows them to be easily transferred for use in the census.

Duplication

In an effort to ensure that everyone gets at least one chance to be counted, the Bureau intends to make additional census forms available in public areas, such as post offices, libraries and some commercial sites, such as food stores. The chances for duplication will increase significantly because of this—not because of fraud, but because Mr. Jones may fill out a form he picks up at the Post Office, unaware that Mrs. Jones has already mailed in the family's questionnaire.

To a lesser extent, distribution of two forms in Spanish-speaking areas and follow up forms for non-respondents also raise concerns about double counting. I think they are ultimately answerable, but we must ensure that adequate safeguards are undertaken.

Non-Response Follow-up—Increased Use of Statistical Methods

A principal concern of many members of the statistical community is the Bureau's proposal to use one-in-ten sampling to complete the final 10% of non-response follow-up. The use of statistical methods will inevitably invite the criticism of experts and the public unless adequate testing and evaluation are conducted.

However, I do believe the sampling can be an integral part of improving the accuracy of the census, and can certainly help to reduce costs. However, I share the Bureau's assessment that the "transition from full to sample NRFU will be difficult to control logistically."

Long Form ("Sample Form")

I am also concerned about the Bureau's statement that it plans to hold long form ("Sample Form") distribution to "smallest possible sample of households" ("The Reengineered 2000 Census" packet). From what I understand, the 17% sample they intend to target is equal to the sufficient 17% sample conducted in 1990.

If, however, the sample is as small as it can be, I have increased concerns about the use of statistical methods in the completion of non-response follow-up the final 10% of households. Long-form data is used for a wide array of applications. It forms the basis of important economic and societal models. The private-sector uses the data for broadly public goods—where to place a 500-job factory, for instance. And local governments—the largest non-federal user of census—use that information to plan traffic patterns, locate schools and do critical urban planning.

A suspect result will compromise expert and public confidence in these numbers that the nation needs to make myriad decisions on long-term planning. The Bureau recognizes this. But while there may be some increased sampling error, there will be a reduction in the concerns about quality that mount when responses are received farther and farther away from Census Day. Clearly, there are trade-offs in the use of statistical methods. The Bureau must work to limit any potential loss in the quality of the data.

Evaluation

There is a profound potential problem in the lack of planned investment in evaluation of the 2000 Census for 2010 and beyond. This, coupled with the end of follow-on surveys (except those that are paid for by outside sources) will hamstring recent efforts to keep the Bureau's data base as current as possible after the census year.

I know that the Bureau recognizes these shortcomings. I also know that they made these decisions for budgetary reasons. Indeed, most—if not all—of the concerns I have expressed are the direct result of planning decisions made with the bottom line very much in mind.

So, while I recognize this is not the Appropriations Committee, I would like to conclude with a modest appeal for adequate Bureau funding.

As you know, Mr. Chairman, each census since 1940 has been more expensive than its predecessor. And the Bureau's funding is unique among federal agencies in its cyclical nature. Even with the most efficient, effective census operation possible, Congress would still have to plan for a multi-billion dollar appropriation three years after it had spent only millions on the same activity.

In order to approach that kind of efficiency, the Bureau needs to invest first in order to save money in the future. This is most clearly seen in the comparative costs of conducting a replica of 1990 as opposed to following a more state-of-the-art approach. It would cost about \$4.8 Billion to replicate the flawed design of 1990. The current projection for costs of the entire Census 2000 effort is \$3.9 Billion, with \$2.5 Billion needed in FY2000.

Cliches are the life blood of Congress, Mr. Chairman, and I certainly don't want to perpetuate that trend. But skimping on funding for research, testing and evalua-

tion of census methodology is truly "penny-wise and pound foolish." There is a very direct link between cutbacks now and increased costs in the out years.

By now, Mr. Chairman, you must be beginning to understand why the census used to have its own subcommittee. However, as I have probably demonstrated here today, I have a real interest in this subject. Again, I appreciate the opportunity to testify today, and I would welcome the opportunity to participate in the Committee's work in the future.

Mr. CLINGER. Thank you very much, Congressman Sawyer, for your very thoughtful and very thorough, I think, review of the issues that are involved.

Mr. SAWYER. Thank you.

Mr. CLINGER. We appreciate your appearance here this morning, Congressman Petri.

Mr. PETRI. Thank you very much. Mr. Chairman, I want to commend you and the members of your committee for scheduling this hearing.

There is really probably no more important subject to get right for this Congress. If you get it right, it will be very uncontroversial and no one will notice. If you don't get it right, it's going to become an increasingly nettlesome problem.

The census drives a lot of decisions in our country and undergirds how we define ourselves as a country, as well. So the decisions that are made on how the census is conducted are tremendously important, much more important than might appear on first blush, and much more dramatic and exciting. It's not dull statistics, really; it's a very live and dynamic process, and it's important to look at it thoroughly.

A few points I would just like to make, based on the work that Tom Sawyer and I did in the previous Congress and hearings that he scheduled over the several years that we worked on this, were that, in my opinion, as we approach Census 2000, I think it's important, first of all, that we maintain the integrity of census figures. We should strive for as accurate a head count as possible. We should not massage or adjust the final numbers to take into account estimated undercounts, as to do so undermines the integrity and, in many instances, the practical utility of census figures.

If we feel there is the danger of an undercount in a particular population, we should focus more resources on efforts to accomplish as complete a head count as possible of that population. We should not take the quick, easy, cheap and, in my opinion, wrong course of just adjusting the figures for what we think might be out there. When considering any probable undercounting in the past, it's important that we not simply throw up our hands and declare that we can't do this accurately, and rely on guesswork, even scientific guesswork.

As many of the members of this committee are aware, I believe that sampling techniques should be used only for guidance in conducting the census and not for adjusting the final numbers. To rely on sampling rather the final census count would be comparable to changing election returns if they are at variance with public opinion polls.

Since estimation techniques become less reliable the smaller the population unit, even if we adjust the numbers for State totals and for large cities, the actual head count data is needed on the school district and the precinct level, for example.

If we boost the numbers for the city of Los Angeles, to pick an illustration, based on a sampling, when it comes time to allocate education assistance based on population, in which school districts do we assume the undercounted people live? Where are those lines? How is the State legislature going to make that determination? When the State legislature redistricts itself, how will it know which precincts contain the uncounted people?

It will not settle or end litigation; it will just add to litigation, because you will have a floating undercount estimated number added to the basic head count, which then will be allocated on a political basis and lead to endless litigation and uncertainty, meanwhile undermining the integrity of the whole process, increasing cynicism, and reducing participation in future censuses, in my opinion.

The Census Bureau's plan for Census 2000 contains a number of methods for encouraging response, such as working with the Postal Service to develop a comprehensive master address file and working with State, local, and tribal governments to a greater extent. I applaud these efforts, and I think making it as easy as possible for everyone to respond to the census is the way to go.

I think, also, in working with the Appropriations Committee and looking at the difference between—I think it's the 4.8 billion and the 3.9 billion figures—you ought to see how much of that difference is due to actual savings as a result of estimation and how much is due to everything else that they are planning on doing differently. It may be that that area of controversy is really not contributing the \$900 million of saving; it's a lot of the other techniques that are being used. And I think you should break that down very carefully as you go forward.

Another way to make the census more accurate would be to focus on the uncounted American taxpaying, voting citizens living abroad. They are not counted either. And this is a great injustice, just as undercount within the United States is an injustice. Right now we count those who are military or civilian employees of the government but not the retirees, the business people, and others who live overseas.

When the Constitution was written, there were virtually no American citizens living abroad other than diplomatic personnel. In this age of travel and global communications, there are several million who live outside our borders, who are citizens of this country and should enjoy the full rights of American citizenship, including being counted in the census.

We know, roughly, what the numbers are because of passports and visa statistics that are available at the State Department, and it seems to me that these people should enjoy the full rights of American citizenship, including being counted in the census. A greater effort should be made to send census forms to as many of these people as we can locate, at least on a trial basis in the year 2000. And if we do adjust, the adjustment should include these uncounted Americans as well as other groups.

On another topic, in hearings conducted after the 1990 census, a number of witnesses before Representative Sawyer's subcommittee recommended the question involving race or ethnicity should include the category "Multiracial." For example, our panel heard

compelling testimony of an African-American soldier who had an Asian-American wife and a son who doesn't fit perfectly into either category. The parents wondered why their son should have to choose between his parents in deciding what race he is, and I, frankly, didn't have a very good answer. That's a growing problem in our society.

Along these lines, since each individual can define himself or herself on this ethnicity or racial heritage question, it should be noted that we also heard from those who are thrown together in the Hispanic category, which is actually a United States category, even though people in that category often think of themselves as Chilean, or Argentinian, or Mexican, rather than as a "Hispanic." And some consideration, I think, should be given to those issues, as well.

In concluding, I would just like to urge the Census Bureau to put together the most accurate and cost-effective count possible based on a real head count. And I hope and trust that we will provide them with the resources necessary to do a first-rate job.

Thank you very much.

[The prepared statement of Hon. Thomas E. Petri follows:]

PREPARED STATEMENT OF HON. THOMAS E. PETRI, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF WISCONSIN

I want to thank Chairman Clinger and the committee for the opportunity to testify today. As you know, as the former ranking member of the Census Subcommittee of the now defunct Post Office and Civil Service Committee I continue to take a keen interest in census issues.

As we approach census 2000 I think it is important to learn from any problems in the 1990 count or any of those previous to that; however, when considering any probable under counting in the past, it is important that we not simply throw up our hands and declare that we can't do this accurately and rely on guess work—even scientific guess work.

As most of the members of the committee are aware, I believe that sampling techniques should be used only for guidance in conducting the census and not for adjusting the final numbers. To rely on sampling rather than the final census count would be comparable to changing election returns if they are at variance with public opinion polls.

Adjusting the census gets more difficult as the population unit gets smaller. Statisticians can estimate the population of New York City but the population of Markesan Wisconsin, for example, is too small for sampling to challenge the census numbers with any degree of scientific validity. If 5% of New York City citizens are not counted, a sampling might cause an upward adjustment of the numbers, maybe by more than 5% if the estimate is wrong, but if 5% of Markesan citizens are not counted we would likely never know it.

Since estimation techniques become less reliable the smaller the population unit, even if we adjust the numbers for state totals and for large cities, the census data is needed on the school district and precinct level as well. If we boost the numbers for the city of Los Angeles based on a sampling, when it comes time to allocate educational assistance based on population, in which school districts do we assume the undercounted people live? When the state legislature redistricts itself how will they know which precincts contain all of these uncounted people?

The census bureau's plan for census 2000 contains a number of methods for encouraging response such as working with the Postal Service to develop a comprehensive Master Address File and working with state, local and tribal governments to a greater extent. I applaud these efforts and I think making it as easy as possible for everyone to respond is the way to go.

Another way to make the census more accurate would be to include all those U.S. citizens living abroad, not just those who are military or civilian employees of the government. When the Constitution was written there were virtually no American citizens living abroad other than diplomatic personnel. In this age of travel and global communications, however, there are several million who live outside our borders who are citizens of this country and should enjoy the full rights of American

citizenship including being counted in the census. A greater effort could be made to send census forms to as many of these people as we can locate, at least on a trial basis in 2000.

On another topic, in hearings conducted after the 1990 census several witnesses commented that the question involving race or ethnicity should include the category "multi-racial". We heard compelling testimony from an African-American soldier who has an Asian-American wife and a son who does not fit perfectly into either category. He wondered why his son should have to choose between his parents to decide what race he is, and I didn't have a good answer for him.

Along these same lines, since each individual can define him or herself on this question, it should be noted that we also heard from those who are thrown together in the Hispanic category even though they think of themselves as Chilean or Argentine or Mexican rather than Hispanic.

In concluding my remarks I just want to commend the census bureau for its efforts in putting together the most accurate and cost efficient count possible.

Mr. CLINGER. Thank you, Congressman Petri for an excellent statement. We appreciate your testimony, as well, this morning.

We are now going to proceed under the 5-minute rule.

Let me ask you, first of all, Tom, Tim Petri mentioned the fact that the proposed adjustment exercise is sort of a crude element. It may be accurate in terms of getting a better overall count, but it is not sufficient in terms of determining things such as distribution of Federal funds, various elements that you really need a more precise kind of figure on. How would you address that? That seems to be a major concern here.

Mr. SAWYER. Mr. Chairman, the question of accuracy and precision is central to the issues that surround adjustment. I did not take a position on adjustment last time until quite late in the process and, frankly, would withhold any position-taking on that in the course of these mid-decade years at this point.

But there is a difference between accuracy and precision, and sometimes the most precise numbers are exactly that, they are precise, but they are precisely wrong. The question of how many people is one question of accuracy. Where they go, as Congressman Petri suggests, is enormously important.

The question that Senator Kohl raised, "How will we know when the census is error-free?" I can tell you right now, we will always know the answer to that question: the census will be wrong. The question is, how wrong it will be, and whether or not it is more or less equally wrong throughout the population or whether there are huge differential under- or overcounts among different segments of the population. And I think that is really at the heart of the question.

The controversy in 1990, I think, surrounded the questions of winners and losers of a postenumeration adjustment, but it's important to understand that, in the course of conduct of the census, there is an enormous amount of estimation that goes on, in any case, and has for a very long period of time. The practice of curbstoning, of simply doing the best you can of trying to find out who lives in there, when you can't get access to the household or people in it, results in an enormous amount of estimation.

Many of the kinds of internal adjustments that take place, I think, can substantially improve counts, even down to the smallest area, but they should not be done, I believe, on a large scale after the fact, after the process. And for that reason, I tend to think the direction that the Bureau is going in suggesting internal adjustments in the course of the conduct of the census, so that it can be

done in a more timely way; and therefore, not get the inaccuracies that result from forms returned weeks or sometimes months after the conduct of the count for the rest of the population.

Let me say one final thing. The very examples that you offered with regard to school funding distributions gets at the heart of one of the core difficulties. It doesn't have so much to do with adjustment of base numbers, but rather with, perhaps, as we suggested, the fundamental characteristic of our era, and that is change itself.

The dollars that were distributed in 1992, in the spring of 1992, in Title I dollars, actually reflected a count of the United States that was undertaken in 1980, reflecting the economy of 1979. Those figures were 13 years out of date by the time they were actually applied to the distribution of dollars. They were precise, but they were wrong, and they were wrong every year, in the course of their application, until the new numbers were available in 1993.

The ability to make adjustments over time, to be able to project change, more frequently will add to the fundamental accuracy of the numbers and the distribution of dollars. And the ability to use modern mapping techniques that are already in place, from the TIGER maps of 1990, to apply those numbers to much smaller areas, so that we're not talking about county-wide averages but being able to be much more precise and accurate with regard to individual school districts, will improve the distribution of dollars over the course of a decade.

I realize that that may, at some point, seem fairly technical, but it is at the heart, the big difference I see between precision and accuracy.

Mr. CLINGER. Thank you. You mentioned in your testimony that you applaud—I think we all applaud—the fact that the Census Bureau is really planning to use much more sophisticated techniques and moving more toward a mail order approach to try and elicit a greater response. And yet the estimates, as I understand it, are that, even using these more sophisticated techniques, we are still going to be struggling to get to the same level of response that we had in the 1990 census.

Where we had estimated that we would get, on the first blush, about a 70 percent return, it turned out to be about a 63 percent return. And we're now looking at spending more money, presumably, to do these more sophisticated techniques, only to reach the same level. What do you attribute that to? Either one of you.

Mr. SAWYER. Mr. Chairman, I think that the kinds of comments that Tim made are right on the mark. Some of it is simply cultural. It goes back to questions of broad confidence in the undertakings of government, in general. But I'm not sure that there are any singular, quick solutions, but I agree with you entirely that the stakes are too high not to make every effort to make it the most accurate census that we can.

Mr. CLINGER. Anything further on that?

Mr. PETRI. I would only add that we have some rights as citizens, and we have some responsibilities as citizens. And one of the responsibilities of citizenship is participating in the census. It seems to me that, if people choose not to exercise their responsibility or avoid, for private reasons, their responsibility, that's sort of their problem, at the end of the day.

We should make every effort that they are not neglected or that they are not missed because of some flaw in the government approach to the census, but, at the end of the day, you can lead a horse to water, but you can't make him drink. And if they choose not to participate, then that denies some resources to their area, and they suffer for it. And it seems to me that that's an appropriate sanction.

Mr. CLINGER. Thank you. My time has expired.

The gentleman from Wisconsin.

Mr. BARRETT. Thank you, Mr. Chairman. I appreciate your taking the time to hold these hearings. It certainly is a topic that I think all of us would prefer to have resolved before we go into the 2000 census rather than spend 6 or 7 years following the census litigating it.

I come from Wisconsin, as does Mr. Petri and Senator Kohl. As you can tell by our keen interest in this issue, the attitude that I think many Wisconsinites have on the attempts for the postcensus adjustment was that we got these beautiful awards from the Federal Government telling us what a great job we had done and how proud they were of us, and that they were going to take away millions of dollars and congressional seat as a result of the fine job that we did. You can imagine that that doesn't set too well in our home State.

My question, I guess, for both of you is, as we move to more of a sampling type approach, does this create more incentives for States to be more lax in the way that they treat this issue?

Mr. PETRI. I don't think there's any question of that. And I've been arguing not that they do use modern sampling techniques, but they be used in focusing resources. So if we need to have more enumerators, have a curbside follow-up in addition to a mail survey, and this sort of thing, in particular areas, fine. That seems to me an appropriate thing for us to do to overcome what could otherwise be an injustice due to an undercount.

But, at the end of the day, to just sort of take the quick, easy way of adjusting it, if people realized that, they might decide it would be to their benefit to discourage participation in the census and rely on an adjustment. It does cost. Milwaukee spent a lot of county and city resources, for example, to have as complete a count as possible. And they could be disadvantaged if they did that, because if the adjustment was done in any event, why should they spend any money at the local level to encourage compliance with the census procedure?

Mr. BARRETT. Mr. Sawyer.

Mr. SAWYER. I tend to agree almost entirely with my colleague's concerns and the ones that you suggest in your question. The nonresponse phenomenon, interestingly, seemed to have a bicoastal quality to it. And the response rates, particularly in the heartland, the kinds of places that both of you represent, that the chairman and I represent, was measurably higher. As a result, it may well be that the differential undercounts were lower in those areas than they otherwise would have been.

That kind of response, that kind of participation should always be rewarded in a democracy, and I would not want to do anything to undermine the importance of that in the public mind.

Mr. BARRETT. Following up on that, it seems to me that reliance on sampling, then, would allow—using your statement of a bicoastal tendency—would allow Congress, the House of Representatives, since you have much more electoral strength in California, New York, Florida, those States, to use mechanisms that we pass here in the House to benefit those States. They've got the votes here. Let's just use a sampling that benefits those areas of the country.

Mr. SAWYER. Mr. Barrett, at the end of the day, this is not a contest; this is a question of whether or not we're going to get the numbers right. And I don't advocate the use of any technique that is going to provide advantage or disadvantage to one section of the country. My goal is to get the numbers as accurately as we can, to get the people not only accurately counted but accurately placed.

If we do that, then the policies that flow from it will be sound, or they have a better chance of being sound than if the numbers are wrong and we attempt to massage the policies to overcome known accuracies that come about either through miscounts or the shift in populations over time.

Our population has changed and is changing more rapidly than at any time in 100 years. The last time the census underwent this kind of methodological difficulty came about 100 years ago when the Nation was changing at a pace unparalleled at any time in our history until again today. It took from 1880 to 1888 to tabulate the 1880 census, and new technology had to be applied. That technology, in fact, led to the development of machines that became the basis for the foundation of IBM, and was really the precursor of the information revolution that we're going through today that is driving much of the change we're experiencing.

I think we need to be able to adjust the techniques that we use, but we should do so in a way that sustains the broad public confidence and improves the accuracy. If it doesn't do those two things and perhaps, additionally, save dollars, then it's not worth doing. Getting it right is the most important thing.

Mr. BARRETT. And I agree with you, and I applaud the work that you have done. I don't, in any way, want to give the impression that you were.

Mr. SAWYER. No, and I didn't take it that way.

Mr. BARRETT. But I don't share, perhaps, your civics book belief in how this place works, that the No. 1 concern is having a correct count. I think, when you get down to it, at the end of the day, you're still fighting over Federal dollars and congressional seats. And I would like to think it doesn't work that way, but my short experience here leads me in exactly the opposite direction.

Mr. CLINGER. Let me ask you gentlemen, are you able to come back? We have a vote in progress.

Mr. SAWYER. I would be pleased to come back.

Mr. PETRI. Sure.

Mr. CLINGER. You could come back?

Mr. SAWYER. Sure.

Mr. CLINGER. Then I think we will go with one more, the gentlelady from Maryland, before we break.

Mrs. MORELLA. Thank you.

First of all, I want to thank my colleagues for the work they have done in the past and for their continued interest and commitment in a census that is as accurate as one can be, which means, as you said, not totally accurate, but pretty close.

I wanted to pick up on an idea that I understand is in the Census Bureau's plan, and that is the idea that they will use administrative records in order to accurately assign people to house units where they got no form. So, in other words, they are going to be doing some speculating in order to try to come up with something that is accurate.

And then, following that, I think they are going to come out with a larger survey, or a large survey called "Integrated Coverage Measurement." And I wondered what you thought about that whole concept. Is this actually doing kind of a statistical adjustment in that mode? Do you see what I'm saying? They are going to estimate. Are you aware of that?

Mr. SAWYER. Do you want to talk on that?

Mr. PETRI. We could both talk very briefly on it.

Mrs. MORELLA. Yes.

Mr. PETRI. I mean, it's quite common, and I think it's always been done that, when the census person goes out to knock on doors, if someone is not home, they ask the neighbors how many people live next door, and so on.

But then the safeguard that you have, which works perfectly well in areas such as I represent anyway, is that those figures are compiled, they are sent to the local—like Markesan, WI, for example—and they know how many people are in Ward 1 and Ward 2 and Ward 3. And sometimes there's a big screw-up, and they sit around City Hall and they say, "This can't be." And they go out and they challenge it, and they come up with the names and addresses of the people, and they get a final, better enumeration.

So the point, though, is, if they are mailed something that's the result of an adjustment, on what basis do they then go in and say, "Hey, no way. The real head count is such-and-such." You can't challenge an adjustment on that basis, unless you are going to have, as the final count, the head count.

So I think that's very important, because there are a lot of screw-ups in the course of something as big as this, and whole wards and sections of towns are missed, and one thing and another. It can get corrected as the process moves forward, in the ordinary course, because people at the local level recognize it's in their interest to have as thorough a count as possible. If something looks wrong, they can go in and demonstrate, by actually pointing to the noses, that there are more numbers there. And that's how you can verify it, at the end of the day, it seems to me.

Mr. SAWYER. What Tim suggests I think is accurate. The use of these kinds of techniques for very specific purposes is nothing new. Part of the difficulty has been that, in using a 10-year planning cycle, you tend to replicate much of what you have done in the previous decade.

One of the things that we sought to do in asking the National Academy to look at the census was to put as many things on the table as they could. They simply asked the very basic question, do you really mean that? With only 8 years to go, we can't do every-

thing. And one of my beliefs was that, if we simply use only that planning period between the censuses, we will never get beyond the kinds of things that might be tested.

One of the things that they propose to test in this census is an expanded use of administrative records to see whether, in fact, it can be used to improve accuracy in a way that has not been done in the past. I think that will be an important lesson to learn.

Mr. CLINGER. I think we're going to break now, if we can. We can reserve the rest of your time, Connie.

Mrs. MORELLA. Thank you.

Mr. CLINGER. We will recess for 10 minutes.

[Recess.]

Mr. CLINGER. The committee will resume sitting.

By virtue of his promptness and being here, we now yield to the gentleman from California, Mr. Horn.

Mr. PETRI. The workhorse of the house.

Mr. HORN. Thank you, Mr. Chairman. Always glad to know how the system works.

With these two distinguished colleagues and friends of mine, let me put to you the situation we confront in southern California. The Long Beach schools, and so do the Los Angeles Unified schools, have 70 languages spoken in the homes of the parents of those students. We have a substantial number of illegal aliens.

The Horn guess, based on the 1970, 1980, and 1990 census, is that we probably owe about four or five seats to illegal aliens, because, as you know, the Constitution says nothing about citizens; it's "persons." That means the one that is just born in the hospitals of Los Angeles County, which will be going into bankruptcy probably around April because it's a billion and a half they don't have, but those are the annual costs.

There are also neighborhoods—and this has nothing to do with illegal aliens, particularly, these are real citizens—where nobody in their right mind would walk to even do a survey. So we have problems with people surveys. We have problems with mail surveys.

In the city of Long Beach, which is a city of 450,000, there are probably, if you talk to the Cambodian community in City Hall, the estimates are 40,000 to 60,000 Cambodians, many of them escaped from Pol Pot's murderer of 1 million Cambodians in Cambodia. They don't like mail that looks like it's "the government." They don't like people knocking on the door, because they still remember what it was like in Cambodia. They know they are in the United States, but they don't want to take any chances.

So given that kind of environment, what do you think is the best way to get the right count? And may I add, under the 1970 and 1980 census, I was Vice Chairman of the U.S. Commission on Civil Rights. We did particular studies and called the attention of the Census Bureau to the undercount in 1970 and 1980.

I listened with interest to your comments on perhaps being able to get an accurate random sample, but, as my colleague from Wisconsin said, when that breaks down into voting areas, which is the whole reason the census was created—it wasn't created so social scientists could make a living; it was created so the House of Representatives could be apportioned, and all the rest of it has grown out of it.

So we need accurate data. What do you suggest is the best way to put the resources in to get the accurate data?

Mr. SAWYER. I assume you are addressing this to me.

Mr. HORN. Both of you. I don't know two more scholarly people I know in the House than the two of you.

Mr. SAWYER. Well, let me return the compliment, because your approach and that of the chairman has reflected a thoughtful skepticism and a useful curiosity in trying to improve an enormously difficult undertaking, the largest single peacetime undertaking of this government, perhaps any government.

I don't think that there is a single solution to the problem that you pose. The techniques that are demonstrably workable to improve the quality, perhaps not to make the census perfect, but to make it better than it would otherwise have been without their application, probably vary from place to place, with the enormous differences in density, culture, and all of the things that make our population as disparate as it is.

I believe that there is a potential place for statistical technique in improving the quality of an otherwise flawed count. But I would agree with my colleague and with those who say that certainly it should not be the only technique. There have been some who have suggested that statistical techniques ought to replace the head count. I don't believe it can; I don't believe it should.

But I do believe that statistical techniques, administrative records, and other improvement techniques can improve the quality of the count. It may well not improve the quality of the count equally everywhere, but I think it can elevate the accuracy so that the accuracy is more even across the country, by using different techniques in different places.

I'm not sure that that's a very adequate answer to your question.

Mr. HORN. What I see is, you could maybe get an accurate State count that, as was said earlier—and I think Governor Ridge is going to say this—you get down to Title I, where does that go, which school district, et cetera, how many people? Now, they can count the people in school, but we have a tremendous truancy rate of a lot of people that ought to be in school. And I don't know what ever happened to the truant officer, but I think they are probably in the Smithsonian somewhere, because I don't see many of them around doing what they are supposed to be doing.

You also have the problem on the illegal alien situation in southern California, where you can have 26 people living in one home. That's an actual statistic. Or you can have, as I ran into when I answered one person who was Vietnamese, with his name, and it turned out there were four people in the house with the same name. And how do you track who is whom?

Mr. PETRI. Could I take a quick try at it?

I think, you know, maybe it was Winston Churchill who had one of his numerous quotes, something to the effect of, "You have to remember, all these statistics, at the end of the day, were collected by the deacon's widow in some rural village, and they are not to be taken as complete gospel. You have to use your common sense."

It seems to me, this census is conducted, at the end of the day, not by machines or tabulators or anything else, but by people. We hire directors on a State and a county and municipal basis. We

have a clear interest in the officials of Long Beach, as an example, to have a good count. You can tailor how you conduct the count, to some extent, to the exigencies of that particular community. If they know you have Cambodians there, hire some Cambodian, or go talk to the chief and work it through.

It seems to me that you just want good competent people, focusing resources to do as thorough a count as possible. That's really the honest answer, rather than trying to do a quick, dirty adjustment and figure that that somehow is going to solve all of our litigation and other problems. It will just dig us deeper and deeper into a political and cultural morass, in my opinion.

So it's a technique that should be used, but it seems to me it should be used in focusing resources and then doing a count.

Mr. SAWYER. Mr. Chairman, could I have just one follow-up comment, with regard to two items? School districts, we have worked hard in the Education Committee, and Tim has been a part of this, to make the effort to get those numbers more accurately, more frequently, and to revisit those numbers every 2 years instead of every 10 years. It is the elapse of time that really is the greatest cause of inaccuracy in school districts.

We have also worked hard to use modern mapping techniques to bring those counts for school districts down to the school district level, rather than to do county-wide averages, which yield another kind of inaccuracy. I think both can contribute enormously to the continued improvement in the direction of dollars and policy of the kind that you are concerned about.

With regard to illegal aliens, I think that the anecdotes that you suggest are accurate. The most difficult problem in dealing with that, every decade or so we revisit the question of whether they ought to be counted, and the argument is always conducted in constitutional terms, as it properly ought to be.

But I think sometimes the decision ultimately gets made in very practical terms. When you send an enumerator to a household, you hope you get somebody at the door, and you ask them to ask how many people live there. And then they tell them. And then you say, "Now, how many of you are legal and how many of you are illegal?" We are likely to lose more enumerators than we do illegal aliens.

Mr. CLINGER. The gentleman's time has expired. I am pleased to recognize the gentlelady from Florida, Mrs. Meek, for 5 minutes.

Mrs. MEEK. Thank you, Mr. Chairman. Thank you for letting me testify out of turn. I have to go to an Appropriations hearing.

I appreciate this so much, and I have listened to the two gentlemen during the time I was able to stay here, and I am very concerned about the approach that perhaps you are taking. I think what I'm hearing—and I may be wrong—that we put it out there, we allow them to have the opportunity to exercise their citizenship, but if they do not, then it's not our problem. Now, I may be wrong, but that's what I'm feeling.

I think it's Government's responsibility to use all the scholarly acumen they have, to use all the practical and common sense that they have to get this problem resolved. Now, I've been dealing with the census since 1970, and each time these problems come up. In the Florida Legislature, oh, we had a time. We were doing the same thing that we're doing now. We have a lot of hearings, and

we do this, and we invite people in, but we never get down to the nitty-gritty of what we've got to do. And I think that's Congress' fault. It's either Congress or the administration.

I think that this committee—and I'm going to talk to the chairman about it—knows that unless something is done at the top, that's us, the procedures of the Census Department will not change, because they don't have to. They don't have a mandate. They don't have a dictum that they must follow. I think it has to be spelled out, piece by piece, just as this committee does for things that they feel are very important. If the chairman didn't feel this was important, he wouldn't have convened us for the hearing.

I appreciate so much the work that the two of you have done. I am asking you for more. I am asking you to put down some guidelines that census takers must use, utilizing all the people here and otherwise. Now, I have one suggestion, that you utilize every elected official in State, county, and local government. They have a vested interest, and so do all the community-based organizations. Everyone has a vested interest. They run to us after this is over.

Now, I come from a district that has a large population of Cubans, Puerto Ricans, you name them. We have a melting pot in Dade County. And I want to tell you, many of them just got their citizenship. I want to tell you, Mr. Petri, they are as excited as anyone would be when they become citizens.

Now, you tell me, if they don't choose the people right, that it can be done, but it's the right kind of people, and you may have to put a little bit more money in it. I notice that, in the President's budget, I think he had to cut down on what the census does. The census is one of the most important things.

And I want to digress to say, I wouldn't know how old I am, Mr. Petri, if it were not for the census. Because way back then, they took the count in my house, and they knew that I was there, but I didn't have a birth certificate, as they had back there in the Stone Age; they didn't have them, so the vital statistics department didn't have it.

Now, you are going to find some of the same kind of people now. You walk up to the door in the Haitian community and now a lot of them are citizens. But my major problem would be in the Hispanic community, in the Guatemalan community, all of them are large communities in Miami, and they vote, and they want to vote, and the ones who just became citizens.

Please check on, by law, the manner by which the census shall be done. If you don't, and if you don't spell it out for these diverse areas, and also urban—poor areas, the very poor areas are left out of this thing because it's an undercount out there. Please do this up front. We cannot wait till the census is taken. We should involve everyone.

For an example, as a Congresswoman in the 17th district, if I had that mandate—and it is my mandate—but it would be if you involved us, and you don't think we would get people out to help the people who are doing it? We do it every year anyway, voluntarily, just to kind of keep them on the right path, but we need a better direction, a directed approach to the census.

I am very concerned that one of the motives here, Mr. Sawyer, may be to save money. I don't think this is the place we can save

money, I really don't, because this is going to cut out some Congresspeople from a lot of people and a lot of areas. And they need to come up here and represent those people, and it's very, very difficult.

So I have a special interest in it, and I do want you to do something about it. Representative Alcee Hastings has one of these diverse districts with everybody, farmers on the Glades where you see all these agricultural problems. Please bear with me, and I'm asking the chairman to please study it. And Mr. Horn, who has done a lot of research, he has the people on this committee who could put together a bill—is it still active; is your committee still active? If not, I think it's our duty, Mr. Chairman, to do this, particularly if you are going to base it on statistical data.

No, see, I'm from education. I know a lot of that isn't worth anything. So I'm asking you to please do more than the statistical count. If you're going to do it, you're going to come up with an undercount. But if you have real people going out there—because the people are very suspicious, and you know that, and they will not respond to everyone. But they will if you tie down that congressional district, if you tie down that State representative, they are all over, if you tie down the county officials, they all are stakeholders in this.

So please, do your very best to do that. I would like to ask the committee to please focus on that and come up with a methodology that we can help, Mr. Petri and Mr. Sawyer, help this situation. It's a critical situation. Thank you.

Mr. PETRI. You are right on. In the last census—and Representative Barrett can supplement this—but, in fact, when it was conducted, there were consultations with all the congressional offices. We had the opportunity to nominate people to be directors in our area and to be volunteers in our area. The Census Bureau engaged in a big outreach to local—and some of us took an interest, and some of us didn't.

I think, in Wisconsin, we tried to take a big interest and make sure that different communities participated. We sent out public service announcements in different languages, telling people that it was against the law for anyone to use that data for any individual purpose, so the fear that somehow the police would get hold of this or some other government agency and use it for law enforcement was wrong. And the law is very clear on that. The census is a separate, private communication that is used for basic information purposes; it's not to be used for anything else.

That's all very important, and we have to credibly communicate that to communities, particularly where there is high suspicion.

Mrs. MEEK. I think, Mr. Petri—if I may come back again, Mr. Chairman—that the 90 percent direct count and the 10 percent sample, why not change that?

Mr. BARRETT. No way.

Mrs. MEEK. If you change that—I know, way down the road now, you're going to be behind the road if this isn't changed. Because a 95 percent direct count and a 5 percent sample, or 50/50, whatever, may be too accurate. Now, I'm not a statistician. My problem is, I had too many education classes in that. So I'm asking you to please look at the way you are doing it.

Mr. Chairman, help me out.

Mr. CLINGER. Mrs. Meek, we will do everything in our power to help you. You have certainly laid down a heavy challenge for all of us, and we will respond.

Mrs. MEEK. Thank you.

Mr. CLINGER. Before I recognize Mr. LaTourette, I believe Mrs. Maloney has one question to ask.

Mrs. MALONEY. I just want to thank the gentlemen for their testimony. I have a tremendous concern in this, being from New York City. New York City is party to an ongoing suit concerning the undercount and how to adjust for it. Of the 10 most undercounted congressional districts in the country, 5 were in New York City. And the estimated undercount for New York City was 230,000 individuals and 314,000 for the State.

I would like to ask the chairman if I could put my opening comments in the record.

[The prepared statement of Hon. Carolyn B. Maloney follows:]

PREPARED STATEMENT OF HON. CAROLYN B. MALONEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Thank you Mr. Chairman.

I would like first of all to thank you for holding this hearing on the 2000 Census. Some may be a bit surprised that we are holding a hearing on something which won't happen for four more years, but I for one am very happy that we are. All too often in Congress we are forced to react to events with little or no time for deliberation. The Chairman should be commended for giving us this opportunity to examine the preparations for the 2000 Census well in advance, for it is an incredibly important issue.

The Constitutionally-mandated ten-year census is a critical event in the political life of our nation. The apportionment of seats in the House of Representatives relies on its data, as does the distribution of billions of dollars of federal funding each year. An accurate census is thus critical to ensure fair treatment by the federal government of every single person in the country.

These issues are even more important in the upcoming census because of plans to change the method of conducting it. In light of the results of the 1990 Census, it is clear that some adjustments are needed. That census was not only the most costly in history, it also spawned a host of litigation. Indeed, New York City is party to an on-going suit concerning the undercount and how to adjust for it.

We in New York are justifiably concerned—of the ten most undercounted congressional districts in the country, five are in New York City. Estimates of the undercount in New York City are 230,000 individuals, with the State being undercounted by 314,000 total. We can and must do better in achieving an accurate estimate of our population, particularly minority populations, if everyone is to have fair access to federal dollars and political representation.

Clearly, improvements are needed. I look forward to hearing from our witnesses on the Census Bureau's plans to address these problems. Our goal for the first census of the new millennium should be the most accurate and cost effective one in history. Thank you Mr. Chairman again for giving us the opportunity to help ensure that.

Mr. CLINGER. Without objection, so ordered.

Mrs. MALONEY. I would like to ask the gentlemen, both of them—Mr. Sawyer, I know you have a long record in this area; we have talked about it in the past—what actions are you taking or are being taken by government to ensure that the undercounting is not repeated in the 2000 year census? What is taking place now? And Mr. Petri and Mr. Sawyer, what do you think we should be doing to make sure that the undercount does not occur in the future?

Mr. SAWYER. Let me begin. The Census Bureau has spent the better part of this decade so far reviewing the problems that were

found in the 1990 census, and they were considerable, and trying to, as they say, "reengineer" the 2000 census. Will it be perfect? It will not. It will not. Will it be better than 1990? I am confident that it can be, if we give them the resources and the time and the confidence to carry out many of the proposals that they have offered.

Should they undertake those without question? Absolutely not. I think that the underlying question that touches every one of the concerns that has been raised is one of confidence. If the count of the Nation does not enjoy the confidence of the people that are being counted, it will not work, no matter what techniques, technologies, or other kinds of reengineering take place. But I am confident that many of the tests that have been undertaken and the ones that lie before us have a potential to improve the quality of the enumeration measurably.

I agree with Mrs. Meek. I suspect that there is a kind of—as Mr. Barrett suggests—a kind of civics book hopefulness to the testimony that I bring here today, but it is more than that. It is a confidence that goes back to the underlying principle that went into the first article of the Constitution; that is, a belief in the equality of us all, that we all deserve to be counted, and that we are all better off if the numbers are accurate.

We only kid ourselves that we are able to take even the soundest policy and make it work if we are distributing dollars or making decisions based on enumerations that don't reflect the country as it is.

Mrs. MALONEY. Mr. Petri, what are we doing about the undercount?

Mr. PETRI. Well, the Census Bureau has been working very hard, and they have submitted a plan to attempt to focus additional resources, reach out to the Postal Service, other government agencies, to attempt to sort of validate their approach and identify areas where special additional resources need to be focused to do a count.

The area of concern is that a lot of us feel, at the end of the day, the final number should, as much as possible, be an actual count. If there is undercount in your area or in New York City or in the inner city of Milwaukee, Representative Barrett's district, that has a potential for undercount, with a lot of disparate communities represented there, let's focus additional resources.

I think New York could, in fact, learn, in this instance, from Milwaukee. When they were trying to adjust, they were going to adjust us down, at one point. We sort of had the names and addresses of everyone, and they were going to try to say they didn't exist. There's a big incentive for city government, school districts—as Representative Meek said, they are stakeholders—in getting as complete a count as possible, because a lot of funding formulas are driven by the count, at the end of the day.

So it's well worthwhile, and we have no quibble with having as complete a count as possible, but, at the end of the day, if there is a complete count and then it's adjusted, we do disagree with that.

Mrs. MALONEY. You stated in your testimony that sampling techniques should be used only for guidance in conducting the census and not for adjusting the final numbers. Would you like to elabo-

rate? There was an exchange with you and Mrs. Meek on why you feel so strongly that sampling shouldn't be used?

Mr. PETRI. Yes. Because you have to break the numbers down to specific areas; for example, for congressional districts, for assembly districts, for school districts, for sewer districts, all sorts of different subunits, funding subunits.

They have the opportunity, if you're basing it on an actual head count, as the preliminary numbers come forward, to challenge those numbers and say, "You left out some people here," or "This number is wrong," and then get it pinned down as best you can. It's never going to be perfect, as Representative Sawyer said. But if it's an adjusted number, say, they think there are 100,000 undercounted in the whole city of New York, are those 100,000 attributed to your district, or are they attributed to Harlem, or where do they go?

Suddenly, the legislature is going to be running around with this floating number, and there will be court cases about it. And I think there will be no end to litigation and be a very political process. It's always a political process, but at least we have the safeguard of lining everyone up, like a jury, and sort of counting noses. And that seems to me to be the bedrock upon which the census, at the end of the day, has to be based.

Mr. CLINGER. The gentlelady's time has expired.

Mrs. MALONEY. Mr. Chairman, may I just ask for 1 second, 1 minute to comment on a project of Mr. Petri.

Mr. CLINGER. Madam, you jumped the queue on me here. I thought you had only one question, and you kind of jumped the queue on me. And I really feel that Mr. LaTourette has been very patient.

Mrs. MALONEY. OK. Good enough.

Mr. CLINGER. I would now recognize the gentleman from Ohio, Mr. LaTourette.

Mr. LATOURETTE. Thank you very much, Mr. Chairman.

I want to thank you, Mr. Chairman, for conducting this hearing. I also want to thank Mr. Sawyer and Mr. Petri. I have to say, my friend from Ohio, Mr. Sawyer, has been hiding his light under a bushel basket. We ride back and forth on the plane every week, and I never knew, according to the media, that you are the Congress's foremost census expert. That has been news to me.

Mr. SAWYER. You don't read the New Yorker.

Mr. LATOURETTE. A couple of observations. We, in Ohio, obviously know, after the 1990 census we lost two congressional seats—and I was struck by Mr. Barrett's observations earlier—that this has the danger of becoming somewhat of a parochial fight. We have in front of us a GAO study that gives a comparison between potential adjusted numbers and nonadjusted numbers. In Ohio, we would have been big losers in things such as Medicaid and also social service fund distributions. We would have gained a little bit when it came to highway funds.

But it seems to me there is a built-in incentive for some areas to undercount and some areas to overcount. I think that the Wisconsin example is good. That was an interesting story by Mr. Barrett that they did such a great job that they sort of short-

changed themselves when it came to comparisons to other States. And that's unfortunate.

My question, though, to you gentlemen is based upon your institutional knowledge. We have in front of us information—and, obviously, if everybody mails back a form, we don't have to get into the statistical sampling and figure out what the margin or error is, and when you get down to sewer districts and school districts, is your sampling technique statistically insignificant.

But the information shows that, in the 1970 census, 85 percent of the people who were eligible sent it back. In 1980, 70 percent sent it back. In 1990, it was projected that 70 percent of the people would send it back, but only 63 percent sent it back.

Based upon the work of your former committee, did you conduct hearings or did you have information or testimony in front of you as to what led to this 22 percent drop-off in mail response? Is it that we're too busy today? Is it that the Census Bureau didn't get it out ahead of time? Or was there no single cause for this rather dramatic drop in mail response that led to other methods of collecting information?

Mr. PETRI. I think there's tremendous pressure from business and other stakeholders in society to get as much information as possible in the census. The form may have been a little more forbidding than it should have been, for the short form purpose. And I think that may have contributed to it.

I think, beyond that, we all know we are in an increasingly mobile society with two heads of household and all of the pressures that people are under, and I suspect that that contributed to things like this tending to fall through the cracks, for no particular real reason except for it just being part of the background clutter in increasingly busy people's lives.

I do think, though, that we have an important national obligation, as a Congress, to attempt to overcome that through the best public relations campaign we can do of emphasizing to people that this is a responsibility and privilege of citizenship to be counted, and, if we think that people are not participating in it, to reach out and communicate more, and send people by, or try to get in touch with their communities, and use 101 techniques to involve them in this process, not just to give up and then try to adjust it through the political process and think that we've accomplished something.

That's sort of giving up on sort of the sense of community of our country, and I think we would be losing a lot more than we would be gaining if we took, as I said in my testimony, the cheap and easy and wrong approach.

Mr. LATOURETTE. The Bureau's proposal, then, that they unveiled yesterday to simplify the form, you think would give us a hand?

Mr. PETRI. I think it would.

Mr. LATOURETTE. Mr. Sawyer.

Mr. SAWYER. I would only reiterate what Tim said. The causes are multiple, complex; they interplay with one another, and they vary from place to place. In that sense, I'm not sure that any single solution is what is going to be a perfect solution anywhere. But the combination of fundamental changes that the Census is testing

right now have the potential to measurably improve the quality of the census in many places.

There is a brief appendix in the document that Census has been distributing since May of last year, "The Reengineered 1990 Census," that lists a score of fundamental changes from 1990. One of those is the use of sampling, first to try to target areas where improvement can be made, and then to reduce the differential. But there are procedures; there are avenues of cooperation of the kind that Mrs. Meek talked about; there is new technology and new techniques for collecting the long form data.

We heard a great deal in 1990 about the intrusiveness of long form data, although that data has been around for a very long period of time. Survey techniques know that once you've gone beyond a certain length of time, people stop listening, one of the reasons for our timer system here. So the attempt to break up the long form and to gather as much information as has been gathered in the past, by not gathering all of the information from each of the people who receives the long form, represents an opportunity, I think, to diminish the burden that is posed on any individual household as a result of that particular technique.

These and a number of others, I think, can contribute to a much improved success rate in 2000.

Mr. LATOURETTE. Again, I want to thank both of you for your leadership on this question. The issue of the census, aside from all the important things that have come up during this hearing and in the future, was brought home to me during the district work period when a fellow stood up at Rotary and said he thought 50 percent of the people in this country worked for the Federal Government. I was able to rely on the census information from 1990 to indicate to him that wasn't correct.

Mr. PETRI. Well, we do at tax time.

Mr. LATOURETTE. Thank you, Mr. Chairman.

Mr. CLINGER. I thank the gentleman.

I now recognize the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman. I appreciate your calling this hearing, because, again, after having read the Governor of Pennsylvania's testimony that was submitted, we come from the opposite end that we would like to have had the adjustment, obviously, because it would have meant one more congressional district and, from the numbers, obviously, a great deal more money in Medicaid and different issues.

I appreciate our colleagues being here, because, although I recognized 2 years ago my colleague Mr. Sawyer and Mr. Petri's efforts in the committee when we were working on reauthorization of elementary and secondary education, in the Education Committee, and the frustration with waiting 10 years, their expertise on that other committee helped us a great deal in that reauthorization to do a 2-year effort instead of the 10 years because of the growth in student enrollment in a lot of high-growth States.

The reason I'm glad you've had the hearing is that I want to make sure we don't, after the year 2000, reach the same point where we are now, with the lawsuits and everything else. And I share the concern about the statistical estimation instead of the

counting of the folks, although I also know, from some of the testimony that we have, that there are certain segments of our society that you just can't get responses, and we still have to have those numbers as close as we can. That's why the statistical adjustment, you know, still needs to be there.

I guess one of the concerns I have is that, in the lowering of the numbers—and each of us have asked that—the lessening of the responses each 10 years. I would estimate that in the year 2000 we would even see less of the people who are willing to return those, unless we send them out with all sorts of bells and whistles, and things like that, which I know that's the intent. But I worry, from 63 percent in 1990, we might even see less than that, and we're not really getting the accurate count if we're doing so much of the statistical effort.

But I am glad to have the hearing today, Mr. Chairman. I appreciate our two experts, and I know the next panel will be here. We obviously have to have oversight starting in 1996 for the year 2000, and then, hopefully, we won't see lawsuits afterwards, like we did after the 1990 census.

Mr. CLINGER. I thank the gentleman for those comments, and that's precisely why we are holding this hearing today and will continue to monitor this very closely as we move toward the actual taking of the census in the year 2000.

I am now very pleased to recognize the chairman of the subcommittee of jurisdiction, Mr. Zelif from New Hampshire, for 5 minutes.

Mr. ZELIFF. Thank you, Mr. Chairman. You can tell that the politics in New Hampshire get rougher and rougher.

I would like to ask both of you, because of your vast experience, we're getting close to the closing of the window, in terms of congressional direction, what do you think we need to address, in terms of giving very clear direction, and how quickly do we need to move, in terms of putting a few of these things on the fast track at this point? Using your experience, what, specifically, do you think we need to give the Census Bureau, in terms of direction, and how quickly do we have to do it to make an impact?

Mr. SAWYER. We both probably have an opinion on this. I think that, particularly, if I had to give one answer to that right now, it is that the tests that are going on right now have, for very small amounts of money, the potential to save very large amounts of money down the road and produce a better result, at the same time.

Making sure that the Bureau has the resources and the trust needed to undertake those tests, so that we can get sound and scientifically solid answers to the kinds of genuine concerns that have been raised across this committee, that represent concerns that are expressed across the United States, is the single most important thing that we can do. It is the single best investment that we can make in information that, over the course of the next decade, can drive as much as half a trillion dollars, in Federal money alone, to each of the communities that we serve, in a way that reflects the policies that we want them to reflect, and probably a like amount of money in State dollars that rely on the same data.

Making sure that those data are consistent and comparable across the Nation is really the purpose of these tests. It is the best investment we can make.

Mr. ZELIFF. Mr. Petri.

Mr. PETRI. Yes, I basically would suggest you take a look at four things: one is to try to break down the difference in cost that the Census Bureau has brought forward, between doing it the old way and the new way, and figure out how much of that \$900 million is saved by an adjustment and how much is saved by all the other techniques that they are talking about.

Second, I would, myself, recommend that you—while you use every cost-saving technique that you can find and focusing their resources to get as complete a count as possible, you not permit them to adjust final figures. Preliminary figures submitted have traditionally—walk by and do a house count, if they have to, talk to neighbors, do other techniques. Send more people into neighborhoods. If you think there is an undercount, do it, but then let reality intervene before the final count so that it can be defended in a court of law, as it has traditionally been defended by our Government.

Third, take a look and encourage the Census Bureau to overcome the undercount of Americans living abroad. The world has changed in the last 200 years. There are tens of thousands of retired Americans in Mexico, in Costa Rica, and other places around the world. There are business people all around the world. They are paying taxes in many cases; they are voting, but they are not being counted. If we are going to adjust for undercount, let's look at everyone.

Mr. ZELIFF. Seems logical.

Mr. PETRI. And, finally, take a look, very seriously, at adding a multiracial category to the ethnic question. We are an increasingly diverse society. We had extensive hearings on this. You can review the record. Innumerable families came forward, individuals weeping, and so on, because the husband would be of one race, the wife of another, and then they felt they were forced to attribute their child to one or the other, and they really would prefer to say "multiracial."

Mr. ZELIFF. I appreciate that. The other area that I would like to look at, and I hope it doesn't duplicate things that you have already covered, but at a 65 percent response rate and a 75 percent potential, hoped-for response rate this time, in terms of the initial mail-back, we ought to be spending a lot of time looking at the form itself. If we're coming out with a brand new product, first time census, how would we go about it?

Let's get away from "We did it this way last time." What stuff do we actually need to have?

Mr. PETRI. You can do a three-tiered census, even possibly just a simple, real short post card, or something like that, to up the basic response for political representation purposes, and then refine it with additional, more complete—I don't know. I mean, there are a lot of ideas.

Mr. ZELIFF. If we're going to get information for special interest people, maybe, at some point, they ought to pay for it. I guess the other question—and this is sort of the same, jump in anywhere you feel appropriate—but are we looking at different alternatives of

getting the response? Should we be looking at the post office? Should we be looking at the private sector, putting things out for bid?

The world has changed pretty dramatically, and here we are going down the same old path, paying more and more money to get—we're taking 500,000 people that are basically untrained, trying to train them to do a job. We've found that it has been ineffective in the past, and I wonder if we shouldn't be looking at some new technology and new ways of doing it.

Just your comment, both of you, if you would.

Mr. SAWYER. Let me just suggest that there is a great deal that is being done in terms of changing technology and technique, but there is a great deal that is being done in terms of working with the Postal Service and others to make sure that the fundamental address lists are the finest that we can make them, the Nation can make them. And there is a great deal that is working extremely well.

The errors that have been identified are of deep concern, not because they are so large, but because they are disproportionate. And trying to reduce those is an important undertaking. But it is critically important to understand what is working well and those new techniques that are being tried to improve that.

Let me just comment on something that Tim said. I absolutely agree that we should not be doing anything to adjust final figures. The techniques that are going into the count ought to be internal to the count itself. They ought to be carefully tested and enjoy the confidence of those who are responsible for carrying it out. It is in coming with an after-the-fact adjustment that you wind up with the kind of enormous controversy, and I think ultimately undermining the confidence that we experienced in 1990.

There is much that is working. There is much that can be improved. But I would hope that we would not throw out those things that have worked well and are time-tested, in order simply to do some things that may be different.

Mr. PETRI. One quick thing you should be aware of, I think, that came out clearly in our hearings, you can get good figures from the post office, in some cases, Publishers Clearinghouse in others, about numbers of people in particular buildings, and so on. One area of difficulty, when those are turned over to local municipal officials, they have building codes, other rules that may or may not be complied with.

So you need to be sure that you have, in this instance, some fire-wall there, or protection, so that you encourage participation in the census and it does not turn into a vehicle for other law enforcement purposes, however laudable they might be. It seems to me the higher goal, in this instance, is to have a complete and thorough census, even if it could reveal something.

Mr. ZELIFF. Shorter form?

Mr. PETRI. Yes.

Mr. ZELIFF. Shorter form. Post card. Getting rid of a lot of unnecessary data.

Mr. SAWYER. I would caution that there is an enormous amount of data that comes from the basic short form as it is today, without which we would find an enormous vacuum in the country. During

the Government shutdowns, among the first things that hit the front pages of the newspapers were the absence of data that people relied on to make fundamental, day in, day out, week in, week out, business and governmental decisions. Be careful before we sacrifice that depth of information.

Mr. ZELIFF. Thank you, Mr. Chairman.

Mr. CLINGER. The gentleman's time has expired. I am now pleased to recognize the gentlelady from Florida, Mrs. Thurman, for 5 minutes.

Mrs. THURMAN. Thank you, Mr. Chairman.

First of all, I want to say that I want to be associated with Mrs. Meek's remarks, and I also want you to know that, even though I wasn't here, I was one of those doing those PSAs. I was out there; speaking to every organization. And we used it on a money basis, quite frankly. I said, "This is \$350 that does not come into the State for every one of you that don't send back in your form."

I know today we've talked a lot about what the Census Bureau budget framework is. In your hearings, over the several years that you were working on this, did we bring local governments up here, States to hear, are there other areas in our budgets that we can be helping either our States or our local governments to help them prepare for this, whether it be for better mapping, whatever it might be? I mean, have we looked at those issues, as well?

Mr. SAWYER. I like to think that we have, in great depth. I have to tell you that the subcommittee's work in those areas, however, was, as much as we did, is necessarily—I don't want to use a pejorative term—but is a thin veneer, by comparison to the enormous depth of scientific work that goes on throughout the decade at the Bureau. There is an enormous amount of effort that they have done to make sure that local officials and others are deeply engaged in that process. And I, frankly, think there's no substitute for it.

I am so tempted just to say, you really need to get the subsequent panels up here. You will be stunned at the quality of work that they do, and the difficulty that it imposes, and the value of the product that they produce.

Mrs. THURMAN. That's why I think it's important that we're not just looking at the Census Bureau but what else we're doing in this Government, either in some ways to keep people from doing it or not doing it, from a local government perspective.

Mr. SAWYER. Mr. Horn is looking at structural ways to do that sort of thing. I think it's important that we pay attention to the comments that Tim made, however. Confidentiality and confidence really are the bedrocks on which this has to be built.

There are a lot of Government agencies, IRS perhaps foremost among them, law enforcement agencies, that have sought to penetrate those firewalls that have protected the census for 200 years. And the fact that those have never been breached I think is critical to the ability to continue to get the level of cooperation and response that the census does enjoy.

Mr. PETRI. We tried, in our hearings, to figure out ways to breach the wall the other way, to make information available from the IRS, Social Security, State Department, the Post Office, other Federal agencies, to the Census Bureau, and there was always this thing, "Well, we'd like it to be reciprocal." And we weren't too inter-

ested in that, from our subcommittee's point of view. In fact, we wanted to have a complete census, but we didn't want it misused for nonstatistical and enumerative purposes.

Mrs. THURMAN. And I thought that was carried off well in 1990. I mean, that was a part of the campaign in local areas. I mean, we said, "This is confidential. This goes no place else." I just know that sometimes when you start in the year 2000, when you're going to do this, and we've not—you know, it's kind of hard to walk in a year before and then, all of a sudden, say to these local communities, "This is what's going to happen. This is what we need," without doing that preparation or looking at ways that we can help them.

Mr. SAWYER. That's one of the reasons for this hearing and the one that Mr. Zeliff, the subcommittee chairman, and you took part in last year, using this time now to elevate that enormously important public purpose and to use this period of testing to verify the kinds of changes in the system are at the heart of that confidence.

Mrs. THURMAN. Well, I just want you two to know that if you need somebody out there to help you—I know everybody said, "Please do this," but I'm going to offer my assistance in any way that I can.

Mr. SAWYER. You guys are the ones that are doing it this time. We're there to help you. It really is in your lap. I'm glad it's a committee of this quality.

Mr. CLINGER. Congressman Petri, Congress Sawyer, we want to thank you for your very excellent, informative, comprehensive testimony. We have taken the baton from you, but we hope that you will continue to hold onto one end of it, because we're going to need your counsel as we go through the next few years.

Mr. SAWYER. Thank you, Mr. Chairman.

Mr. CLINGER. Thank you again, gentlemen. You've been very helpful.

Our next panel, which I would now prepare to introduce, is indeed a panel of experts, representing differing points of view on some of the issues that we have been discussing this morning, but they all bring a great deal of knowledge and experience to the table.

We have two former Commerce Department officials here. Our old friend, Bruce Chapman served as Census Bureau Director under President Reagan, and is now president of the Discovery Institute, in Seattle, WA. We welcome him.

Bruce, do you want to come up?

Barbara Bailer topped her 29-year career at the Census Bureau as associate director for statistical standards and methodology. Dr. Bailer is now at the National Opinion Research Center at the University of Chicago.

Welcome, Dr. Bailer. Pleased to have you with us.

We are also fortunate to have demographer, Mr. Steven Murdock, who specializes in rural demographics and sociology at Texas A&M University.

Also, we are very fortunate to have the very distinguished Mr. Charles Schultze, senior fellow at the Brookings Institution.

We welcome you, Dr. Schultze, to the panel.

He was the director of the U.S. Bureau of the Budget in the mid-1960's and chairman of the Council of Economic Advisors under President Carter. Most recently, he chaired the Panel on Census Requirements in the Year 2000 and Beyond, sponsored by the Committee on National Statistics, which has been one of the important works leading up the census of 2000.

Testifying jointly with Dr. Schultze, and also having served on the Census 2000 Panel, is Dr. James Trussell, economist and statistician, currently professor of economics and public affairs at Princeton. He is also the director of the university's Office of Population Research.

I want to thank all of you for coming, some of you from across the country.

We're missing somebody. Did I miss somebody?

Forgive me, Dr. Wachter. I apparently lost my script.

Mr. BARRETT. Undercount.

Mr. CLINGER. We have an undercount; that's right. Mr. Barrett points out we have an undercount of our panel.

Dr. Wachter, would you come and take your place at the table. Perhaps, at the appropriate time, you could introduce yourself.

We are delighted to have all of you gentlemen with us. It is the custom of this committee, being the principal oversight committee of the Congress, to swear all witnesses, so as not to prejudice the rights of any witness. If none of you would have an objection to doing that, I would ask you if you would mind rising and swearing.

[Witnesses sworn.]

Mr. CLINGER. Let the record show that all of the witnesses gave assent to that question.

Ladies and gentlemen, we welcome you very much to the panel.

Dr. Wachter, I now see that you are professor of statistics and demography at Berkeley. I apologize for the fact that we did not give you a proper introduction, but we are delighted to have you, as well.

We will start with Mr. Chapman. Bruce.

STATEMENTS OF BRUCE K. CHAPMAN, PRESIDENT, DISCOVERY INSTITUTE, SEATTLE, WA; BARBARA A. BAILAR, VICE PRESIDENT, SURVEY RESEARCH, NATIONAL OPINION RESEARCH CENTER; STEVE H. MURDOCK, DIRECTOR, DEPARTMENT OF RURAL SOCIOLOGY, TEXAS A&M UNIVERSITY; KENNETH W. WACHTER, PROFESSOR OF STATISTICS AND DEMOGRAPHY, UNIVERSITY OF CALIFORNIA AT BERKELEY; CHARLES L. SCHULTZE, SENIOR FELLOW, THE BROOKINGS INSTITUTION; AND JAMES TRUSSELL, DIRECTOR OF THE OFFICE OF POPULATION RESEARCH, PRINCETON UNIVERSITY

Mr. CHAPMAN. Thank you very much, Mr. Chairman and members of the committee. Thank you for inviting me today.

This is leap year, and I think that it's an appropriate time for us to be looking at what is, in fact, a big leap ahead for the Census Bureau in the conduct of the census. I am concerned that it may be a leap into the unknown, as regards the issue of adjustment of the census, based on sampling.

The first thing I would like to do is salute the people at the Census Bureau, who are really outstanding individuals in every re-

spect, and I think have done a terrific job in trying to respond to Congress by coming up with ways to save money and to conduct this census more efficiently than it was conducted in the past. In fact, that has been the record of every census. Every census, there have been improvements.

The suggestions this year that we have a more user-friendly form, that we use matching software to spot double counting, the digital capture of data on forms—the added mail contacts for recipients of census forms—all of this is sound and encouraging.

I also would like to say that we do, obviously, have a legitimate statistical issue about the undercount and that has to be acknowledged. It's embarrassing to have a statistical undercount after every census, but we have had a statistical undercount right from the beginning, and the republic has managed to survive. I think the question is, what are we doing to lower that undercount through the efforts that we make, and how do we go about it?

My argument with adjustment is not primarily a matter of statistical methodology. That's not my background anyway. If anybody can pull off a statistical adjustment in a conscientious manner, it would be the Census Bureau. However, I will say that even if you do a statistical adjustment, you will find that there are still holes in the census, because, as Congressman Petri pointed out, we have all these people living overseas and we're not going after them. I don't believe that there is a plan to include them as part of a sample for a statistical adjustment.

Which brings us back to the central problem which I see with adjustment, which is the moral or philosophical concept of official enumeration. Sampling is a proven, accepted form of measurement, but it is always done on the basis of some hard, broadly accepted data base from which the sample is drawn. I can't think of a statistical sample that is so closely tied to a civic act as is a census enumeration, any more than I can think of an election survey that has the moral authority of an actual election.

The census enumeration is a participatory function of our government, hallowed under the Constitution. There are not too many comparable civic acts. I think of voting. I think of jury service. In any case, the census is one of the fundamental democratic institutions of our country and a very noble one. It gives us the numbers that make other numbers meaningful. So, therefore, it not only has to be trustworthy, but it has to appear trustworthy.

In a time when we have a lot of mistrust of government, I question the change that would introduce the invention of statistical persons into the census to stand in the place of real human beings. And that is, at the end, what you get with sampling and the imputation of individuals into the census.

The census has long represented an attempt to count every person in the United States, every real person, not every virtual person, not every statistical analog for a person, not every full-time equivalent of a person, but every real person. Once citizens realize that the census number is partly an invention, however brilliant and scientific an invention, they will begin to question many things. Suspicions will be aroused. How do we know that the creation of statistical persons does not have some partisan or factional or geographical basis?

Let me again stress the confidence that I have in the individuals at the Census who would be conducting both the samples and the adjustment. But it's precisely because I do value their integrity that I would not want to see it ever put up to question.

So let's next look at the legal problems with the census. Do you think that we have those legal problems now? I saw in Roll Call this morning, the idea in the headline was that sampling would help us get past the legal problems we've had. Well, I think you at least ought to consider the possibility that you will have far more lawsuits in the future if you do undertake sampling.

Presently, the costly lawsuits that we've seen have been settled in favor of the Government. Common sense tells a judge that a good faith effort to count every person cannot be faulted for occasional human mistakes. But, under an adjusted census, it will not be difficult at all to produce evidence that the census erred, in a sense, and erred intentionally by imputing fictitious people into neighborhoods where real neighbors could show that they don't exist.

In some cases, the fictional imputed people are going to amount to a difference between drawing a redistricting line one place rather than another, and maybe even change the apportionment of States. After all, that's the idea, isn't it? In such cases, I suggest common sense, which is presently the friend of the Government in these cases, will become the Government's enemy, because you'd have to give all the judges and ordinary citizens an extensive course in statistics to persuade them that it's just and fair to invent people for something as supposedly straightforward as a census.

Now, maybe the people will accept this. Maybe the American people will be unconcerned or even satisfied about this. But maybe, instead, this will be seen as one more way that the Government is trying to pull a fast one on the people. And if there is growing public cynicism as a result, I think what you will see is a further fall-off of the regular response to the census.

If that happens, then you will have a demand for more sampling to make up the difference, and so on, until we finally have a demand that the census, for both economic reasons, or financial reasons, and statistical reasons, be conducted entirely as a sample.

We will be basing the hard data—or, rather, the samples and the surveys for the rest of the Government on an enumeration that itself is not an enumeration anymore, in the old sense, but a sample. I think that is a very risky course to take.

So, to conclude, Mr. Chairman, members of the committee, I am here to urge you to take a look at the census as one of the most venerable civic institutions of the United States, and to do all you can to protect it. Once the trust in it is undermined, it would be very hard, if not impossible, to restore it.

[The prepared statement of Mr. Chapman follows:]

PREPARED STATEMENT OF BRUCE K. CHAPMAN, PRESIDENT, DISCOVERY INSTITUTE,
SEATTLE, WA

Good morning, and Happy Leap Year, Mr. Chairman and members of the Committee. I am honored to be asked my opinion about the 2000 Census.

Leap Year, indeed, is a good time to review the Census Bureau's plans, because a great statistical leap into the 21st century is what the Bureau is proposing. The

Congress may wish to look very hard before you take this leap, however, because it is a leap into the unknown.

I am particularly concerned about the plan to use sampling to adjust the hard count for the 2000 Census. Looked at through a green eye shade, it may seem prudent. Obviously, it is financially burdensome to obtain the last 10 percent or so of Census names, so sampling looks like a winning solution. Undoubtedly that thought must have weighed heavily in the recommendations of several bodies that are advocating adjustment. But if money is what matters most, you could save even more by relying on still more sampling. The Census is, indeed, expensive. But consider what you get with it. It holds up the whole statistical system of the United States. Having said that, I do acknowledge the legitimacy of the cost issue.

The statistical accuracy argument must also be acknowledged. It is embarrassing to have an undercount after every decennial Census. However, it is an embarrassment the republic has managed to survive each decade for two centuries. I am not sure how well we would survive its alternative. The problem with sampling and adjustment does not lie only with accuracy, which statisticians can debate, but with its admitted core of artificiality.

My argument with adjustment, thus, is not primarily a matter of statistical methodology. That's not my background, in any case. If anybody could pull off an adjustment in a conscientious manner it is the U.S. Census Bureau. My experiences at the Bureau left me with the greatest respect for the honesty, ability and public spirit of the people who work there, right up to and including the outstanding current director, Dr. Martha Riche. Moreover, many of the statistical and management innovations the Bureau has proposed for the 2000 Census, including new "matching" software to spot double-counting, the digital "capture" of data on forms, more user-friendly forms and the added mail contacts with each address, all have excellent prospects, in my view. The 2000 Census, as with past censuses, will see improvements, regardless of adjustment.

Should an official adjustment take place, however, and you have one *national* number, the Census will still not have counted everyone, even in theory. For example, the present plan will have done nothing to count the literally hundreds of thousands of Americans who are not employed by the government and who are temporarily living overseas. (Overseas government employees now are counted, of course.) The people I'm talking about are U.S. citizens; some of them own homes and other property here; some are on the voter rolls and motor vehicle license lists. I certainly agree with the proposal to explore the use of many other administrative records, such as Social Security and welfare rolls, to seek names of people who may have been missed in the Census head count. I also understand why the Bureau must count illegal immigrants, even though they may lack reliable addresses and their stay in this country may be very temporary, indeed. But shouldn't we also be trying to identify citizens of the U.S. who happen to be out of the country around the Census time, but whose names can be found in public records and who count the United States as home? Isn't their stake in the country important enough to be reflected in the numbers that are used, for example, to apportion Congress?

The answer given by the Census Bureau, with OMB no doubt looking over its shoulder, is that such a search would be costly. Well, if so, why isn't it proposed to sample and adjust for the overseas Americans, too? But, meanwhile, the controversy of this very subject returns us again to the central problem in the 2000 Census plan, and that is the moral or philosophical concept of an official, adjusted enumeration. Sampling is a proven and accepted form of measurement, but there usually has to be some hard, broadly accepted data base from which the sample is drawn. More importantly, I can't think of a statistical sample that is so closely tied to a *civic act* as is the Census enumeration, any more than I can think of an election survey that has the moral authority of an actual election.

The Census enumeration is a participatory function of government hallowed by Constitutional mandate. There are not too many comparable civic acts; voting is one, serving on juries is another. Perhaps participation in the Census falls between those two—it is neither as voluntary as voting, nor as demanding as jury service. In any case, the Census is one of the fundamental democratic institutions of our society, and I believe, it is a noble one. It gives us the numbers that make other numbers meaningful. It must not only be trustworthy, but palpably trustworthy.

The current Census director herself has spoken of the three legs of the Census stool that must dictate the process: cost, accuracy and *public perception*. The first two legs are important, as I have acknowledged, but if the latter breaks, the whole construction comes down. The term "public perception" could also be described as trustworthiness. In a time when public *mistrust* of government is rife, I question a change that would introduce the invention of statistical persons into the Census—

robots constructed of sampled data and intellectual abstractions—to stand in the place of real human beings.

The Census has long represented an honest attempt to count every person in the United States—every real person, not every “virtual” person, not every “statistical analog” for a person, not every “full time equivalent” of a person, but every real person. Once citizens realize that the Census number is partly an invention—however brilliant an invention it is—they will begin to question many things. Suspicions will be aroused. How, some will ask, do we know that the creation of statistical persons does not have some partisan or factional or geographic regional basis? How does this corrupted Census count infect other numbers and political institutions?

Let me stress again my own full confidence in the integrity of the individuals who serve at the U.S. Census Bureau. It is largely because I don't want to see that integrity even put up to question that I raise this problem of perception—of evident trustworthiness.

Let's next consider legal problems with the Census; do you think you have them now? In fact, the costly lawsuits challenging the Census invariably are won by the government. Common sense tells a judge that a good faith effort to count every person cannot be faulted for occasional human mistakes, especially when plaintiffs can seldom if ever produce evidence of actual individuals who have not been counted. But under an adjusted Census it will not be difficult at all to produce evidence that the Census erred, and erred intentionally, by imputing fictitious people into neighborhoods where the real neighbors can readily prove that the interlopers do not, in plain truth, exist. In some cases, the fictional, imputed people are going to amount to a difference between drawing a redistricting line one place rather than another, and maybe even change the apportionment of states. (After all, isn't that part of the whole idea?)

In such cases, I suggest, common sense will now become the government's enemy, because you will need to give all the judges and ordinary citizens an extensive course in statistics to persuade them that it is just and fair to invent people for something as supposedly straightforward as a U.S. Census. How especially do we explain including invented people in determining such matters as apportioning Congress when, as I noted before, we do not count real American citizens living abroad?

Maybe the American public will accept all this with total unconcern or even satisfaction. But maybe, instead, this will be seen as one more way the government is trying to pull a fast one on the people. Won't any resulting public cynicism make the hard count even more difficult to get in the first place? If it contributes to further falloff of response, won't that and the ever-present financial incentives, lead to still more sampling in subsequent Censuses, in a downward spiral? And won't it seem perfectly acceptable soon to conduct the whole Census through sampling? And won't there be an irresistible temptation to try, Census by Census, to improve the content of what constitutes the invented persons created through the sample, and hence the meaning of such invented persons?

To conclude, Mr. Chairman and members of the Committee, I am here to urge you to look at the Census as one of the most venerable civic institutions of the United States, and to do all you can to protect it. Once trust in it is undermined, it will be very hard, if not impossible, to restore.

Mr. CLINGER. Thank you very much, Mr. Chapman.

As the panel has heard bells ringing all over the place here, we have a vote in progress. I think this might be a time to take a break. I apologize to the panel for these interruptions, but we do have a responsibility to vote. So we will recess for 10 minutes and be right back.

[Recess.]

Mr. CLINGER. The committee will resume its sitting.

We anticipate being joined by some additional members here shortly, but, in the interest of moving the hearing along, I would again thank the panel for their patience in dealing with the vagaries of the congressional schedule, and now ask Dr. Bailar if you would give us your testimony. You can give it in full or summarize, however you choose.

Ms. BAILAR. I will not give it in full and try to skip through to try to help others have more time.

It is a real pleasure to be here today to testify regarding the current plans of the Census Bureau to conduct the 2000 census. As you know, I worked at the Census Bureau for almost 30 years and was deeply immersed in the last four decennial censuses. I think the publication, the Plan for Census 2000, documents the current thinking of the Bureau for new technology, new methods, new partnerships, and reduced costs for the Census 2000.

In addition, the Bureau sent me, at my request, some results memoranda from the 1995 census test. Though the new plans are very exciting, the test results are very encouraging. It does seem as if the Bureau has opened up to new ideas and is looking outward. And I think that is one thing that hasn't really been covered very well in the hearing today. There are a lot of new plans; they are being tested; and they will result in increased coverage. So I'm sorry to see so much of the focus on just the adjustment issue.

One of the steps is building the address list and providing maps. This is one of the most fundamental steps in ensuring a good census. And I think the Census Bureau took an enormous step forward preparing for the 1990 census when it built the TIGER system.

However, the basic methodology for taking a census and building the address list remain the same. Instead of using that final list of addresses that had been painstakingly built prior to and during the preceding census, the Bureau began all over again, dropping this prime resource. The Bureau bought, instead, a commercial mailing list and then tried to update it with the help of the U.S. Postal Service.

However, Census employees knew very well that the quality of the final list was heavily dependent on the quality of the commercial list bought. And local governments frequently said they had better information. The partnership with the U.S. Postal Service will help improve the list, and the results from the 1995 census test of the local update of census addresses sounds very promising.

The Bureau provided two training workshops for local officials before giving them the census address lists and maps to review. And from Oakland, the Bureau added 93 percent of those housing units submitted to update the master address file and, in Paterson, NJ, added 57 percent.

A very important finding from this study was that most of the ads in Paterson were at small, multiunit structures containing two to four housing units. Most of those in Oakland were either single units or these small multiunits. These small multiunit structures are the kinds of units at which the Census has had traditional coverage problems before. So I think these partnerships are starting to show some very promising results.

I would like to skip to the census questionnaire, because I think, here again, are some very exciting results that are coming forward. In all four of the censuses that I worked on, the census questionnaire was constrained because of FOSDIC, the film optical sensing device for input to computers. It was designed to make the questionnaire easier for processing. So the ease for census respondents to fill it out was sacrificed. Part of the reason for the preference for FOSDIC was that no keying of the data was necessary, and thus it was supposedly less expensive.

During all these years, respondents complained about the forms and how confusing they were. Members of advisory committees recommended changes. Different kinds of forms were tested in the 1980 census and were somewhat successful, yet nothing happened, and FOSDIC reigned.

One of the things I have kept in touch with the Bureau about is the extensive testing of user-friendly questionnaires. In addition to the questionnaires themselves, which have been tested and shown to be much more effective, the 1995 test evaluated the respondent friendly approach. There is a multiple mail contact strategy, with a prenotice letter, the initial questionnaire, a reminder post card, and a replacement questionnaire for those households which did not yet respond.

The census test evaluated the results of the replacement questionnaire, a strategy that could be very costly, but the results show that the replacement questionnaire was very effective improving the response rates by 17.9 percentage points over all questionnaires in both sites, Paterson and Oakland. The improvements were even stronger for the three long forms tested.

This research is very encouraging. Previous tests had shown that the prenotice and the reminder post card together improved mail response by about 12 percentage points. So it seems like the Bureau has now put together a winning strategy for the delivery of the questionnaire and the questionnaires themselves.

However, the Bureau has cautioned that if replacement questionnaires were needed at the same rate in 2000 as in the 1995 census test, that would translate into the need for 64 million replacement questionnaires. With a tight timeframe and the cost, that could be an unfeasible sized operation.

Another part of the 1995 census test was to compare three different versions of the long form. Now, many have suggested using the census only to collect data needed for reapportionment and redistricting, thus allowing a short form as the only census questionnaire.

However, as long as other Federal agencies, States, and local governments need the data on the long form, for various programs and planning purposes, and no plans have yet been made to fund a continuous measurement proposal, then the long form is needed. There really is a pull between priorities here, and one that I think only Congress can decide on the proper priorities.

I would like to turn now to the nonresponse follow-up strategy, and it has been with this strategy that I have had the sharpest differences of opinion with the Census Bureau in the past. In the past, by combining a nonresponse follow-up to pick up questionnaires not mailed in, and then an enumerator check of every nonresponse household to determine occupancy status, and then a catch-all group of projects labeled "Coverage Improvement," the census period went on, for many sites, for months and months.

The procedures were expensive and extremely redundant, resulting in the highest percentage of gross census errors, omissions, plus multiple counting in 1990 than in any previous census. Now, other countries limit the census period. But the United States lets it drag out until the Bureau needs to meet the December 31 deadline of reporting the counts.

Data that had been gathered and evaluations have shown that this outmoded procedure is costly, in both dollars and accuracy. Census questionnaires completed by Census follow-up enumerators are of much poorer quality than those completed and returned by mail.

Some of the steps in the proposed nonresponse strategy are not absolutely clear to me. I understand that they are asking that March be declared "National Be Counted Month," and the Bureau will use this time to remind people in various ways to complete the census interview. Administrative records will be used to supplement the count and nonresponding households, and this will happen before any enumerator follows up. The post office will provide information on vacant units.

Given those three inputs, the Bureau will start computing a response rate on a daily basis, and, at some point, enumerators will be assigned to nonresponse follow-up and continue until a 90 percent response rate has been achieved in each county. Upon hitting the 90 percent, the Bureau will then sample, at a rate of 1 in 10, the remaining nonrespondent households and use the information collected to estimate the total county population.

Perhaps I have misunderstood, but, if not, I commend the Census Bureau on moving ahead to use a recommendation from many advisory groups, two panels of the Committee on National Statistics, and many other interested observers. Many of us could not understand why the Bureau, an agency that led the world in introducing sampling, was so backward with the census.

The Bureau was famous far and wide for its innovation in sample surveys, and the lack of forward thinking in the census was always a puzzle. However, given the interest in moving forward to using sampling, why set the rate at 90 percent before sampling is used? Much larger cost savings could accrue if sampling was started when the rate hit 70 percent or 75 percent. And the Bureau statisticians obviously are aware of this, and one wonders why they are being so cautious.

Now, perhaps the answer lies in their analysis of negative implications, where they worry about the margin of uncertainties in the totals obtained when sampling is used. The tradeoff computed should be in terms of the total error in county-level data, not just the increase in variability due to sampling. There will be a reduction in bias and a big reduction in cost. The reduction in bias will come not only from adding respondents to the census but also from not including the same willing respondents multiple times. Also, there are many areas of the country where 90 percent is going to be unattainable. Again, the census will drag on.

It is also not clear if the enumerator follow-up or the 1 in 10 sample would use the long form or whether only the short form would be used. I would like to urge the use of only the short form to get the job done and the people counted. Now, before some say I don't show the proper concern about the long form, let me say that, in my mind, the long forms always suffer during follow-up, and in many areas it wasn't used. Perhaps it's better to recognize what really happens up front and plan for it.

Also, for those who are really worried about an increase in variability in census statistics, let me just say that, at least in 2000, the

variability will be explicitly recognized and computed. In the past, there was also a sample during follow-up, but it was an uncontrolled, unscientific sample. The sample was whatever happened to be finished at the date scheduled so the office could close. No sampling variances could be computed. Only some technical reports carried data on sample bias. With explicit sampling methods used, the sample can be controlled and the variability measured.

Now, the Census Bureau has also committed itself to using administrative records to improve the census and will explore, as part of its experimental program in 2000, an administrative census methodology. The use of the administrative data to replace advance listing operations for special populations and to provide census data seems useful and cost-effective. The use in supplementing the count for nonresponding households has the potential for increasing quality and holding down cost. And the use in filling item nonresponse is also a step toward improving quality.

Now, I would like to skip over to the one-number census. The decision to go with a one-number census in 2000, incorporating the results of a very large sample to detect coverage problems, is in the tradition that the Bureau established in earlier censuses.

The most relevant example of this is the imputation of people into the census which was done in 1970, 1980, and 1990. The Bureau decided on a statistical model for deciding, on the basis of neighboring households, how many people to impute into housing units that were known to exist but no information was available on the number of occupants. The Bureau rolled this number up into the total count. The data were available on the number of imputations when the census data were published. No special attention was drawn to the imputation, nor were separate census final totals released with and without imputation.

Now, the Bureau has published the results of its coverage evaluation studies since the 1940 census. Results show that an undercount persists and that the differential undercount between the white population and minority populations is substantial. In the 1990 census, there were many within the Bureau who wanted to incorporate the results from coverage evaluation into the census results before the December 31st deadline, but the final plans did not allow for that. The field enumeration did drag on, so the timing just did not work.

The Census Bureau has been doing sustained research, building on its methodology from 1990, to estimate the coverage error in the census. Before making any decision on whether to do this adjustment or not, I would suggest that we wait to see what the results are from the 1995 test census about the use of this adjustment. They have improved the methodology from the last census, just as they do every census period. However, publishing the final count that includes the estimated undercount is an excellent step forward, providing census results much fairer and more accurate than in the past.

I would like to just say that the Census Bureau is a very special place to me, since I spent most of my working life there. As I reviewed the census plans for Census 2000, I felt a sense of pride in the accomplishments of the staff during the decade of the 1990's. They have rethought the census. They have examined such sacred

cows as FOSDIC, complete enumerator follow-up, and many more, and decided to move ahead with innovation and improvements.

Just as the Bureau led the rest of the world in developing sampling methods, designing punch card machines, and developing a mail-out/mail-back census, the Bureau is now building on its past strengths to advance its decennial census in a technologically and methodologically sound manner. I think they are exhibiting caution in the careful testing that they are doing while still moving forward with a daunting task. It is a work in progress, and I wish them well.

Thank you.

[The prepared statement of Ms. Bailar follows:]

PREPARED STATEMENT OF BARBARA A. BAILAR, VICE PRESIDENT, SURVEY RESEARCH,
NATIONAL OPINION RESEARCH CENTER

It is a real pleasure to be here before you today to testify regarding the current plans of the Census Bureau to conduct the 2000 Census. As you know, I worked at the Census Bureau for almost 30 years and was deeply immersed in the last four decennial censuses. In my position as Associate Director for Statistical Standards and Methodology, I contributed to the development and evaluated the methodology and techniques used in census tests and the censuses themselves. I am now the Vice President for Survey Research at the National Opinion Research Center (NORC), a firm that carries out survey research for governments, foundations, and businesses. I retain a strong interest in the work of the Census Bureau.

The publication, *The Plan for Census 2000*, documents the current thinking of the Bureau for new technology, new methods, new partnerships, and reduced costs for the 2000 Census. In addition, the Census Bureau sent me, at my request, some results memoranda from the 1995 census test. The new plans are very exciting and the census test results very encouraging. It seems as if the Bureau has opened up to new ideas and is looking outward. One visible sign of this is their move away from a FOSDIC form, designed to make processing easier, to a user-friendly questionnaire, designed to make responding to the census easier. Let me focus my comments on areas of change and close with some concerns about cost.

BUILDING THE ADDRESS LIST AND PROVIDING MAPS

One of the most fundamental steps in ensuring a good census is the ability to have the most complete list of addresses possible and to be able to locate those addresses on maps. The Census Bureau took an enormous step forward preparing for the 1990 Census when it built the TIGER (Topgraphically Integrated Geographic Encoding and Referencing) system, a system used extensively by all survey research firms and other businesses who have need for good maps. However, the basic methodology for building the address list remained the same. Instead of using the final list of addresses that had been painstakingly built prior to and during the preceding census, the Bureau began all over again, dropping this prime resource. The Bureau bought a commercial mailing list and then tried to update it with the help from the U.S. Postal Service. However, census employees knew very well that the quality of the final list was heavily dependent on the quality of the commercial list bought. Local governments frequently said they had better information.

The idea of partnerships, not just with other Federal agencies such as the U.S. Postal Service and the U.S. Geological Survey, but with state, local and tribal governments, is a major step forward. For many censuses, other entities have complained that, though they were willing to offer help, the Census Bureau did not welcome them. These were not true partnerships. It sounds like things are changing.

The results from the 1995 Census Test of the Local Update of Census Addresses (LUCA) sounds promising. The Bureau provided two training workshops for local officials before giving them the census address lists and maps to review. From Oakland, the Bureau added 93% of those submitted to the Master Address File (MAF) and in Paterson, N.J. added 57%. Though the Paterson results may seem disappointing, it is actually a good thing that a very realistic occurrence happened in 1995. The Paterson approach to determining the number of housing units in a multi-unit building was quite different from the Bureau's criteria. In an effort to determine if the Paterson criteria were more valid, the Census staff found many of the disputed units were nonexistent. Altogether, the LUCA program improved coverage of the precensus MAF by 1.8% and 0.4% in Oakland and Paterson, respec-

tively. In the more rural sites in Louisiana, the total number of adds submitted was low, probably because the address list was developed immediately prior to the Census. However, of those submitted, 73% were legitimate adds.

Two important findings from this study are:

1. Most of the adds in Paterson were at small multiunit structures containing 2 to 4 housing units; most of those in Oakland were either single units or at small multiunits. These small multiunit structures are the kinds of units at which the Census has had coverage problems before, so these partnerships are providing important results.
2. It is expensive for local governments to participate in this program. They need to have staff, computers, and time. Many of the Louisiana parishes said they did not have resources. I suspect that will be heard even more in 2000. Unless the Bureau can help with resources, the partnership program may not be a program except for those units of government which can afford to provide resources. There could be hard feelings resulting from offering a partnership but no resources.

Another caution is that the Bureau must do all it can to help the partners to play their role. Every local authority is going to complain that 30 days is not enough time to review the address lists and maps. They are going to challenge the Bureau about the criteria for defining housing units. Knowing this ahead of time, perhaps the Bureau can help in the training sessions, in the announcements, and in the implementation to give local authorities more time and more understanding. The improved final products will be worth the effort.

This is an exciting new development by the Bureau, adding to their past achievements at working with Federal agencies. It is still evolving.

THE CENSUS QUESTIONNAIRES)

In all four of the censuses on which I worked the census questionnaire was constrained because of FOSDIC. To make the questionnaire easier for processing, the ease for census respondents to fill it out was sacrificed. Part of the reason for the preference for FOSDIC is that no keying of data was necessary, and, thus, was supposedly less expensive. However, with the extensive preparation of the questionnaires for FOSDIC, the filming, the reading, and so forth, the cost was higher than anticipated.

During all these years, respondents complained about the forms and how confusing they were. Members of Advisory Committees recommended changes. Different kinds of forms were tested in the 1980 Census and were somewhat successful. Yet nothing happened and FOSDIC reigned. One of the things I have kept in touch with at the Bureau is the extensive testing of user-friendly questionnaires. The results have been very encouraging, showing an increase in response rates for the newly designed questionnaires.

In addition to the questionnaires themselves, which were tested and shown to be effective earlier, the 1995 test evaluated the respondent-friendly approach. With the multiple-mail contact strategy, there will be a prenotice letter, the initial questionnaire, a reminder postcard and a replacement questionnaire for those households from which the initial questionnaire was not received. The 1995 census test evaluated the effectiveness of the replacement questionnaire, a strategy that could be very costly. The results showed that the replacement questionnaire was very effective, improving the response rates by 17.9 percentage points over all questionnaires and both sites. Improvements were stronger for the three long forms tested.

This research is very encouraging. Previous tests had shown that the prenotice and the reminder postcard together improved mail response by about 12 percentage points. The 1995 test gave stronger results showing the efficacy of the replacement questionnaire. It seems like the Bureau has put together a winning strategy. However, the Bureau has cautioned that if replacement questionnaires were needed at the same rate in 2000 as in the 1995 census test, that would translate into the need for 64 million replacement questionnaires. The tight time frame and the cost may make an operation of this size unfeasible.

Another part of the 1995 census test was to compare three different versions of the long form. The short form asked only 6 questions and had 8 pages. The three long forms tested ranged between 16 and 53 questions and 20 to 28 pages. The results from the test were consistent over all three sites: the shorter the form, the better the response.

Many have suggested using the census only to collect data needed for reapportionment and redistricting, thus allowing a short form as the only census questionnaire. However, as long as other Federal agencies, states, and local governments need the data on the long form for various programs and planning purposes, and no plans

have been made to fund a continuous measurement proposal, then the long form is needed. However, the length really does drive behavior. There is a real pull between priorities here, between the need to get the greatest number of people counted for reapportionment and redistricting purposes and at the lowest cost and the need to get the data from the sample forms once every ten years. Only Congress can set these priorities.

Another responsive initiative the Census is planning is the delivery of Spanish language questionnaires in the mail in blocks with high concentrations of Spanish-speaking households. Again, this is a concern that has been voiced for at least two previous censuses. The Bureau's response was that if a household needed a Spanish-language questionnaire, then a household occupant should call the Bureau and ask for it. This was not seen as responsive by many.

In the 1995 census test, areas targeted were block groups with 15% or more of the households where Spanish was the primary language spoken. The results of the test were quite mixed and no conclusions could be drawn. However, the goodwill generated by trying to be responsive to ethnic concerns may help response rates in the context of the decennial. This is an area where more testing needs to be done since the cost of mailing two initial questionnaires to 15 million households by mail, and 6 million replacements by mail will be high.

A natural result of mailing out Spanish-language questionnaires is for other language groups to want such service. Since Spanish is the most prevalent language other than English spoken in the U.S., it makes sense to test the approach with them. The Bureau has taken another step in making questionnaires available in other languages by means of its Be Counted program. This program will make questionnaires available in many languages at numerous locations, such as post offices, community centers, banks, convenience stores, and the like. The results from the 1995 Census test are encouraging. The results show a number of the forms were picked up, more in urban areas than in rural. Post offices seemed to be a very productive site. Also, the Bureau was able to evaluate the joint effectiveness of the Be Counted forms, reverse telephone interviews and the USPS determination of vacant units. The increases in response rates because of these operations were significant over all sites and all types of forms. The increase in goodwill by giving people more than one way to respond may be very important in 2000.

NONRESPONSE FOLLOW UP STRATEGY

It has been with the nonresponse follow up strategy that I have had the sharpest differences of opinion with the Census Bureau. By combining a nonresponse follow up to pick up questionnaires not mailed in, an enumerator check of every nonrespondent household to determine occupancy status, and then a catchall group of projects labeled "coverage improvement," the census period went on, for many sites, for months and months. The procedures were expensive and extremely redundant, resulting in the highest percentage of gross census errors (omissions plus multiple counting) in 1990 than in any previous census. Other countries limit the census period; the U.S. lets it drag out until the Bureau needs to meet the December 31 deadline of reporting the count. Data gathered in evaluations have shown that this outmoded procedure is costly in both dollars and accuracy. Census questionnaires completed by census follow up enumerators are of much poorer quality than those completed and returned by mail.

Some of the steps in the proposed nonresponse strategy are not clear to me. I understand that March will be declared National Be Counted Month. The Bureau will use this time to remind people in various ways to complete the census interview. Administrative records will be used to supplement the count in nonresponding households and this will happen before any enumerator follow up. Also, the U.S. Postal Service will provide information on vacant units. Given those three inputs, the Bureau will compute a response rate on a daily basis. At some point enumerators will be assigned to do nonresponse follow up and continue until a 90% response rate has been achieved in each county. Upon hitting 90%, the Bureau will then sample at a rate of 1 in 10 the remaining nonrespondent households and use the information collected to estimate the total county population.

Perhaps I have misunderstood. If not, I commend the Bureau on moving ahead to use a recommendation from many advisory groups, two panels of the Committee on National Statistics, and many other interested observers. Many of us could not understand why the Bureau, an agency that led the world in introducing sampling, was so backward with the Census. The Bureau is famous far and wide for its innovation in sample surveys. The lack of forward thinking in the Census was always a puzzle.

However, given the interest in moving forward to using sampling, why set the rate at 90% before sampling will be used? Much larger cost savings can accrue if sampling is started when the rate hits 70 or 75%. The Bureau statisticians obviously are aware of this and one wonders why they are being so cautious.

Perhaps the answer lies in their analyses of negative implications, where they worry about the margin of uncertainty in the totals obtained when sampling is used. However, this doesn't seem sensible, because they also say that administrative records can be used to complete information for about 5% of nonresponding households and that the use of these records will improve coverage. The tradeoff computed should be in terms of the total error in county-level data, not just the increase in variability due to sampling. There will be a reduction in bias and a big reduction in cost. The reduction in bias will come not only from adding respondents to the census but also from not including the same willing respondents multiple times.

It was also not clear if the enumerator follow up or the 1 in 10 sample would use the long form or whether only the short form would be used. I would urge the use of only the short form to get the job done and the people counted.

Before some say I don't show the proper concern about the long form, let me say that in my mind the long form always suffered during follow up. In many areas, short forms were used extensively. Perhaps it is better to recognize what really happens up front and plan for it.

Also, for those who are really worried about an increase in variability in census statistics, let me just say that at least in 2000, the variability will be explicitly recognized and computed. In the past, there was also a sample during follow up, but it was an uncontrolled, unscientific sample. The sample was whatever happened to be finished at the date scheduled so the office could close. No sampling variances could be computed; only technical reports carried some data on sample bias. With explicit sampling methods used, the sample can be controlled and the variability measured.

USE OF ADMINISTRATIVE RECORDS

The Census Bureau has committed itself to using administrative records to improve the census and will explore, as part of its experimental program in 2000, an administrative census methodology. No details of such an experiment were furnished. With the uses of administrative records projected for the 2000 Census, the quality of the census should improve.

The use of administrative data to replace advance listing operations for special populations and to provide census data seems useful and cost effective. The use in supplementing the count for nonresponding households has the potential for increasing quality and holding down costs. The use in filling in item nonresponse is also a step toward improving quality. In fact, administrative records have been used after the fact to evaluate census quality. It seems a logical step to use them to avoid missing data.

The concerns of the Bureau seems to be twofold. One concern is with the public's perception of privacy. Will the public be concerned about this? Many Census Bureau staff, including enumerators, have experienced members of the public expressing their belief that all government records are already merged into one great big file. However, an experience in Sweden may be useful to try in the U.S. The Swedish Statistical Office wanted to use administrative records for occupation and industry data. They tried it, and went to a sample of respondents and compared administrative data with respondent data. They then asked the respondents if they would object to the use of administrative data if it meant they would not be visited to collect the data. The overwhelming response was to use the administrative data. So instead of asking people about their privacy concerns, ask them about a trade-off. The answers may be more realistic.

The second concern is that the administrative records may not give the same level of completion as a mail response or a direct interview. In my mind, that is not the correct comparison. There are cases for which there has been no mail response and may be no enumerator contact either. So the comparison should be the administrative data with last resort information which may be supplied by neighbors, landlords, etc., or by imputation. In these cases, the administrative records are probably better.

In any case, the way the Bureau is going to proceed is not clear. The role for administrative records in the 2000 Census seems cost effective and will add to quality. The experiment with an administrative records census needs further specification.

A ONE-NUMBER CENSUS

The decision to go with a one-number census in 2000, incorporating the results of a very large sample, to detect coverage problems, is in the tradition that the Bureau established in earlier censuses. The most relevant example of this is the imputation of people into the census which was done in 1970, 1980, and 1990. The Bureau decided on a statistical model for deciding, on the basis of neighboring households, how many people to impute into housing units that were known to exist but no information was available on the number of occupants. The Bureau rolled up this imputation into the total count. Though data were available on the number of imputations when the census data were published, no special attention was drawn to the imputation, nor were separate census final totals released with and without imputation.

The Bureau has published the results of its coverage evaluation studies since the 1940 census. Results show that an undercount persists and that the differential undercount between the white population and minority populations is substantial. In the 1990 Census, there were many within the Bureau who wanted to incorporate the results from coverage evaluation into the census results before the December 31 deadline. Because the field enumeration was allowed to drag on, the timing did not work. Of course, other decisions were made on a political basis that precluded this opportunity.

The Census Bureau has been doing sustained research, building on its methodology from 1990, to estimate the coverage error in the census. The results from the 1995 Census test are not yet available; I will watch with great interest over the coming months to see how the integrated coverage measurement worked in the census test and what has been decided about the use of Census Plus or Dual System Estimation.

QUALITY CONTROL

Quality control in the decennial census has not gone well in the past, not in the field enumeration and not in data processing. It was viewed as a bottleneck, as providing results too late for effective action, and was costly. However, the Bureau showed it could implement effective and timely quality control procedures when it evaluated the quality of the 1990 coverage evaluation study.

I am concerned that the Bureau is instituting so many new procedures and processing steps without having adequate quality control. Not that I am advocating quality control for documentation purposes only, but I believe procedures should be built into the census processes that tell the Census staff quickly if something is going wrong. That the Bureau staff worries that funding constraints limit their quality control program makes me very concerned.

DATA PROCESSING

The brief description about data processing sounds good, but no test results are available. Moving to electronic imaging, optical mark recognition and intelligent character recognition is a significant improvement in technology. Yet 50% of the write-in entries will be keyed and keying is prone to error. This is an area in which I would like to hear more about the Bureau's plans and the success of the new technologies in census tests.

COSTS

The projected cost for the 2000 Census is still very high. Yet it is clear that the Bureau is planning to streamline its operations. There are some things which do not seem to be in their plans that will not be missed! The redundant, error-prone coverage improvement programs, the enumerator follow up of 100% of all vacant units, and the preparation of forms for FOSDIC processing. I was not able to find out whether the census follow up period will be shortened. That too would be a welcome change. Yet, in reading these plans, I have concerns about at least 3 areas in which I think more money may be needed. These are: the development of the technology and building the systems that will process the census quickly; quick and efficient quality control processes; and the adequate testing in the 2000 Census itself of new procedures for the 2010 Census. All of these, if not adequately funded, can signal problems for the censuses ahead.

CONCLUSION

The Census Bureau is a very special place to me since I spent most of my working life there. As I reviewed the plans for Census 2000, I felt a sense of pride in the accomplishments of the staff during the decade of the 90s. They have rethought the

census. They have examined such "sacred cows" as FOSDIC, complete enumerator follow up, and many more, and decided to move ahead with innovation and improvements. Just as the Bureau led the rest of the world in developing sampling methods, designed punch card machines, and developing a mailout-mailback census, the Bureau is now building on its past strengths to advance its decennial census in a technologically and methodologically sound manner. They are exhibiting caution in the careful testing they are doing, while still moving forward with a daunting task. It is a work in progress and I wish them well.

Mr. CLINGER. Thank you, Dr. Bailar. We appreciate your testimony and your perspective that you bring to the issue, because you have had enormous experience in this area over a long period of time. I think it's very helpful to us.

Ms. BAILAR. Thank you.

Mr. CLINGER. Dr. Murdock, you may also give your whole testimony or summarize it.

Mr. MURDOCK. I will try to summarize it, Mr. Chairman.

Thank you very much for offering me the opportunity to talk about the 2000 census and related data collection efforts by the U.S. Bureau of the Census. I come to you as someone who has spent more than two decades assisting State and local persons in using census and related forms of data, and I want to draw on that experience as I talk to you today.

I agree with my distinguished colleague who preceded me in that the Census Bureau is to be congratulated, I believe, on a very careful, innovative plan related to the 2000 census. I am concerned, however, about four aspects of the plans, as I read them, as they may impact the availability and accuracy of information for small population areas, particularly rural areas. Let me talk about each of those in brief.

The first of those is the procedures that are suggested for nonresponse follow-up. To reduce the high cost of the follow-up process, as Dr. Bailar has indicated, the Census has indicated that it will conduct its normal process to a certain level, and then, at 90 percent—and some have suggested at 70 percent—will truncate the census process and do the remainder of the process as the result of a sampling of the remaining households.

Although there is little evidence at this point to know exactly what the implications of this may be, two aspects of sampling, as we know them, suggest that this is likely to produce less accurate figures for small population areas. These aspects are, first of all, that a sample is only as good as the sampling frame on which it is based. That's the list of all the households from which one draws the sample.

The second element of sampling that is very important here is that the smaller the size of the sample, the larger the sampling error. Both of these will be problems in small population areas. The Bureau admits, in its own documentation, that it expects its sampling list to be less complete for rural areas of the country and less complete for many small population areas of the country.

I am particularly concerned about this issue from our experience base in working in rural areas across the South, because the areas that we have found it most difficult to get an adequate sampling frame have been those areas that have hard to enumerate populations, particularly rural minority populations. In sum, about this issue, I am concerned that the use of sampling to complete the cen-

sus count will lead to a degradation in the quality of statistics, the quality of data from the census for small rural areas.

I have a second concern related to the reliance on the continuous measurement system for obtaining sample data for small population areas. Although the Census Bureau now plans to pursue both a sample form for the 2000 census and a separate continuous measurement system, what I am concerned about is that, if funding should be available for only one of these two efforts, the Bureau may choose to employ the continuous measurement system to obtain sample data for census areas.

There are many things about the continuous measurement system that are laudatory. I believe, for the country as a whole, for States, for large metropolitan areas, and for some other areas, it is going to provide vital information that will help us keep ourselves abreast of important changes that are impacting our Nation. The problem for rural areas is that the continuous measurement system has sample sizes too small to produce sufficiently accurate data for small areas. That's one problem.

A second problem is that, even to obtain data that they say will be 25 percent less accurate than it was in the 1990 census, they will have to aggregate monthly surveys over a 3-year or 5-year period to obtain the information that will be used. Let me talk about each of these just for a minute.

First of all, the sampling errors, I believe, will be too large for many decisionmaking purposes. For example, they indicate that the coefficients of variation may be as large as, well, nearly 75 percent for small areas with less than 2,500 persons. What that communicates into or translates into is, if you had an average or a mean household income of \$40,000, it means there would be some considerable probability that you could get estimates that range from \$10,000 to \$70,000.

That degree of inaccuracy is too high a degree for decisionmakers at the local level. Whether one is a small town mayor or city council person, or any other person trying to make decisions about whether one wants to locate a business in a rural area or a small population area, those kinds of errors are too large.

Why is this so problematic? After all, there is only a relatively small proportion, as census figures will tell you, in those areas. Well, the problem is that a majority of the areas for which decisions are made, a majority of the governmental units that affect us in everyday life, that is, the units for which decisions affecting our everyday lives are made, are of that small size. According to the Census' own figures, 48 percent of the 39,500 governmental units in the United States in 1990 had populations of less than 1,000. And two-thirds, more than 67 percent, had less than 2,500 persons.

Historically, the census has been the only data collection effort that has treated small areas in the same way as it has treated larger areas. It has been the only source that could provide high-quality data on key economic and demographic variables for small areas. If decisionmaking is to be increasingly located away from Washington, State and local officials must have accurate and reliable information to make informed decisions.

The second element of this is that, even to obtain this much less accurate data, the Census Bureau will have to aggregate data for

3 years and 5 years, respectively, depending upon the period that we're looking at, for such small areas. They will aggregate monthly surveys. And although one can argue, from a statistical standpoint, that averages may be more stable than the use of a single point in time measure, the problem is knowing to what point in time these 3-year and 5-year averages will apply.

Whereas large population areas will have reliable annual estimates for such factors as income, education, poverty, et cetera, small areas will be forced to rely on these 3-year and 5-year averages. In many rural areas, for example, where farm income varies widely from year to year, this kind of procedure is likely to produce values that are, on average, correct but do not produce any value that is correct for any particular point in time.

The census has always produced a time reference value for such sample items in which all areas had an estimated value for the same period, so that areas could be compared over time and across space. I believe this will be lost in the procedures that are suggested.

The final element related to this issue is simply that, when we create a data base that averages this many areas over time, the ability to manipulate such data, to misuse such data to prove the points that one wishes to prove, will be increased. When we have had a census, we have always had a time period to which all data had to be trued. The potential to use different periods of time to tell different stories will certainly be enhanced.

Let me make it clear, I am not proposing that the continuous measurement system not be used. I believe it must be employed and that it will improve the quality of data for larger areas substantially. I do not, however, want to see the sample form data from the 2000 census supplanted by the continuous measurement system.

Let me talk about a third concern related to the use of administrative records. The Census proposes to use administrative records to supplement the count in nonresponding households, to complete missing responses in otherwise responding households, and to augment the integrated coverage measurement procedures.

After two decades of attempting to use such data, and after a 2-year, very intensive process where we have attempted to link information from administrative records for such services as food stamps, aid to families with dependent children, and Medicaid, I believe that reliance on such data is highly questionable.

The problems are that these data are difficult to obtain, nearly impossible to standardize sufficiently to link them adequately for assessment purposes, and may contain substantial errors. Due to time, I won't go into these, but I think that you will see, in the Census Bureau's own tests of these procedures in the 1995 test census, they found them problematic.

Let me, finally, turn to the issue of accessibility of data. The plans that the Census Bureau has put forward suggest extensive reliance on a variety of data sources, but particularly a lot of use of the Internet. The use of the Internet is increasing exponentially, and certainly, for large urban areas, for colleges, for universities, for State government facilities, this is not a problem.

As I travel the rural areas of our State, however, I find few small town mayors and city offices that use the Internet. Perhaps they will by the year 2000. But I would encourage the Census Bureau to maintain a program to discern who will be impacted, in what form, by the reduction in the accessibility, I believe, of the census data.

Well, let me just summarize with a couple of final comments. The comments that I have made are not intended to depreciate the Census Bureau's careful planning, nor are they an attempt to suggest that the census need not change. I believe that it needed to change. I believe the Census Bureau is suggesting that it will change. And I believe that the cost-related considerations that are here are things that the Census Bureau needed to address.

What I have attempted to suggest in these comments, however, or what I am suggesting, to plea for, in these comments, is not to forget that the 2000 census is not simply a census, it is the census that marks the beginning of a century and the beginning of a millennium. Its results will serve as a permanent benchmark against which we shall measure our progress for decades, perhaps even centuries to come.

It would be unfortunate if it failed to produce adequate benchmark data for key economic, demographic, and other indicators for a majority of the governmental units in the Nation and was limited in its availability to serve the needs of small population areas.

I thus urge the Census Bureau to continue its planning, and I urge it make attempts to ensure that the census is as adequate, as accurate, as complete and accessible as possible for use by rural and other small population areas in the United States.

Thank you.

[The prepared statement of Mr. Murdock follows:]

PREPARED STATEMENT OF STEVE H. MURDOCK, DIRECTOR, DEPARTMENT OF RURAL SOCIOLOGY, TEXAS A&M UNIVERSITY

Thank you Mr. Chairman and members of the committee for allowing me to comment on the plans for the year 2000 Census and related data collection efforts by the U.S. Bureau of the Census.

My name is Steve H. Murdock. I am Professor and Head of the Department of Rural Sociology at Texas A&M University. I am also Chief Demographer for the Texas State Data Center. In these roles, I have been involved in assisting state and local persons in using data for large and small areas, and in analyzing such data, for more than 20 years. In preparing this testimony I have relied on that experience base and on that of numerous colleagues, in particular Dr. Paul Voss who is Chair of the Department of Rural Sociology at the University of Wisconsin-Madison and a demographer with extensive experience in small-area population data dissemination and analysis.

As with many demographers and other users of census data, I am excited about many of the Census Bureau's plans for the 2000 Census and post-census data collection activities. The use of improved questionnaire designs, new forms of technology, integrated address lists developed with other federal and local agencies, the potential to produce a single number census through the use of integrated coverage methods, and other features which promise to improve the completeness of the census count, decrease differentials in undercount rates, and reduce respondent burden, while also reducing costs are clearly commendable goals (U.S. Bureau of the Census 1996a). The Bureau is to be commended for careful, innovative planning related to the 2000 Census and related activities.

I am concerned, however, about several aspects of these plans, particularly as they may affect the availability and accuracy of information for small areas. I would like to discuss my concerns related to four issues:

1. The capability of the proposed nonresponse followup methods to produce accurate data for small population areas in the rural United States

2. The potential use of the Continuous Measurement System to replace sample form data from the Census;
3. The reliance on administrative records to substitute for census information;
4. The plans to limit the dissemination of census information largely to electronic data available on the internet.

NONRESPONSE FOLLOWUP PROCEDURAL CONCERNS

To reduce the high costs associated with followup procedures, the Census Bureau is proposing to make more extensive use of sampling methods to complete the census count. As I understand it, they would obtain responses to the Census from mail questionnaires, attempt to acquire data on additional households using Computer Assisted Personal Interviews by telephone and then at some point truncate the census process. This point of truncation has been variously discussed as being at 90 percent of expected households responding or at lower levels such as 70 percent. The remaining households would then be estimated using a sampling procedure.

Although there is little evidence available at this point to determine the effects of this procedure on the accuracy of data, two basic aspects of sampling dictate that such procedures will likely reduce the accuracy of data for small areas relative to those used historically in the Census. In any sampling procedure, the sample is only as good as the sampling frame from which the sample is drawn (the list of all households in an area from which a sample is drawn) and, for any sample, the smaller the size of the sample the larger the sampling error.

The Census Bureau readily acknowledges that the listing of housing units for rural areas will likely be inferior to those for other areas because processes, such as the address coding being done in conjunction with the extension of 911 services, will not be completed in time for use in the 2000 Census. The Census also acknowledges that they have not yet completed their assessment of the sampling errors for such methods for small areas. I believe that the use of other than full followup procedures in rural areas will reduce the accuracy of sample data for many rural areas. In addition, I am concerned that such sampling errors will be especially pronounced in areas where difficult to enumerate groups live. Thus, our experience in surveys in rural areas in the South suggest that existing listings are more likely to miss poor minority households than other households. In sum, I am concerned that the use of sampling to complete the count for the 2000 census could have deleterious impacts on the accuracy of data for small areas. Since these elements of inaccuracy would, in turn, likely disproportionately impact minority racial/ethnic groups, such problems could also impact the capability of the Integrated Coverage Measurement procedures to produce accurate estimates of the level of undercount.

CONCERNS RELATED TO RELIANCE ON THE CONTINUOUS MEASUREMENT SYSTEM FOR OBTAINING SAMPLE DATA FOR SMALL-POPULATION AREAS

Although the Census Bureau presently plans to pursue both a sample form for the 2000 Census and a separate continuous measurement system, I am concerned that, if funding should only be available for one of these two efforts, the Bureau may choose to employ the Continuous Measurement System to obtain sample data for census areas rather than collect sample-form data for the 2000 Census using the sampling ratio of the previous census. The Continuous Measurement System would involve the use of monthly surveys (now to be named the American Community Survey) to estimate such key characteristics as income, education, industry of employment, and poverty. It should produce excellent, timely, information for large-population areas. It is a system that has substantial merit for keeping Americans apprised of the current patterns impacting the population of the Nation, states, large metropolitan areas, and some other areas. It is thus a system which I generally support as important for ensuring the statistical health of the Nation.

The problem is that the Continuous Measurement System has sample sizes too small to produce sufficiently accurate data for small areas. Although the Census Bureau has not yet produced definitive estimates of the errors for such areas, they do estimate that, in general, the errors will be about 25 percent greater than those obtained in the 1990 decennial census for areas with populations under 2,500. Equally significant is the fact that even these reduced levels of accuracy for small-population areas can only be obtained by aggregating the results for monthly surveys over three years for the first use of continuous measurement, and for five years for the system once it is fully operational. It is argued that over three and subsequently five years, one would obtain the same sampling ratio as used for small areas during the last census. The problems with this design are twofold.

First the sampling errors may be simply too large to produce reliable data for small area planning. The 25 percent increase in the sampling error suggests coeffi-

cients of variation of nearly 75 percent for governmental jurisdictions of less than 2,500 person (see Alexander 1994). This means that if the actual value of mean household income is \$40,000, there is a relatively high probability (about 68 percent) that the estimate could vary from \$10,000 to \$70,000. Whether one is a small town mayor or city council member or someone attempting to discern the feasibility of opening a business in a small area, such a range of values is simply too large to be useful. Even larger areas up to about 10,000 persons would have increased levels of error of nearly 20 percent according to the Census Bureau's preliminary analysis (Alexander 1994).

Why this is so problematic for decision making in the Nation is that our basic governmental units, where decisions are made about services and programs that affect Americans' everyday lives, are primarily such small population areas. According to the Census' own figures, 48.6 percent of the 39,500 governmental units in the United States in 1990 had populations of less than 1,000, and two-thirds (67.4 percent), had less than 2,500 persons. **Historically, the decennial census has been the only data collection effort that has treated small areas in the same manner as larger areas.** It has been the only source that could provide high quality data on key economic and demographic variables for small areas. If decision-making is to be increasingly located away from Washington, State and local officials must have accurate and reliable information to make informed decisions.

The second problem is that the very system of aggregation of data over several years that is proposed to produce more reliable data for small areas is likely to create numerous difficulties in data use. Although statistical averages often produce more stable estimates, such stability may not produce values that reflect reality at any given point in time. In particular, income related changes may be markedly impacted by a single economic event in a small area (such as the closing of a single key manufacturing or other facility) and, although a case can be made that repeated measures over time will more accurately assess the change in such time sensitive factors, it is not clear what the reference date is for data aggregated over three or five years to produce an estimated value. Whereas large population areas will have reliable annual estimates for such factors, small population areas will be forced to rely on measures that suggest an average value over the period from 1999 to 2001 or 2002 to 2006, etc. For example, in many rural areas where farm incomes vary widely from year to year this is likely to produce a value that is "on average" correct but does not accurately characterize any particular period of time. The Census has always produced a **time-referenced value** for such sample items in which all areas had an estimated value for the same period so that areas could be easily compared over time and space. This would be made increasingly difficult under the proposed plan.

Equally problematic is the fact that the data produced could be easily manipulated to produce a variety of results to support any given end. For example, with the availability of monthly data, one could search for periods that produced either higher or lower values as desired. As a result, rather than having a census date to which one can true all values, one would have multiple survey dates that would be capable of being manipulated so that there would be different reference dates that would likely produce different results. This is likely to lead to even greater confusion over what such statistics mean and about their validity.

Finally, the aggregation of data across months may be problematic for some small areas where there are substantial seasonal fluctuations in populations and where the social and economic characteristics of the summer and winter residents are very different. For example, an area in Wisconsin where many people live in the South in the Winter or in Texas where some people work in the North in the Summer may show wide fluctuations in averages because substantial segments of their populations are missing during certain times of the year. Although there will clearly be attempts to ensure that respondents' responses are attributed to the correct residence areas, persons cannot be sampled if they are not present in an area and it is unlikely that they will by chance be obtained in the sample for the area they are visiting. The Decennial Census, since it attempts to count all persons at a single point in time, can more adequately adjust for this problem.

Let me make it clear that I am not proposing that the Continuous Measurement System not be used. I believe that it must be employed and that it is innovative and important for obtaining the timely data increasingly necessary to manage services and produce products and services for the Nation. I do not want, however, to see the sample form data for the 2000 Census supplanted by this system. Let both be obtained for 2000 so that the long-term capabilities of this system for measuring the statistical state of the Nation can be assessed.

CONCERNS RELATED TO THE USE OF ADMINISTRATIVE RECORDS

The plans for the 2000 Census suggest substantial reliance on administrative records to supplement the count in nonresponding households, to complete missing responses in otherwise responding households, and to augment integrated coverage measurement procedures (U.S. Bureau of the Census 1996a). After two decades of attempting to utilize such data, and after being involved in a recent intensive two-year effort to link and integrate administrative data for items such as Food Stamps, Aid to Families with Dependent Children, and Medicaid, I believe that reliance on such data is highly questionable.

The problems are that such data are difficult to obtain, nearly impossible to standardize sufficiently to link them adequately for assessment purposes and may contain substantial errors. The Bureau's own assessment of the difficulty in obtaining and attempting to integrate such data for the 1995 Test Census (U.S. Bureau of the Census 1996b: 1995 Census Memorandum No. 24) resonate with my experience. Thus Bureau personnel note that:

The acquisition process and subsequent processing was not as straightforward as some might have thought. The negotiation process was often lengthy and sometimes costly. We came up against barriers we sometimes didn't expect and we found that the data suppliers had many limitations. In some cases, we dealt with contractors to get the data because the owner of the file was unable to extract a file or provide it in a format which we could use. Sometimes documentation was missing or did not match the file we received. Definitions for codes were often not included. Sometimes the medium itself on which a file was submitted was unreadable. All of these things required constant callbacks to the file providers. Many, many phone calls, letters and FAXES were made during this process. Most issues and problems with files were discussed over the phone and resolved. An open line of communication with every file provider was extremely important.

Every file was different which sometimes meant tedious and manual changes to the individual files. Because every file was different that also meant different record layouts. This required programming to accommodate each individual file. We specified the data elements we wanted, media and file formats we could accommodate. However, depending upon the supplier, sometimes those specifications were not met (Memorandum No. 24: pages 51-52).

These comments are not only reflective of our experience but that of everyone I know who has attempted to utilize such data. These are not conditions that ultimately lead to extensive cost savings.

The Bureau will soon evaluate the utility of the information in such files. If such utility includes an assessment of the accuracy of the data for households, I predict they will be disappointed with the results. In assessing such data for AFDC for example, we have found wide differences in addresses for dependents and caretakers and varying standards for updating geocodes. In fact, the use of such data requires rather detailed knowledge of each individual file. To obtain such knowledge for all such files for the entire Nation is unlikely to be feasible.

Equally important, the addresses on such files in rural areas are often largely postal boxes and rural route addresses that are often difficult to convert to residence addresses. The use of such data is likely to lead to increased inaccuracies in data for rural areas because of difficulties in address allocations to rural areas and the aforementioned sampling difficulties.

It is important to recognize that the reason such data are problematic is not that state and local service providers are purposively uncooperative but rather it is because the files they maintain are largely the minimum necessary to administer their programs. In most areas of the Nation, budget restraints have, as in the Federal sector, taken a toll on the size of staff involved in data collection, verification, and assessment. As a result, our experience is that the quality of such data bases is deteriorating.

Again, I do not wish to suggest that administrative data should not be assessed for their potential utility but only that they should not, in their present form, occupy a position that will make the quality of the 2000 Census dependent upon them. For rural and other small-population areas, I believe the accuracy of administrative data is unlikely to be as good as that historically obtained in the census in the United States.

CONCERNS ABOUT DATA ACCESS

As an additional means of decreasing the costs of the Census, the census proposes to distribute its data in new forms that show heavier reliance on electronic forms, particularly the internet. Clearly the use of the internet is increasing exponentially

and nearly all large urban governmental units are using the internet as are nearly all university, college and state governmental facilities. Similarly, it is likely that the State Data Center System can partially address the reduction in the Census Bureau's direct production of data for public use.

As I travel the rural areas of our state, however, I find few small town mayors and city offices that use the internet. Perhaps they will by the time the 2000 Census data are released but I am concerned that the dissemination plans represent decreased access for smaller population areas, particularly those in more remote and poorer areas of the Nation.

I would thus hope that the Bureau will consider revising its plans to include more printed products and electronic products in other accessible forms. Most small areas do now have computers and many have CD-ROM readers. The Decennial Census is the people's census and its results should be widely accessible. Access to data critical to decision-making is instrumental to the long-term development of rural areas in the United States.

CONCLUSION

The comments provided here are not intended to depreciate the Census Bureau's careful planning nor are they an attempt to suggest that the Census need not change. The need to curb budgets in all sectors of governmental costs is evident and the Bureau is simply attempting to responsibly address the need to produce a high quality product, that is applicable to as large a number of citizens as possible and deliver it in a cost-effective manner. Under such circumstances, the Census must change.

What has been provided in these comments, however, is a plea to not forget that the 2000 Census is not simply a census, it is the census which marks the beginning of a century and of a millennium. Its results will serve as a permanent benchmark against which we shall measure our progress for decades (and perhaps centuries) to come. It would be unfortunate if it failed to produce adequate benchmark data for key economic, demographic and other indicators for a majority of the governmental units in the Nation and was limited in its availability to serve the needs of small population areas. I thus urge the Census Bureau to continue to carefully evaluate the implications of their proposed use of sampling for nonresponse and in the continuous measurement system, their use of administrative data, and their plans to disseminate census information to ensure that it is as accurate, complete and accessible as possible for use by rural and other small population areas in the United States.

Mr. CLINGER. Thank you very much, Dr. Murdock. As somebody who represents the most rural congressional district in Pennsylvania, your comments and concerns have particular relevance and resonance with me. So I really do appreciate your testimony.

Dr. Wachter. Again, I apologize for not giving you a proper introduction, because your testimony is clearly very important to us, in that you served on the special advisory panel for the 1990 census adjustment at the Department of Commerce for a considerable period of time, from 1989 to 1991. Therefore, we really do welcome you here today, and thank you for attending. We look forward to your testimony.

Mr. WACHTER. This is joint testimony with my colleague, David Freedman, Mr. Chairman.

We now know that, if Secretary of Commerce Mosbacher had decided to use the statistically adjusted numbers as 1990 census counts, a seat in the House of Representatives would have been shifted from Pennsylvania to Arizona by an error in a computer program. Senator Kohl mentioned this error. It affected a million people in the count. It remained undiscovered for months after the Secretary's decision, buried under layer upon layer of complications in the statistical procedures.

A system which lets an error in a computer program decide the apportionment of Congress is not desirable. The coding error epitomizes the problems of statistical adjustment in 1990. Complications

were added in pursuit of incremental gains in accuracy. However, many small gains can be offset by a few large errors.

In 1990, the complexity made it hard for the Bureau to detect big mistakes and uncertainties. The first priority for Census 2000 should be a fail-safe census. Statistical methods need to be simple and direct so that malfunctions will be detected and corrected.

Unfortunately, the Bureau's plans for Census 2000 add further layers of complexity onto the complications of 1990 and leave the final numbers even more vulnerable to statistical error. The Bureau's dedicated and resourceful staff, despite adverse conditions, are planning Census 2000 with enthusiasm. They need congressional support. Equally, we all need a sober view of the challenges confronting the statistical techniques.

The Bureau's current plans call for constructing some 30 million person records by statistical means and adding them to the census alongside the records of actual people who respond. There are two separable sets of statistical operations that we've heard about: sampling for nonresponse follow-up, which brings the savings in cost; and integrated coverage measurement, ICM, the year 2000 counterpart to the 1990 adjustment procedures.

ICM is not a well-established whole but a composite of methods. Some of them are as yet sketchily documented and only partially tested. In implementing final procedures, many choices will have to be made by the Bureau's statisticians, and, in 1990, choices about details turned out to have big effects on final adjusted numbers.

It is important to understand that the full-scale ICM is not being mounted for the purpose of addressing national racial differentials and undercounts. Such differentials have been a persistent flaw in U.S. censuses. But the national differentials, per se, can be addressed by a comparatively simple alternative called "benchmarking," using totals estimated from the Bureau's program called "demographic analysis."

What the ICM is about is an attempt to allocate people missed by the census among States and local areas. Its payoff over benchmarking is meant to be found in better estimates of population shares. In 1990, the attempt went awry. There is strong circumstantial evidence that the adjusted shares were worse. Two problems, called "differential correlation bias" and "heterogeneity" impaired the results. These problems remain unsolved and remain having relatively low profile in the census 2000 plans.

On two specific issues that have come up today: I do believe that counting Americans abroad is prohibitively difficult. I also believe Representative Sawyer put his finger on one of the chief technical problems, which is the problem of duplicates. And I find the Census Bureau's plans for handling duplicates too optimistic, at the present time.

For 1990, the figures from the original enumeration and from the Bureau's statistical procedures and evaluations were available for independent analyses. Under the Bureau's one-number census concept, all this will change. The figures behind the final figures will not be available outside the Bureau. If choices of detail shift a dozen seats of the House of Representatives, we shall never know. If the problems of 1990 are brought under control by the Bureau's

new initiatives, we shall never know. A return to the open release of such information is strongly recommended.

In closing, if statistical methods are to be given a large role in the generation of the Census 2000 counts, then those methods should be simple, direct, and fail-safe. We should take the lessons of 1990 to heart. We should also remember that the information in the census ultimately comes from the responses of individual people, not from the statistical transformations. To the extent possible, Congress should give the Bureau the support it needs to do what it does superbly, gather real information from real people.

Thank you.

[The prepared statement of Mr. Wachter and Mr. Freedman follows:]

PREPARED STATEMENT OF KENNETH W. WACHTER, PROFESSOR OF STATISTICS AND DEMOGRAPHY, UNIVERSITY OF CALIFORNIA AT BERKELEY, AND DAVID A. FREEDMAN

We now know that if Secretary of Commerce Mosbacher had decided to use the statistically adjusted numbers as 1990 Census counts, a seat in the House of Representatives would have been shifted from Pennsylvania to Arizona by an error in a computer program. This error affected a million people in the count. It remained undiscovered for months after the Secretary's decision, buried under layer upon layer of complications in the statistical procedures. A system which lets a coding error in a computer program decide the apportionment of Congress is not desirable.

The coding error epitomizes the problems of statistical adjustment in 1990. Complications were added in pursuit of incremental gains in accuracy. However, many small gains can be offset by a few large errors. In 1990, the complexity of their modeling systems made it hard for the Bureau to detect big mistakes and uncertainties, until long after the critical decisions had been made. Indeed, we and others inside and outside the Bureau later found systematic errors in the procedures originally used to evaluate the adjustment proposed to Secretary Mosbacher: the original evaluations overstated the merits of adjustment. The more complex are the modeling systems used, and the tighter the constraints of time and money, the harder it becomes to make realistic assessments of the statistical uncertainties in the model outputs.(1)

The first priority should be a "Fail-Safe Census". Statistical methods need to be simple and direct so that malfunctions will be detected and corrected. Unfortunately, the Bureau's plans for Census 2000 add further layers of complexity onto the complications of 1990, and leave the final numbers even more vulnerable to statistical error.(2)

The Bureau is the world's finest statistical agency. It has dedicated and resourceful staff who, despite adverse conditions, are planning Census 2000 with enthusiasm. They need and deserve Congressional support. Equally, we all need a sober view of the challenges confronting the statistical techniques being developed for Census 2000.

The Bureau's current plans call for constructing some 30 million person-records by statistical means and adding them to the Census alongside the records of the actual people who respond.(3) There are two separable sets of statistical operations. The first has no official acronym. It is associated with the decision to follow up only a random sample of non-responding household with calls and visits. Results for non-responding households outside the sample are then created by statistical estimation. The cost savings in Census 2000 come from this sampling.

The second set of statistical operations has the acronym ICM, standing for "Integrated Coverage Measurement." ICM is the Census 2000 counterpart to the 1990 adjustment procedures. ICM is not a well-established whole but a composite of methods, processes, and options, some from 1990, some more recent. Some of them are as yet sketchily documented and only partially tested. In implementing final procedures, many choices will have to be made by the Bureau's statisticians. In 1990, choices about details turned out to have had big effects on the adjusted numbers.(4)

It is important to understand that the full-scale ICM is not being mounted for the purpose of addressing national racial differentials in undercounts. Such differentials have been a persistent flaw in U.S. Censuses and their reduction is a central Bureau goal. But the national differentials per se can be addressed by a comparatively

simple alternative called "benchmarking", using totals estimated from the Bureau's program called "Demographic Analysis".(5)

The ICM is an attempt to allocate people missed by the Census among states and local areas. Its payoff over benchmarking is meant to be found in better estimates of population shares. In 1990, the attempt went awry. It was impossible to show that the adjusted shares were better, and there is strong circumstantial evidence that they were worse. Two problems called "differential correlation bias" and "heterogeneity" impaired the results.(6) These problems remain unsolved as we approach the year 2000.

A primary use of census data is to apportion congressional seats to states. Since the number of seats is fixed, the shares of the population held by the various states need to be determined with good accuracy. For redistricting within the states, the population shares of substate areas matter too.

Key innovations in the Bureau's plans for fieldwork hold promise but increase risk. The Bureau plans on a "new strategy of providing multiple opportunities for every person to participate."(7) The advantages of this strategy come at a cost. More people will initially be double-counted. A heavy burden is placed on the procedures for weeding out duplicates. In 1990, according to the Bureau's Post-Enumeration Survey, some 3 million duplicates eluded the procedures then in place. The Bureau may be too optimistic about its new software for handling this problem in the year 2000.(8)

For 1990, the figures from the original enumeration and from the Bureau's statistical procedures and evaluations were available for independent analyses. A great deal has been learned from the ensuing debates in demographic and statistical journals about the strengths to cultivate and the pitfalls to avoid. Under the Bureau's "One Number Census" concept, all this will change. The figures behind the final figures will not be available outside the Bureau. If choices of detail shift a dozen seats in the House of Representatives, we shall never know. If the problems of 1990 are brought under control by the Bureau's new initiatives, we shall never know. A return to the open release of data on the impacts of statistical procedures is strongly recommended.

If statistical methods are to be given a large role in the generation of the Census 2000 counts, then those methods should be simple, direct, and fail-safe. We should take the lessons of 1990 to heart. We should also remember that the information in the Census ultimately comes from the responses of individual people, not from the statistical transformations. To the extent possible, Congress should give the Bureau the support it needs to do what it does superbly: gathering real information from real people.

Mr. CLINGER. Thank you, Dr. Wachter, very much for your participation.

Now I am pleased to recognize the distinguished panelist, Dr. Schultze. We welcome you and look forward to your testimony.

Mr. SCHULTZE. Thank you, Mr. Chairman.

Professor Trussell and I are presenting joint testimony, which we will submit for the record. We were both members, and I was chairman, of the National Academy of Sciences Panel on Census Requirements in the Year 2000 and Beyond. I will summarize our panel's recommendations, and Professor Trussell will add his own comments and summarize our joint evaluation of the Census Bureau's response to our recommendations.

Our panel identified a number of major problems with the way the census has been developing, problems with which you are quite familiar, Mr. Chairman, and I will only say a couple of words about that. First, the sharply escalating cost of taking the census. Between 1970 and 1990, the inflation-adjusted per-household cost of taking the census doubled, even after taking account of the additional cost because of the reduced mail response rate.

The GAO and the Census projected the costs of a year 2000 census, with no major change in approach, to show a further huge increase and, in my judgment, those projections are probably understated, because they don't really take account of the growing dif-

faculty of finding qualified people within the workplace to take part-time and temporary jobs. So there is a massive problem.

Second, while costs doubled from 1970 to 1990, quality deteriorated, since the net undercount, which had been declining, rose in 1990, and the differential undercount reached a peak. And third, after the census was completed, a postcensus survey provided a different set of population estimates, leading, as you know, to divisive political struggles.

Our panel identified one central reason, not the only reason, but the central reason for the combination of escalating costs and deteriorating quality. To satisfy the Voting Rights Act and other congressional and legislative requirements, the Census Bureau, in the 1970's and 1980's, was faced with a massive expansion in the public demand for accurate data, cross-classified by race, age, ethnicity, et cetera, and at very fine-grained levels of areas, in a society which was cooperating less and less with the census, as evidenced by the declining mail response rate.

The Bureau met this problem by pouring in enumerators and other resources in a vast amount, trying to count, physically, every last person. It would revisit housing units as many as six times trying to get a response and laid on highly expensive programs to count the hard-to-count; again, person by person. District offices, which in earlier decades had been kept open for 3 months, began to remain open for 6 and 9 and, in some cases, 12 months.

The panel concluded that this has become a dead-end approach. It not only was pushing costs up an ever steeply climbing slope but was producing less accurate numbers. On the other hand, we determined that, by combining improved approaches to physical counting with modern survey and statistical estimation techniques, a census could be designed that would allow both substantial cost savings and simultaneously produce higher quality results on most, even though not on all, counts, or all criteria by which you want to judge your census.

Mr. Chairman, by now you are familiar and the committee is familiar with the essential new approaches which the Census has proposed, which basically stem from our recommendations of combining improved physical count with statistical estimation techniques, and I won't take your time up with redescribing that.

We recommended that these new approaches be combined to produce a single set of final results rather than an initial set of numbers and a subsequent set of corrections, which, in 1990, proved to be terribly divisive. But we also recommended that the Census maintain, preserve, and expand the transparency of what it was doing, so that they could be checked, evaluated, and judged.

On 3 out of the 4 major criteria, this new approach will produce superior results. It will lower costs directly and, perhaps even more, indirectly, by permitting a thorough reengineering and streamlining of the entire process. It will produce a more accurate census count for the country as a whole, for States, and for other large areas. It will particularly improve the count for minorities and other groups, and thus reduce the differential undercount.

On the other hand, the use of surveys and sampling techniques will mean that the estimates for very small areas will have greater variation above and below the true count. But no one should kid

themselves about the current accuracy of the count at the hardest to count places, census tracts, or even blocks, and in the hardest to count areas of the country.

Because of erroneous responses, misclassifications, and other problems, the data at that level of detail inevitably have substantial errors to begin with and, in many cases, by the time you use them, at the end of the cycle, are 12 years old. Not only that, the 1990 census already included significant estimation through imputation and other such procedures. Our panel unanimously concluded that the advantages from the use of surveys and statistical techniques would far outweigh the disadvantage.

I want to emphasize one other major, and again unanimous, conclusion of the panel. There is apparently a widespread view that many of the problems with the census could be solved by substantially abbreviating its content, particularly with respect to the so-called "long form," which seeks data, as you know, on such items as income, labor force status, commuting patterns, and the like. In fact, this is an erroneous view.

The long form only goes to 1 out of every 6 households to begin with. The length and complexity of the census questionnaire has stayed just about the same over the past three censuses, and it was not an increase in length or complexity of the form that caused the problems that I have discussed and with which you are familiar.

Given the constitutional requirement that a census of the population be conducted, it is highly cost-effective to piggyback the questions that provide critical data to the Federal Government to business and to researchers. Above all, these data are critical to State and local governments for their own administrative and planning purposes, a consideration of particular urgency, given strong congressional interest on devolving a number of Federal responsibilities to State and local governments.

In short, Mr. Chairman, you won't save much money, and the country will probably lose some virtually irreplaceable data source, if you try to save budget money by cutting back substantially on census content. I'm not talking about marginal changes, but substantially.

Finally, Mr. Chairman, I believe the panel's recommendations with respect to the use of statistical estimation techniques and the Census Bureau's planning efforts in that direction have become even more important in the context of the recent budget debates. In either the President's or the Congress' version of the long-term budget plan, the discretionary spending of the Federal Government in inflation-adjusted terms would be cut about 25 percent over the next 7 years.

Since we can be fairly sure that a number of programs, like border patrols, the NIH, and prison building are going to be increased, the budget outlook for the remaining discretionary programs, among which the census is included, is going to be exceedingly tight. Even if, as I believe, the full scope of the targeted discretionary budget cuts will probably never occur, the budget is going to be exceedingly tight as far out as the eye can see, like it or lump it.

Under these circumstances, and in a sharply constrained budget, failure to incorporate a major degree of statistical estimation and

attempts to rely on the traditional approach of trying to count everyone physically could very well produce a statistical disaster, Mr. Chairman.

Thank you.

Mr. CLINGER. Thank you very much, Dr. Schultze.

Dr. Trussell, I think we will recess here momentarily. I think Mr. Zeliff is on his way back and, as soon as he gets back, he will reconvene, but I think I'm getting close to the time limit on my vote.

[Recess.]

Mr. ZELIFF [presiding]. Dr. Trussell, would you deliver your testimony, please.

Mr. TRUSSELL. Thank you, Mr. Chairman.

As you know, our panel of the National Academy of Sciences was convened at the request of Congress, and our report was submitted to Congress last year. It is, therefore, important to address the question of how well the Bureau of the Census has reacted to the report that we issued.

In our judgment, the Bureau has been extraordinarily responsive to the panel's recommendations. Bureau officials have produced a plan to reengineer the census operations by increased use of sampling, and it is that reengineering, and only that reengineering, which would produce significant cost savings compared with traditional census operations.

To reduce the differential undercount, which so worried Congress, the Bureau has planned to improve and complete the estimates achieved through physical enumeration and sampling for nonresponse follow-up. They have designed the census as an integrated whole, to produce the best single number count for the resources available. They plan to include a long form to collect essential small area data, mandated by Congress, and data on small population groups, also mandated by Congress. Finally, their publicizing their plan for implementing a redesigned census and consulting with various stakeholders.

We, ourselves, give the Bureau high marks for their efforts to find a less costly way to conduct the census, while at the same time increasing equity of enumeration across geographic areas and population subgroups. Our panel concluded that making a good faith effort to count everyone, but truncating physical enumeration after a reasonable effort to reach nonrespondents, would balance the twin needs to save money and to preserve the perception of fairness.

Now, that's an artful dodge. What is it that actually constitutes a good faith and reasonable effort? Well, part of that was addressed by Dr. Bailar earlier, and I want to emphasize three parts. In order to increase cooperation with the census up front, and therefore to save money, the Bureau has made three changes.

One is to use the post office to develop the master address list. The second is to share that list ahead of time with local areas so that there is adequate input before census operations begin, to make sure that that sampling frame is as complete as possible. And, finally, we have a massive public education campaign to increase cooperation up front.

Now, what constitutes a good faith and reasonable effort to find people who don't initially respond? Well, clearly, that's not a ques-

tion that can be answered by a mathematical formula. It is, instead, a matter of judgment. The Bureau currently plans to start sampling for nonresponse follow-up only when traditional operations have elicited responses from 90 percent of addresses in a particular geographic area; in this case, a county or a county equivalent.

In our opinion, the Bureau has been very cautious in choosing this very high threshold. A lower threshold would allow greater reengineering of census operations and thereby lower census costs. The Congress and the Bureau, together, must face the facts, clearly understand the tradeoff, and strike that balance.

What was particularly missing here this morning, in my own opinion, was any understanding that there is a tradeoff. There were many calls this morning to send out enumerators to track down every single last person in the United States. If you want to do that, then you need to face the fact that you're going to have to spend the money to do it. You cannot simultaneously tell the Bureau to track down everybody physically and have a low-cost census. If you tell them to do that, it's sheer lunacy. It cannot be done. There is no magic bullet to enable anybody to do that miraculous feat.

The 1995 census test ratified the operational and statistical procedures that are planned for Census 2000. However, much work remains to be done. You have heard much about that this morning. Much work does remain to be done to refine these procedures. In short, we must invest the resources now to ensure that we have an accurate, affordable, and equitable census in the year 2000. We need your attention now.

[The prepared statement of Mr. Schultze and Mr. Trussell follows:]

PREPARED STATEMENT OF CHARLES L. SCHULTZE, SENIOR FELLOW, THE BROOKINGS INSTITUTION; AND JAMES TRUSSELL, DIRECTOR OF THE OFFICE OF POPULATION RESEARCH, PRINCETON UNIVERSITY

INTRODUCTION

Good morning, Mr. Chairman and members of the Committee. My name is Charles Schultze and I am a senior fellow at The Brookings Institution. With me is James Trussell, professor of economics and public affairs, associate dean of the Woodrow Wilson School of Public and International Affairs, and director of the Office of Population Research at Princeton University. I was the chair and Trussell was a member of the Panel on Census Requirements in the Year 2000 and Beyond of the National Research Council's Committee on National Statistics. This testimony is our own and not that of the National Academy of Sciences, the National Research Council, the Committee on National Statistics or its Panels on the year 2000 census.

The Panel on Census Requirements was established in response to the Decennial Census Improvement Act of 1991. In this Act, the Congress requested the National Academy of Sciences to convene a panel to study the fundamental requirements for the nation's decennial census, looking to the year 2000 and beyond. This request stemmed in large part from Congressional concern about the rising costs of recent decennial censuses coupled with increases in the relative undercount of minority groups. The Act specifically asked the National Academy of Sciences panel to (1) examine ways to improve census enumeration methods, (2) look at alternative ways to collect data for a basic population count and for other needed data, (3) investigate the appropriateness of sampling methods for the acquisition of population data, and (4) study the degree to which a continuing need exists for census data beyond that required for a basic count. The Panel's report, *Modernizing the US Census*, was pre-

mented to the Congress on November 16, 1994.¹ We have selected for our testimony those conclusions and recommendations that seem to me most relevant today.

MAJOR PROBLEMS AND CHALLENGES

We would like first to summarize what the Panel on Census Requirements saw as major problems and challenges facing the decennial census, including those identified by the Congress in its charge to the Panel.

Despite the efforts of a highly professional and competent Census Bureau, three major problems have developed over the last several decades. First, costs have risen sharply. Even after adjustment for inflation, for the increase in the number of housing units, and for the decline in the proportion of households who mailed back their census questionnaires, the cost of taking the decennial census doubled from 1970 to 1990 (from \$1.3 billion in 1970 to \$2.6 billion in 1990). Second, despite the rise in costs, the net undercount, after dropping through 1980, rose in 1990, and the difference in the net undercount between the black and nonblack populations rose to a new peak in 1990. Third, the existence of an initial census count and a different estimate from a Post-Enumeration Survey led in 1990 to divisive argument and an increased politicization of the census.

The Panel did not see the content of the census as a significant cause of the increase in costs or the rise in differential undercount. There has been no real expansion in the number of questions since 1960. Indeed there has been a smaller sample for the long form and fewer questions. Rather, the Panel saw the cost increase as the result of a combination of other factors. First, there was a substantial expansion in the demand from the Congress, the courts, and the public for accurate population data, cross classified by age and race/ethnicity at the level of individual blocks. Second, there was a decline in public cooperation as signaled by the fall in mail response rates, with the largest declines coming precisely in the areas that are hardest to count. And, finally, the census sought to meet these pressures by an ever increased use of highly labor-intensive efforts to count every person physically.

Given these factors, the Panel concluded that the use of highly labor-intensive follow-up efforts to count every person physically has been pushed far beyond the point at which they add to the accuracy of the census. Long before the goal of a complete physical count has been reached, diminishing returns set in. In other words, the operations cost increasingly more than what they add to accuracy and completeness—the census is being conducted out on the flat of the cost curve.

A REDESIGNED CENSUS

The Panel therefore recommended a major redesign that would combine a less intensive physical enumeration with two forms of statistical estimation: first, the use of sampling to follow-up those who have not earlier been counted by mail return or personal visit, and second, the use of intensive but selective evaluation surveys to complete the count.²

More specifically, the Panel recommended that the Census Bureau make a good-faith effort to count everyone, but then truncate physical enumeration after a reasonable effort to reach those who do not mail back their census questionnaires. The number and characteristics of the remaining nonrespondents would be estimated through sampling.

To improve the census results still further, and especially to reduce the differential undercount, the Panel recommended that the estimates achieved through physical enumeration and sampling for nonresponse be augmented and completed through survey techniques. The Panel recommended that this new census should be designed as an integrated whole, to produce the best single-number count for the resources available. The Panel also recommended that the Census Bureau should publish a full explanation of the procedures used to produce its final counts, as well as an assessment of their accuracy.

Finally, the Panel recommended that the Census Bureau incorporate a number of other procedures to increase the initial response rate in the 2000 census, includ-

¹Barry Edmonston and Charles Schultze, Editors; Panel on Census Requirements in the Year 2000 and Beyond, Committee on National Statistics, National Research Council. *Modernizing the U.S. Census*. Washington DC: National Academy Press, 1995.

²In addition to our Panel, the Panel to Evaluate Alternative Census Methods conducted a complementary study at the specific request of the Census Bureau. That Panel focussed on technical issues of implementation and evaluation of promising methodologies. That Panel also recommended these two forms of statistical estimation in their report. See Duane L. Steffey and Norman M. Bradburn, Editors; Panel to Evaluate Alternative Census Methods, Committee on National Statistics, National Research Council. *Counting People in the Information Age*. Washington DC: National Academy Press, 1994.

ing the use of respondent-friendly questionnaires and expanded efforts to publicize the mandatory nature of the census.

The Panel concluded that the proposed integration of physical enumeration and statistical estimation would produce improvements in census performance on three important decision criteria, at the cost of some sacrifice on a fourth criterion. On the positive side: (1) costs will be lower; (2) the overall census undercount will be smaller at the national level and for large areas; and (3) the differential undercount for minorities and other groups will be reduced at the same large levels of aggregation. On the other side, (4) there will be some increase in sampling variability for small areas. But, nonsampling errors at the block level are already substantial for the areas with the poorest quality response no one should assume that the data produced by the present system are highly accurate at such fine-grained levels of geographic detail. On balance, the gains from using sampling and statistical estimation as an integral part of the decennial census far surpass the sacrifices.

We noted above the Panel's recommendation that physical enumeration be truncated "after a reasonable effort." But what is reasonable? The Panel examined alternative methods and degrees by which physical enumeration could be truncated. The Panel concluded that some combination of three methods might be used in practice: (1) truncation by a specific date, (2) truncation after a specific percent of households in any given area have been counted, and (3) truncation after a certain amount of resources have been expended in that area.

There is a trade-off, however, between cost savings and the percent of the population physically counted before sampling procedures are employed for follow-up. The more severe the truncation, the greater the cost savings. But that advantage must be weighed against the number of areas in which, with severe truncation, a large fraction of the population is not counted physically. Such an outcome could lead not only to higher sampling variability, but more importantly to potential problems of public perception and political backlash.

It was the Panel's rough estimate that a reasonable trade-off using a combination of truncation methods could yield \$300 to \$400 million in savings (in 1990 dollars) while producing a high quality census.

Finally, on this subject the Panel felt that it was very important for the census to settle expeditiously on a new design and then undertake a national campaign of public education to secure consensus on that design. To get well along in planning only to find out the new approach is politically unacceptable could be extremely costly if not disastrous. It is critical that the use of sampling and surveys to complete the count not give rise to an even greater degree of noncooperation and a relaxation of the idea that the census is mandatory. Thus, the Panel recommended that the Census Bureau publicize, as soon as possible, its plan for implementing a redesigned census.

CENSUS COSTS

The Panel examined in some detail the problem of costs. A table from the Panel's report shows (see Table 3.2 attached to this testimony) a rise in costs (in 1990 dollars) of \$1.8 to \$1.9 billion between the 1970 and 1990 decennial censuses. Of that amount, the Panel estimated \$350 million to have arisen from the increase in the number of housing units and \$100 to \$225 million from the direct effect of the decrease in the mail response rate over the period. But that leaves \$1.3 to \$1.4 billion in other cost increases. As noted earlier, the principal reason for this cost increase, in the view of the Panel, was the very large expansion of labor intensive methods in an effort to count the hard-to-enumerate.

The Panel estimated that some \$300 to \$400 million in direct savings could be realized from the use of sampling for follow-up and from user-friendly forms. But, this is much less than the estimated \$1.3 billion non workload-related cost increase over 1970. And so the Panel strongly urged that the entire census process and operations be rethought and reengineered from the bottom up. Once it is accepted that statistical estimation and not highly labor intensive measures will be used to complete the count, many costly operations and procedures can be modified, streamlined, and, undoubtedly in some cases, eliminated.

We recognize how easy it is simply to graft new methods onto old operations. But that is neither a necessary or a desirable way to implement the new census design. As one managerial technique to help reexamine and reengineer operations from the ground up, the Panel recommended that the Census Bureau develop a plan for the 2000 census that eliminates a substantial fraction of the \$1.3 billion cost increase (in 1990 dollars) from 1970 to 1990 that is not accounted for by the growth in housing units and the decline in the mail response rate. The Panel recommended that the target for this plan be much more than the \$300 to \$400 million in direct cost

savings that we had already identified. The Panel urged the Census Bureau then to evaluate that plan in terms of its effect on the quality of the resulting census. The Panel concluded that a thorough effort in this exercise could have important savings consistent with a high-quality product.

RADICAL CENSUS ALTERNATIVES

One chapter of the Panel's report considered various proposals for radically different ways of collecting the data now provided in the decennial census: a national register, an administrative records census, a census conducted by the U.S. Postal Service, and a sample census. Each proposed alternative is described briefly below. Essentially, the Panel rejected all of these, either in general or as feasible for the year 2000. The Panel did, however, make several recommendations about the increased use of administrative records for intercensal estimates and noted that long-run possibilities for a national register, complemented by administrative records, might become more positive.

A census could be achieved through a national population register, which has the advantage of timely data. A population register is a special type of administrative record, a system maintained by a mandatory continuous registration of all residents with some governmental unit. If the cost were absorbed by other administrative uses, then the additional cost for statistical purposes could be relatively low. Creation of such a register in the United States, however, would raise privacy and civil rights concerns, almost surely sufficient to make it unacceptable in the American culture. Moreover, without an exceptionally high degree of public cooperation, a national register would produce low-quality data. On the other hand, demands for universal health care may produce a basic register of the population, and pressures to deal with illegal immigration may change attitudes towards the use of administrative records for labor certification. The pendulum of public opinion may shift to the idea of a complete listing of the population, updated for routine administrative purposes. It may, one day, become attractive to reconsider the feasibility of a national register to replace the traditional census.

The Panel examined whether administrative records could substitute for the entire census or could serve as a supplement for a portion of census content. However, no single set of administrative records is complete enough for the data needed, so that large-scale linkage of records from different systems would be required, which would result in increased costs and privacy problems. An essential requirement for the census is that people be assigned to households and be identified by race and ethnicity. But many sets of administrative records lack up-to-date addresses, and there are inherent political, social, and statistical problems in requiring that race and ethnicity data be supplied as part of administrative records. Although wholesale reliance on administrative records is not feasible as a substitute for the 2000 census, the Panel suggests ways in which use of records in the census could be expanded.

Some have suggested that the census be conducted by the U.S. Postal Service. The Postal Service, in effect, already makes a major contribution to the census since it delivers the mail questionnaires, which, in 1990, provided 65 percent of the overall census results. But the most difficult and costly task of the census is collecting information from those who have failed to return the mail questionnaire, either through direct follow-up visits or by survey techniques. The U.S. Postal Service is not a suitable or cost-effective vehicle for either of these tasks. The hourly cost of letter carriers was more than three times the hourly cost of census enumerators in the 1990 census. However, the U.S. Postal Service and the Census Bureau can greatly assist each other in census-related activities, and the Panel makes specific recommendations to foster that cooperation. In particular, the Census Bureau and the U.S. Postal Service are already working cooperatively on a proposal to continuously update the master address file, which is a critical element of the decennial census.

Some have proposed to replace completely the conventional census with a large sample survey to produce an estimate of the total U.S. population and its characteristics. The key challenge is that the Constitution calls for an "actual enumeration" of the population at one point in time. Also, a sample census could likely experience higher net undercoverage rates, would still require the costly production of an accurate address list for the entire country, and public acceptability may be low because of the lack of the high-profile, attendant publicity, and historic image of the census.

In evaluating the radical alternatives, the Panel attached great weight to three critical requirements for census data: (1) for constitutional and other reasons, households and people must be associated with specific residential addresses, (2) for Voting Rights Act purposes, data are required on racial and ethnic identification of people, again associated with addresses, and (3) a range of critical needs exists for

small-area data that include information on a wide variety of population characteristics. The Panel concluded that none of the alternatives would be feasible replacements for the decennial census because they neglected constitutional requirements, would be too costly, would not have strong public cooperation or support, or would not provide needed data.

SMALL AREA DATA NEEDS AND CENSUS CONTENT

The Panel's purview was census requirements. Having reviewed data needs, costs, and operations, the Panel concluded that, in addition to data to satisfy constitutional requirements, there are essential public needs for small-area data and data on small population groups of the type and breadth now collected in the decennial census. There is much valuable census-type data that is now collected frequently by such periodic surveys as the Current Population Survey. But these data are valid only for the nation as a whole and large geographic areas. Only the decennial census provides a wide range of data that is valid for small geographic areas.

Historically, the census has collected additional content beyond the minimum set of items needed for the congressional purposes of reapportionment and redistricting. Since 1940, most of the additional data have been collected on a separate long form administered to a fraction of households. As noted earlier, the Panel concluded that the census long form was not responsible in any substantial way for the drop in mail response rate or rising costs over the last several decades. Given the necessity of conducting a decennial census in the first place, the marginal cost of the long form, the Panel concluded, is relatively low and did not contribute significantly to the reduction in mail response rates. After intensive examination of the uses of these additional data, the Panel concluded that there are essential public needs for small-area data and data on small population groups. The Panel further noted that the process for determining the content of the census has involved bringing together federal agencies and balancing their needs against consideration of questionnaire length and feasibility. The Panel concluded that this process has worked well and should be maintained and strengthened, with an increased role for the chief statistician in OMB.

How much do the additional data cost? The Census Bureau supplied estimates of the marginal costs of the long form for 1990 and concluded that dropping the long form would save \$300 to \$500 million. However, the Panel noted that the relevant measure of marginal costs for the long form is not the 1990 census, but the marginal cost in the context of the new census design that relies less heavily on physical enumeration. The Panel documented an estimate that the marginal cost of the long form in that context would not be \$300 to \$500 million, but \$200 to \$400 million. The Panel concluded that the long-form is a cost-effective means of collecting needed data and that there is no feasible alternative to the long form for 2000.

CONCLUSION

How has the Bureau of the Census reacted to *Modernizing the US Census*, the report Panel on Census Requirements in the Year 2000? In our judgment, the Bureau has been extraordinarily responsive to the Panel's recommendations. Bureau officials have produced a plan to reengineer census operations by increased use of sampling. That reengineering has produced significant cost-savings compared with traditional census operations. To reduce the differential undercount, they have planned to improve and complete the estimates achieved through physical enumeration and sampling for nonresponse through survey techniques: they have designed the census as an integrated whole, to produce the best single-number count for the resources available. They have planned to include a long form to collect essential small-area data and data on small population groups. Finally, they are publicizing their plan for implementing a redesigned census and consulting with various stakeholders.

We ourselves give the Bureau high marks for their efforts to find a less-costly way to conduct the census while at the same time increasing the equity of enumeration across geographic areas and population subgroups. Our Panel concluded that making a good-faith effort to count everyone but truncating physical enumeration after a reasonable effort to reach nonrespondents would balance the twin needs to save money and to preserve the perception of fairness. But what constitutes a good-faith and reasonable effort is clearly not a scientific decision but instead a matter of judgment. The Bureau currently plans to start sampling for non-response follow-up only when traditional operations have elicited responses from 90% of addresses in a particular geographic area. In our opinion, the Bureau has been very cautious in choosing this high threshold. A lower threshold would allow greater reengineering of cen-

sus operations and thereby lower census costs. The Congress and the Bureau together must face the facts, clearly understand the tradeoff, and strike that balance.

The 1995 Census Test ratified the operational and statistical procedures that are planned for Census 2000. However, much work remains to be done to refine these procedures. In short, we must invest resources now to ensure an accurate, affordable and equitable census in the year 2000.

Mr. ZELIFF. I may as well start asking questions of your testimony. Let me ask you this: How much is enough? And I guess that would be one question. The other question would be, in a perfect world, if we were going to come up with a new process of doing the first census, let's say the year 2000, can we come up with a perfect census, and how much is it worth to get every single person accounted for? What would you do different? Should it be cost-effective or should we concentrate on getting as much as we can, as long as that's reliable?

Mr. TRUSSELL. Well, I would answer in the following way: That is your job, as the Congress, to decide how much you want to pay for a certain quality census. But you cannot mandate a high quality census for no money.

Mr. ZELIFF. Right.

Mr. TRUSSELL. So you need to understand that there is a tradeoff there. I'm a citizen. I can't answer that question as a scientist.

Mr. ZELIFF. OK. Let me try it this way. In your judgment, at what participation rate is a census high quality?

Mr. TRUSSELL. Let me turn it around to you. At what point participation is an election a high quality election? I think all of us would agree that we have neither high quality elections nor high quality censuses. There is a public obligation to vote, as a citizen, I believe. There is also a public obligation to participate in the census. But we know that the world is not a perfect place. So how much effort do we want to make to ensure that the data are as accurate as possible?

I do believe that the way that we have been doing things is pouring money down the drain. I do believe that the plan that the Census Bureau has devised is a sensible, cost-effective way to get where we need to go. Have they struck the right balance between the amount of sampling and the cost of the census? I don't know. I know that there is a tradeoff, and it is that tradeoff which you need to face.

Mr. ZELIFF. Well, let me ask—and I guess just one last question. I guess it depends a lot on the questions that are asked. It depends on how you set up the sample. The sample will come out based on what you put into it in the beginning. I think the accuracy of that sample is dependent on the questions that are asked. Would you agree with that?

Mr. TRUSSELL. The accuracy of the sample is dependent on the questions you ask? You mean the content of the census?

Mr. ZELIFF. Right.

Mr. TRUSSELL. I do not believe that the content of the census has driven any of the problems that we are now facing. Certainly, we know that some questions are answered less well than others. Most people answer correctly whether they are a man or a woman than what is their income. So there is differential bias in the way that the questions are answered. But it's not the content of the census, I think, at all that is causing the problems that we face.

Mr. ZELIFF. OK. Let me ask the other members of the panel. When we have a work force that is essentially untrained and inexperienced, some 500,000 people who collect the census, are we asking for trouble, and shouldn't we be looking at doing it a different way, such as having the post office do it, such as putting it out to private bid? Any comment?

Mr. SCHULTZE. Let me start by saying that I don't think there's any magic in it being private versus public. Everybody is going to be faced with the same increasing problem of where do you get qualified people willing to work on a temporary job part-time. It's getting tougher and tougher and tougher. So that's a common problem, whether government does it or private. Now, I have no particular ideology one way or the other on that, but the fundamental problem is still there.

Mr. ZELIFF. But the post office, who is used to delivering your mail on a regular basis, would that be an option?

Mr. SCHULTZE. Well, in the first place, that's not what the postal employees are qualified for, so you've got to train them. That's not what they do. I'm not, myself, 100 percent sure, but I think it is very, very likely that trying to take one organization, whose people are already working an 8-hour day, or whatever you want, and try to turn them around to do, in a very concentrated period of time, a major new job, is a recipe for a disaster.

Mr. ZELIFF. OK. So you would say, keep on trucking the same way we've been doing it?

Mr. SCHULTZE. No. I would say the Census ought to go in the direction it's now going. Realize you're out on the flat of the curve, Mr. Zeliff. That is, when you start to count initially, the first efforts produce a lot of results. You get most people.

Mr. ZELIFF. Sixty-five percent.

Mr. SCHULTZE. Sixty-five percent. The next step you take trying to find people, well, you get the ones that are easiest to find, but the cost is a little higher there. Then to get the next 10 percent by trying to reach them physically, you get less and less. Finally, when you're doing what Census did more and more and more in 1970, 1980, and 1990, particularly in hard to count areas, you're putting in huge resources to get another 1 percent improvement, and it's not worth it.

Therefore, I think you go the way the Census Bureau is going, you start with a count like we always did, improving all sorts of ways the way you make it. They've got a lot of improvements there. But then, at some stage, you say, "Look, you're pouring money down a rat hole by trying to do it more this way," so now you start supplementing it with a statistical estimation. And by combining the two, you don't get a perfect result, but you get a lot better and certainly more cost-effective result than just dumping in more and more and more and more resources.

Mr. ZELIFF. What happens when the average person out there loses faith in the system and starts to realize that they are part of that 65 percent or 75 or 85, or whatever it gets to, and then the rest of them are just in some kind of statistical sample? Do they lose credibility in their feeling of taking the time to be accurate?

Mr. SCHULTZE. No. 1, that's a problem. It's a problem right now, because there is a question, not only of do you mail the question-

naire back, but how much time do you take to answer it correctly. That's going to remain, one way or the other.

Point No. 2, it is my understanding—now, I'm an economist among a bunch of statisticians, so my technical knowledge is fairly low—but it still will pay, since the Census is going to go in with this final statistical estimation, with a State by State sampling frame, individual municipalities in a State can, in effect, still gain by getting their people in that municipality to do a better job than another municipality of coming in and getting counted.

Now, among States that's not true, but within the State there are still incentives for people to go out and get a good count, even though you put your finger on what is a real problem that has to be surmounted, which is keeping people interested in doing it right when you say you're going to do statistical sampling.

Mr. ZELIFF. One thing that I was wondering, do we have a pretty good fix for the people who are unaccounted for, where they are? In other words, are they pretty much in the Northeast? Are they pretty much in the far West? Are they likely to be in the Midwest? I mean, do we know?

Mr. SCHULTZE. Do we know where the hard to count areas are?

Mr. ZELIFF. Yes. Are they centralized in certain parts of the country?

Mr. SCHULTZE. Well, I don't know about centralized in certain parts of the country, but there are certain characteristics of areas, depending on whether you're a central city or a suburb or a rural area, depending on ethnic, depending on income, depending on, for example, whether you are dealing with renters or homeowners. There are characteristics that kind of determine.

Mr. ZELIFF. Where I was leading this thing is, if we take a look at the whole country, and we can go from 65 percent to 80 percent, let's say, and then, instead of concentrating on the whole country, if we have a particular region that is particularly skewed and heavily concentrated, then maybe we look at putting the resources into that region. Will we come up with a better result?

Mr. TRUSSELL. But I think you have to understand that that is exactly what the Bureau has been doing, in 1970, in 1980, in 1990; is pouring more and more resources toward those areas which are the hardest to count, and look what we've got. So what you're calling for is doing things the old way and spending more money the old way.

Mr. ZELIFF. Let me correct your impression. I am not calling for doing things the old way and pouring money down the rat hole. I'm just exploring, are we looking at all the alternatives. And I'm encouraging us to take a look at a fresh, new way.

Mr. SCHULTZE. One point that—I thought your question was directed in another direction. If the Census is to use sampling to follow up nonrespondents, there are various criteria at which you can stop trying to contact people and start into your sampling. The Census has chosen to say, "We're going to get up to 90 percent in each county and then start sampling."

Well, there are alternatives. One would be to look and see, well, you put more effort into where it's harder to get a good count before you start sampling. There are various criteria you could use in not doing 90 percent everywhere and then sampling. You could

use other criteria to do that. You might put the same resources in everywhere, or you might cutoff as of a certain date, or there are any number of ways of doing it. It doesn't have to be their 90 percent. Using a percentage is probably as good as anything else. I'm not an expert on that. But there are alternatives you might want to explore.

Mr. ZELIFF. Administratively, should we use the Social Security number and track? Do you think we're doing enough administratively, and should that be where we place our priorities?

Mr. SCHULTZE. I've got a view, but I've been answering too many questions.

Mr. TRUSSELL. Well, we know what happened in the tests that have been done since 1990. Adding a Social Security number certainly would, in theory, help one to match records, eliminate duplicates, and so forth and so on. But two things were found: One is that adding a Social Security number drops the response rate significantly, because people do not want to provide it. And second, a staggeringly large proportion of people provide a Social Security number that just doesn't happen to be the correct one.

Mr. ZELIFF. So that gets back into that serious question of, if we do sampling, what happens to the credibility, and do we get greater or lesser participation? It's something we have to be very careful of, I would think.

Am I hearing, or have I heard, in terms of the short form, I know your testimony first was indicating that we should go strictly to a short form. Did I hear you right?

Ms. BAILAR. No. I think until we know that there's going to be some way of getting the long form information, which State and local governments, as well as the other Federal agencies need for programming purposes, planning purposes—if the continuous measurement program is funded, that's one thing. But if we just drop it entirely, then there are a lot of people who use that data that wouldn't have an opportunity to get it at all.

What I was saying is that, when we go to sampling, at the point where you've already got 90 percent of the data, at that point, I don't see any purpose in using the long form, because many times, if you look at past results in previous censuses, the long form is really sort of dropped by the wayside there anyway. So that's what I was suggesting, not to just drop it altogether.

I would like to go back to a point you raised earlier, and that was the use of the post office. I was really quite impressed yesterday at the Census roll-out by the person from the post office who was going to be providing the list to help improve the address list. And he said the job of the post office is to deliver mail where people live, not to find out where the people actually are living, but where they pick up their mail. The job of the Census Bureau is to try to find out where they live, which isn't always the same place.

And I can't see how, when we have mail that's delivered in a variety of places and people are picking up their mail at places where they don't live, how those people are really going to be able to do an accurate job in actually locating the people.

Mr. ZELIFF. OK. Mr. Chairman.

Mr. CLINGER [presiding]. Mr. Barrett.

Mr. BARRETT. Thank you, Mr. Chairman. I apologize to the committee members. As you can tell, we've been in and out all morning with votes.

The 1990 census was the most expensive and, some would argue, the least accurate census in our country's history. If you look at the cost of counting households, it jumped from \$10 per household, in 1970, to \$25 in 1990, I think we have to act to make sure that the 2000 census is both reliable and cost-effective.

My question to any of you sort of involves the short form/long form. Do you think that we are trying to do too much with the census? Is that part of the problem that it's getting more expensive and less reliable? Should we be just doing the head count and leave the statistical methods for other times?

Mr. Murdock.

Mr. MURDOCK. Let me speak on that. I think one thing we have to recognize is, when you say, are we doing too much, I don't believe so because of the extensive use that is made of these data. Every local jurisdiction uses census data in one form or another to make decisions.

When you begin to look at the thousands and thousands and thousands of local and State and Federal decisionmakers that use these data, it's hard to come up with a—you can talk about the cost per person that responded. You might look at the cost per person that used those data, and I think you'd find out it would be a quite cost-effective mechanism.

The other thing I think that needs to be recognized is, yes, the 1990 census was not as good, in some ways, as other censuses. But, you know, I will be a defender here of the Bureau in saying that we have among the best censuses in the world. It is not that this is a terribly flawed product that doesn't provide information that is generally useful and adequate; it provides lots of useful information.

Can it be improved? Should it be improved? The answer is yes, it should. But we should not see this as some product that is not useful, that is not instrumental to the decisions that are being made in small areas in Wisconsin, in small areas in Texas, and large areas, as well.

Mr. BARRETT. And I agree with you. I think that it is instructive, and I think it's useful. My concern with the overreliance on sampling, though, is that I'm concerned that some of the new methods proposed by the Census Department will undermine our Constitution's directive for an actual count, because there is so much valuable information that we can get out there that that becomes more of the focus than what the Constitution tells us to do, and that is to actually count the people.

Mr. TRUSSELL. Well, I think that there is widespread consensus that the Bureau ought to make a very good faith effort to count everyone physically. What we have to decide is, when is enough enough? In my own opinion, the Bureau's plans certainly are conservative in that way.

But, remember, the long form information goes to only 1 out of every 6 households, and it was the conclusion of our panel, and it's in our written testimony, that it is not the long form that has driven up the cost of the census. In fact, the long form is a very cheap

way to get additional information, and the reason is that you are already building on the entire infrastructure of going out to contact every household.

We estimate, and now the Bureau estimates, that if, in the current plans for the 2000 census, the long form were eliminated, you would save \$200 million. You would also lose an incredible amount of data. Certainly, the vast uses of those data are worth the \$200 million.

Mr. BARRETT. From my perspective, and, again, I come from a State and a municipality where tremendous effort was made—I mean, this was a big deal in my community and the State, because we knew we were on the bubble, frankly, to lose a congressional seat. So the Governor, the mayor, the Senators, everybody was involved in making sure that everybody was counted.

Having been through that experience, I think that we need to focus our energies on counting those households rather than legitimizing skipping counting those households. And that's my concern, is that you are creating a disincentive to actually do a good job. Why am I wrong in that analysis?

Ms. BAILAR. I think, you know, extrapolating from Wisconsin, which is extraordinary in the way people cooperate with this, to all the other States is probably not the right comparison. If you worry about people losing credibility, think about the population groups that for years have been shown that they have been undercounted, and yet nothing ever gets changed in the census. It just goes on. And the next time the census is done, there is another number that says, "Oh, they have been undercounted again."

So perhaps what you are suggesting is that we want to get the full cooperation of all the States to get the people out, get as many counted. I think some of the new procedures by the Bureau about having more forms out where people can pick them up, turn them in, be able to call up, get interviewed by telephone, these are going to increase the public's response.

But we've got to remember that we've still got these areas of the country where we're going to have people who are not as educated, not as motivated, and yet are we supposed to just leave them out? I don't think so.

Mr. BARRETT. But don't you think that there's an obligation for elected officials? As Carrie Meek was saying, or someone else was saying earlier, there's an incentive for every one of us to have a good count in our area. At some point, whether it's Members of Congress, whether it's State elected officials, county commissioners, if you're looking for people who have a vested interest in having all the bodies counted, it's us. To say, "Well, we're just going to sort of skirt over that," I think let's us off the hook, to some extent.

Mr. TRUSSELL. But the Bureau would be simply—absolutely delighted if every single one of you worked as hard to get out people to be counted in the census as you did to get out people to vote. If it's a challenge that you're issuing to yourself and to your members, the Bureau and the American public would applaud it.

Mr. BARRETT. I have no other questions.

Mr. CLINGER. Dr. Schultze and Dr. Trussell, when your panel did its work on the census requirements for 2000 and beyond, you indicated in your testimony today that the panel determined that the

length of the form, that is, the number of questions and the content really had little or no bearing on the response rate that was achieved.

That would seem to fly in the face of the testimony that Dr. Bailar gave today, which indicates, contrary to those findings, that the results from the 1995 census test were consistent over all three sites, and that was that the shorter the form, the better the response, which would suggest either that somebody's wrong here or things have changed since you did your work.

Mr. SCHULTZE. I think the first thing you have to remember is that the long form goes to 1 out of every 6 people. And undoubtedly there is some reduction in the response rate when you send out a form that—include the long form and don't. The point is that when you then look at what that does to the overall response rate, recognizing in 1 in 6 that it's going to, it is not a very big number and does not have a very big cost impact on the census.

So what you're getting is—that's one of the reasons why we said that the additional cost of putting a long form on is not very high, maybe \$200 million in the \$4-billion cost of the year 2000 census. Yes, it does probably reduce the response rate some, when you figure it's only 1 out of 6, the overall impact is still relatively small.

Mr. CLINGER. You're saying it's de minimis, really.

Mr. SCHULTZE. "De minimis" may be too small, but not very big, and you're getting an awful lot of information.

Mr. CLINGER. Dr. Bailar, do you want to respond to that?

Ms. BAILAR. Well, I think 1 in 6 is what the fraction is someplace; 1 in 2 is what it is in a lot of the other smaller places. But I think one of the real differences between 1995 and what the panel was looking at for 1990 is the effect of doing the census in the context of a decennial census where you have all this publicity. So, when you do the test census, you don't have all of that. So the long form may suffer.

Mr. CLINGER. A little skewed, you're suggesting.

Ms. BAILAR. And we've seen that in past censuses. So it may very well be that, when you come up to the level of publicity at the year 2000, there is very little difference.

Mr. CLINGER. Just to the panel, in general here, one of the things that concerns me is that I think there is going to be a relationship or correlation between the response rate we get in 2000 and the growing hostility to Government and all its ramifications. I mean, I think we've seen that. We politicians certainly see it. And I think all bureaucracies now see it, that there is really growing, not just cynicism, but actual hostility.

How do we obviate that? How do we get around that serious problem?

Dr. Schultze.

Mr. SCHULTZE. I'm not sure I know. I think one important point is that—and here is where the Congress really has a major responsibility—to the extent that the feuding elements in Congress, and in particular those elements in Congress, that part of the Congress that is very concerned about the size of Government and isn't mainly going around telling people how good Government is.

Unite. This is something that the Government does that, on balance, it does well. We need it. It is certainly an essential part of

Government. So coming not just from the people who are always saying, "The Government ought to do something," but from both sides of the aisle, as you get closer to the census, the more—I realize this is not going to be big in the minds of most Congressmen—but the more that Governors and Congressmen and others from both parties can say, "This is a good part of Government, whatever you think about the rest of it," and cooperate, that will help a lot.

Mr. CLINGER. I think the point Mr. Barrett was making, and basically you are making, is that we really have a role to play, a very important role to play in making this thing work. I mean, in terms of trying to get the turnout, we really do have a very significant role to play.

Mr. SCHULTZE. If I can add a little bit more, the one thing our panel wrestled with, and we had to make up our mind, and we did, and the Census did, that is a legitimate worry, that if you're going to go to sampling and statistical estimation to complete the count, do people say, "To heck with it"?

We talked about this a good bit and finally decided that, if it were done in the right framework, with the right publicity, with the kind attitude I've indicated, that you should be able to keep—and, simultaneously, the census improved the friendliness of the forms and did certain other things—you could keep the mail response rate up, despite this potential downside. But that means, I believe, there's an even bigger responsibility on the part of elected officials in the Congress to promote that.

Mr. CLINGER. Dr. Bailar, you had suggested, or some have suggested, that 90 percent was perhaps too high—and maybe this has been discussed while I was out of the room—but that maybe 70 or 75, or some other figure, could be the benchmark to point toward. Congressman Petri made the point this morning, though, that if we really go toward sort of a lesser amount, doesn't that discourage the takers, the head counters, basically, from doing their job? Because they know that there's going to be, if they reach a de minimis amount, they are going to be able to say they did their job.

Ms. BAILAR. Well, that may very well be. That's why I would like to see what the research from the Census Bureau is going to show. Perhaps the reason they chose the 90 percent cutoff was for that very reason, that you could try to do as much as you could, and then just use that last 10 percent.

However, my feeling is still that, in many cases, in past censuses, there was a sample; it just wasn't called a sample. It was determined by the cutoff period for the time that offices had to close, and it wasn't scientifically controlled at all.

I'm not advocating 65 or 70 percent, I'm just saying I was kind of surprised that they went immediately to 90. But there may be, for the very reasons that Mr. Petri was talking about, that they thought that was the best place to start.

Mr. CLINGER. So what you're saying is, we basically are formalizing sort of a system that has existed, crudely anyway, all along.

Ms. BAILAR. That's my feeling.

Mr. CLINGER. Any further questions from anybody?

Mr. ZELFF. Just one question. This may be a dumb idea, and probably is, but in the interest of looking for new alternatives, you said a couple times that State and local governments need certain

things, answers and input; and the Federal Government needs certain input on the census. Beyond that, I'm sure that there are other interests that are involved, but let's just say that we're able to narrow it down to what the Federal Government's needs are and the State and local governments needs are.

Is there an opportunity for a partnership, once you get through the first, second, and third times—and let's say you get it up to 75 or 80 percent—getting the State and local governments involved, since they have a vested interest?

Ms. BAILAR. Well, I think the Bureau's plans are already to get State and local governments involved. They are doing this by having them involved in looking at the address lists now, before they even start the census, trying to get them to build those lists. I'm sure that, given their attitude now about partnerships and really accepting help from the outside, that maybe there are some other things that could be done and should be looked at.

Mr. ZELIFF. Because I'm just thinking power back to the States and resources back to the States. There is obviously a vested interest here, not only in getting the lists right before it starts, but also in the follow-up and finding where people are.

Mr. CLINGER. I just have one final question here. Is there any assurance that what is being proposed here, in the way of a sampling approach, would have a differential or harmful effect on the accuracy of the count for any particular group, such as rural versus urban? Dr. Murdock, I think you stressed this—or African-Americans, or any other ethnicity or race. I mean, are there potentials here for discrimination, inadvertent or advertent, with the sort of sampling techniques that are being talked about?

Mr. MURDOCK. Well, I'm not the statistician here; I'm a demographer. But what I do know about sampling suggests that, for any area, the smaller the sample size, the larger the sampling error. Therefore, for these smaller areas, unless there is extensive oversampling to counter it, to the extent that you go to a sampling procedure, you're going to have difficulty in the accuracy of any statistical assessment for a smaller area.

Mr. CLINGER. Thank you. Dr. Wachter.

Mr. WACHTER. Yes. You raised, a minute ago, this question of the hostility or fear or alienation of hard to count groups. This has a great deal to do with the sampling, because the sampling will be focusing on the hardest to count groups. Those are the people that it's aimed at. And statistics isn't magic. The information that's going to go into the integrated coverage measurement, and perhaps the last stages of the nonresponse sample, is going to be poorer and poorer field work information, because that's where it's harder. That's the populations that are harder to count.

Therefore, to some extent, the more statistical complications you add onto this, the more you are dealing with less and less reliable information. I think some people have been too quick to see sampling as some cure-all, that if you sample, you can save the costs and solve the problems. The sampling is going to be very problematic.

Mr. TRUSSELL. The counterargument is that we have fewer and fewer people who are willing to work temporarily for the census who are qualified to do so. So the goal is to be able to find a small

pool of well-qualified people who can do the sampling, instead of using a large pool of unqualified people to do their kind of sampling.

Mr. CLINGER. Well, obviously, we have a dilemma here. I mean, there's a sense on the part of most of us up here, we want to get as many heads actually counted as we possibly can, or at least most of us feel that way. On the other hand, we have these inexorable budget problems that say we don't have unlimited funds to do all this with. So we have a real kind of dynamic tension, I guess, between the fiscal restraints that are on us with the necessity to do this job.

So to the extent that we can—and I think the Census Bureau deserves commendation for really taking a look at this and trying to come up with innovative technology, hopefully, less costly, in the long run, to make this happen.

Ladies and gentlemen, you have been extraordinarily helpful to us. We appreciate your patience in being willing to sit here all morning and most of the afternoon to help us with our dilemma and our challenge. Thank you all.

The committee stands adjourned.

[Whereupon, at 1 p.m., the committee was adjourned.]

[Additional material submitted for the record follows:]

PREPARED STATEMENT OF TOM RIDGE, GOVERNOR, COMMONWEALTH OF PENNSYLVANIA

Chairman Clinger and members of the Government Reform and Oversight Committee, I appreciate the invitation to testify at the hearing on the design of the 2000 census. I would like to submit the following remarks for the record.

As many of you know, during my tenure in Congress, I served as the Ranking Minority Member of the Subcommittee on Census and Population of the Post Office and Civil Service Committee. I held this position from 1988-1992 and it afforded me the opportunity to become well-educated on the census process, especially with regard to the 1990 census.

The Census Bureau did an excellent job in conducting the 1990 census—a herculean task, to say the least—but there are areas where the Bureau could, and should, make significant improvements in the census-taking process. The most controversial issue surrounding the 1990 census was if the census numbers should be statistically adjusted. After the 1990 census, the Census Bureau conducted the Post-Enumeration Survey (PES), a sample survey used to evaluate the accuracy of the actual 1990 Census Enumeration. The PES estimated the undercount, those persons not counted, to be 2 percent. It was estimated that Hispanics were undercounted by 6 percent and Blacks by about 5.5 percent. This is known as the differential undercount. If there had been an adjustment of the actual 1990 Census numbers, the PES would have provided the data for adjustment.

I opposed adjustment of the 1990 census, for many reasons, which I will discuss in further detail later. However, I feel it is important for this Committee to understand the impact an adjusted count would have had for the citizens of Pennsylvania. States, such as Pennsylvania, which met their responsibility to respond to the 1990 census, would have been penalized if the adjusted numbers were used. For Pennsylvanians, adjustment would have meant the loss of millions of dollars in federal funds as well as a congressional seat.

To make my point, in 1991 the General Accounting Office (GAO) did a report on (1) the use of population-related data in federal grant programs and (2) the potential implications of the proposed use of 1990 census adjusted population data in place of decennial figures. GAO simulated allocations for three major federal programs—Social Services Block Grant, certain Federal-Aid Highway Programs, in which population is a factor, and Medicaid. The GAO study found that if the census numbers are adjusted, Pennsylvania would lose more than \$1.9 million in Social Services Block Grants; \$2 million in Federal-Aid Highway Programs; and \$36.4 million in Federal Medicaid.

For these and many other reasons, I am pleased that the Census Bureau is reengineering the design of the decennial census for 2000. In reviewing the Census

Bureau's proposed design, there are parts of the framework I strongly support and others, especially the proposal for the "one-number" census, which I am concerned about.

I would first like to address the elements of the proposed plan for conducting the 2000 census which, in my opinion, will improve the accuracy of the census. First, and foremost, is the reliance the Census Bureau is placing on the U.S. Postal Service (USPS). I have been a longtime advocate of the Census Bureau forming such a partnership with the USPS. Letter carriers deliver mail on a daily basis and know if a housing unit is, or is not, occupied, or even exists. It is only common sense, therefore, to have these letter carriers provide information to the Census Bureau when they cannot deliver notices or questionnaires because housing units are vacant, addresses do not exist, or addresses have been missed in the 1995 Census Test.

The Census Bureau's plan to work with the USPS, together with state, local, and tribal governments to update and enhance address file it had created by the end of the 1990 census, should improve the accuracy of the decennial census. The more complete the address list, the less likely it is that individuals will be missed in the census enumeration. There is no reason why the Census Bureau should not use these sources to verify that their address list is complete.

The Census Bureau should also be commended on their commitment to improve participation. Both making it easier to be counted and educating Americans on the real impact the decennial census has on their lives should decrease the number of citizens not counted.

I am pleased that the Census Bureau is taking these positive steps to improve the decennial census count. Now I would like to address a proposal in the design I believe will have a negative effect on the census, which is the proposal for a "one-number census." It is my understanding that the Census Bureau will use administrative records in an attempt to accurately "assign" people to house units from which no forms were returned. Beyond that, the Bureau will use a large sample survey to estimate the information that people would have supplied if visited by a census taker.

The Census Bureau will then conduct a large survey, called the Integrated Coverage Measurement (ICM), to estimate, how many people and housing units it missed or counted more than once in the previous step. In essence, the Census Bureau is incorporating a statistical adjustment into the census count.

There is an old saying that there is no way if judging the future, but by the past. For this reason, I would like to revisit the 1990 census, and specifically the issue of adjustment. I participated in hearings with advocates of both positions, listened to experts and discussed this important issue with census and other executive branch officials. From that work I became convinced, and remain so, that an unadjusted 1990 census offered the most reasonable and reliable count of the population.

I am not alone in that opinion. The Special Advisory Panel, established to evaluate the accuracy of the two sets of numbers, split evenly as to whether there was convincing evidence that the adjusted counts were more accurate. There was also disagreement among the professionals in the Commerce Department, which includes Economics and Statistics Administration and the Census Bureau.

As I discussed earlier, an adjusted count would also have had a negative impact on Pennsylvania. Pennsylvania, where the count was most complete and accurate, would have lost the most, both in federal funds and Congressional representation.

Lastly, but as importantly, the decision against adjustment was a decision to uphold the intent of the Constitution. Article I, Section 2 of the U.S. Constitution calls for a census count, not a census survey.

My opposition to the adjustment of the 1990 census, makes me approach the proposal for a "one-number census" with trepidation. I am not convinced that statistical estimation techniques have advanced enough, since 1990, to guarantee that using surveys to estimate the number of those missed or counted more than once is more accurate than the actual headcount, required by the Constitution. Using statistics to address the census undercount, is a step that we must take with much caution. The decennial census is too important to the citizens of this nation to allow it to become a statistician's playground.

The partnership the Census Bureau has formed with the USPS, the improved address list, and the Bureau's commitment to improve participation, will help to reduce the differential undercount. I do not believe, however, that increasing the use of sampling and estimation will necessarily lead to a more accurate census. I urge the Census Bureau, to consider the impact that this decision will have on all citizens of the nation.

PREPARED STATEMENT OF RUDOLPH W. GIULIANI, MAYOR, CITY OF NEW YORK

I am grateful to Chairman Clinger and the Members of the Committee for the convening of this hearing and for the opportunity extended me to provide this Statement. The decennial census is of bedrock importance to our democratic society, for it is the foundation upon which rests the fair allocation of political representation. That fact alone, which is why the Framers of the Constitution deemed a decennial census a basic necessity for the system of government they brought into being, makes the census a matter of vital national interest. When one takes into consideration as well the myriad uses made of census data, from the distribution of Federal funds to the planning of public and private projects, the importance of the census can hardly be overstated. The centrality of the census means that we must all be critically concerned that the census be as fair as it can practicably be made.

The hallmark of fairness is accuracy. Although impossible to achieve with perfection, the goal of census-taking can be stated with ease: to count all Americans, locating each where he or she resided on Census Day. I know that the many voices that have been and will be heard on the issues raised at this hearing share a common fidelity to that goal. I know too, however, that as the hard work of planning for the 2000 census progresses, there will be inevitable distractions from that goal. When various approaches to census-taking are considered, it is tempting to state, even if the assertion is largely guesswork, that each approach will yield "winners" and "losers," places that will be advantaged or disadvantaged by the use of one technique or another. It is tempting to conceive of a more accurate count for a particular place as a just reward for a higher level of voluntary census participation and of a less accurate count as a deserved sanction for a place whose residents failed to respond as diligently to mailed census questionnaires or Census Bureau enumerators.

We should resist those temptations. The census is not a game, and the desire to "win" a higher count for one's home jurisdiction should have no place in decisions about how the census should be conducted. The census is not a prize, and an area whose residents are less easily counted should not be penalized. Bear in mind that there are many reasons why residents may be omitted, few of which have anything to do with the derelictions of individual respondents. We know from long experience that there are places, especially in our inner cities and remote countryside, where the Bureau's address lists are less reliable or where census forms are less likely to reach their intended recipients. We know that in areas with non-standard households, the basic census questionnaire is poorly calculated to permit an accurate accounting of the number of residents in a housing unit. We know that residents with little or no knowledge of English have greater difficulty in completing census questionnaires or communicating successfully with enumerators. Yet none of those factors suggests that anyone has done anything wrong, let alone deserves a penalty. Moreover, it must be stressed that the injury of a disproportionate undercount falls not just on those who failed to respond but rather, and primarily, on their neighbors who diligently completed their census questionnaires yet are deprived of their fair share of representation and funds.

Just those concerns have motivated the City of New York in the litigation we have maintained concerning the 1990 decennial census, a case that awaits its resolution by the United States Supreme Court. This is not the place to restate the position we have taken in that suit. It is the place, however, to call attention to a point as pertinent to the 2000 census as it was to the 1990 census. The achievement of a fair census rests on the maintenance of an independent Census Bureau and on a respect for the Bureau's designs for the most accurate count practicable. If decisions about how the 2000 census is to be conducted rest firmly on the Bureau's exercise of its expertise, public confidence in the results will follow. If the Bureau is prevented from following the dictates of its professional judgment, public confidence will erode.

The immediate subject of this hearing is the Bureau's planning for the use of sampling for a portion of non-response follow-up and for the use of integrated coverage measurement in preparing the 2000 census. I applaud the Bureau's initiative on both innovations. The wider use of sampling can only improve the accuracy of the census, while helping to curb its ever-increasing cost. Integrated coverage measurement, and the production of a "one-number" count, addresses the persistent problem of differential undercount, the most serious inaccuracy to afflict the decennial census over the past several decades (at the very least).

I understand that the Bureau's embrace of new techniques has inspired skepticism, but I believe that skepticism is misplaced. That skepticism derives in part, I think, from the notion that the Bureau seeks to replace a "traditional" census, in which the goal is to count each and every American by personal contact, with a new-fangled alternative in which statistical models are given pre-eminence. But there is

no "traditional" census. The census as we know it today is no simple headcount: it is a complex managed process in which tens of millions of counting errors are balanced to produce a necessarily imperfect result that is best characterized as an "estimate," not a "headcount," of the national population. Last year the National Research Council, building on work by the Bureau itself, estimated that the 1990 census contained 36 million counting errors of various types. By controlling the distribution of error, the Bureau achieves a national census in which aggregate population totals are not nearly as inaccurate as the local-level data on which they are based. What the Bureau accomplishes is, without a doubt, an astonishing piece of data compilation. But we should all understand that that achievement depends on sophisticated statistical and demographic models.

The use of statistical inference, whether based on sampling or otherwise, has long been a part of the Bureau's approach. What the Bureau has proposed for the 2000 census does not represent a radical departure in the conduct of the census. In past censuses, the Bureau has used sampling-based statistical adjustments to correct for, for example, deficiencies in Bureau address lists in the rural South and misreporting of housing units erroneously deemed vacant when actually occupied. The Bureau has consistently used statistical inference to attribute population figures to housing units for which occupancy status is unverifiable and to attribute personal characteristics to persons known to exist but for whom no identifying information is available.

Thus, a second source of skepticism, which arises from doubt about the Bureau's ability to manage changes in census-taking technique, is also misplaced. Throughout its history, the Bureau has modified the census process considerably. The techniques just mentioned are but a few examples. In 1960, to take an illustration of genuinely radical change, the Bureau managed the conversion of the census from a process based largely on door-to-door enumeration to one in which a mailout-mailback of questionnaires was the basic component. I take very seriously the Bureau's expert opinion that a particular change in census-taking will enhance census accuracy. Nothing in the Bureau's history suggests that it has ever engaged in innovation merely for the sake of innovation or experimented recklessly with the conduct of the census.

Of course, to say that is not to say that planning for the 2000 census should proceed without oversight and local review. The Bureau has an obligation to explain its plans to the public. An ongoing dialogue between the Bureau and its constituency—which is to say, all of us who depend on the Bureau for a fair count—is critical to the enhancement of public confidence in the census. This hearing is an important part of that dialogue. I appreciate the difficulty in focusing public attention, in 1996, on planning for a census that is more than four years away. Nonetheless, the Bureau must continue its efforts to present its plans publicly, even as those plans develop. The Bureau's recently announced initiatives must be the subject of further discussion as the details of those plans are refined, tested, modified and implemented. The role of Congress in guiding that discussion is critical. At State and local levels, those of us in positions of leadership must make sure that the discussion is truly national. I look forward to continuing the discussion in Washington, in New York City and throughout the country.

