# Chip Alexander and the American Community Survey Alan M. Zaslavsky, Harvard University Department of Health Care Policy, 180 Longwood Ave, Boston, MA 02115

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It is an occasion of both sadness and joy to memorialize the life of Charles H. ("Chip") Alexander, who left us so suddenly on September 1, 2002. Chip was in many ways a model for leadership and statistical innovation at the Census Bureau, and the four papers presented in this session reflect various aspects of his leadership, particularly on his last project, the American Community Survey.

Before turning to the substance of the papers that were presented at this session, we should consider the reasons that Chip was both beloved and highly effective at the Census Bureau. As a researcher who relies on surveys, I approached this task by reviewing Chip's work and also seeking comments from some of those who worked most closely with him, particularly on the ACS.

A tremendous contributor: Chip served as the technical advisor and authority for at least 21 surveys conducted by the Census Bureau, other federal agencies, or other sponsors. It is difficult to summarize his impact in this area because so often it was not formally recognized, and yet was crucial to solving major problems. At the same time, his colleagues speak to his willingness to help with the least recognized tasks, such as reviewing papers for his colleagues.

A methodological innovator: Chip supervised the design and analysis of the Census Bureau's first fullscale test of Random Digit Dialing sampling (in the National Crime Victimization Survey), and developed and implemented statistical and survey methods for RDD surveys. He developed innovative sampling and estimation methods for several other surveys. Chip was a key person pioneering the introduction of new approaches to calibration estimation, analysis with missing data, and the use of administrative records (particularly in small-area estimation). He was also a key player in a Bureau-wide redesign of methods for current surveys after the 1990 census. Many statisticians, themselves respected experts in sampling and estimation, spoke of how Chip could get to the essence of a problem in a discussion of a paper or in taking up a casual suggestion and turning it into a new methodology.

When the Census Bureau first began to investigate seriously the potential for implementing Leslie Kish's idea for a "rolling census" (Kish 1990), Chip was outstandingly qualified to take on this job, possessing a unique combination of statistical expertise, orientation toward innovation, and ability to mobilize and lead a staff. Chip was the heart and soul of the development of the American Community Survey, and his impact is manifested in each of ACS the papers presented at this session and other sessions of this conference. As one of his senior colleagues pointed out, Chip was chosen for this role not because of his place in the organizational chart, but because he had the broad vision to conceptualize a Continuous Measurement Program that would synthesize survey, census and administrative data.

A philosopher and all-sided thinker: The groundbreaking nature of the ACS called for a leader who could relate the details the an entirely new "big picture." One of Chip's colleagues wrote: "...Chip was first and foremost a philosopher. I would bring ideas and concerns to Chip that I considered operational considerations ..., and he would ask me lots of questions about what I thought would work, what I thought wouldn't work, and what I thought the impact on the data would be. And within days Chip would have a short paper he had written on "the philosophy of .(whatever we were currently trying to decide)..", the concepts that the topic embraced, the statistical implications, and even the possible political implications. ... Chip could always see a hundred different ways to explain a situation, and even more ways to go about solving a problem."

Positive and optimistic: Once Chip had sufficiently investigated the concept of the ACS to be convinced that the case for it was firm, he proceeded with a characteristic optimism that inspired his staff and his collaborators outside the Census Bureau, honestly discussing difficulties with confidence that the project was sound and problems could be resolved. A colleague wrote, "The thing that stands out the most is his positive attitude. Whether a situation/issue was related to statistics or real life (?), Chip always made me feel that it was important and he was also interested in it." Another wrote, "he approached the ACS with a calm resolve that became his trademark and made him so special. ... His true genius was in his ability to demonstrate how the ACS could be used/ moved/changed to accommodate many different data user constituencies. All of this was grounded in faith that the Survey was inherently plausible." As another summed it up, "He never said a negative thing about anybody, no matter how he truly felt."

A mentor: As a supervisor of statistical staff, Chip was a notably successful mentor. A large proportion of those who worked directly with him went on to be promoted to positions of leadership within and outside the Census Bureau. A colleague wrote: "He went out of his way to select people for his staff who he believed were capable of independent work, and then (more importantly), he nurtured and encouraged them to grow as independent researchers. Some "took" to it, and some didn't, but he was always optimistic. And he created a positive work environment in which ideas could be discussed and shared."

Modest, selfless, open and respectful, gracious and generous: Chip proceeded with no regard to his own personal glory, despite the ground-breaking importance of his work. When Julia Bienias and I were putting together Chip's ASA fellow nomination, the most difficult part of the process was extracting a CV from him so we could assemble his case. A colleague wrote, "One of Chip's outstanding characteristics was his ability, and willingness, to talk to anyone at any level without the need to posture. Because of this, he was able to reach so many more people with his ideas, and also to listen to, and benefit from, others' ideas." Said another, "He was very patient, but was never condescending when we missed the point or didn't get things quite right." From another Census colleague: "I have always felt more respect for the higher ranks when they listen and take the time to talk and discuss statistical and work-related issues. Chip took the time with us ... to listen and respond to our views."

By this point, if Chip were here he would be saying "enough with the praise, let's get on with the research." In that spirit, comments on the four papers follow.

## Navarro/Alexander

This paper represents Chip's commitment to clarifying the objectives and consequences of switching to continuous measurement statistics, specifically those based on the ACS, to potential users, primarily current users of census long-form data. This paper was part of a major effort involving many meetings with staff of user agencies to redefine their needs and thus convince them not only to accept a different source of data, but to change their own way of working to exploit the improvements that more frequent and timely data would make possible. The paper considers tradeoffs affectng the precision of the estimates, involving 4 factors: the size (population) of the area of interest, the size of the subgroup of interest (equivalently, the prevalence of the characteristic), the currency or responsiveness of the measure, and the overall sample size requirement. Using clear explanations and a clever set of illustrative graphic scenarios, the paper demonstrates to users that the ACS will provide better data for important uses, recognizing the importance of both programmatic and research uses of data. An important focus is to break down the barriers to acceptance of data based on rolling averages, showing that although they cannot be identified with the state of the world in a specific year, under plausible scenarios of

trends in population or other characteristics of interest they will usually be more precise than the decennial long form survey.

A more somewhat more complex issue is lurking behind this discussion, because the changed dynamics associated with more current data can have unexpected consequences for the behavior of some federal funding formulae (Zaslavsky and Schirm 2002). Thus at some point in the future Chip's successors may have to make arguments similar to these to formula administrators, eventually leading to some changes in legislation to bring it in line with the new data sources.

## Love/Griffin

The ACS promises improvements in the quality of survey data, but there are also dangers in moving from the well-established procedure of linking the long-form survey to the decennial census. This paper addresses these issues using response rates as a key measure of quality, including (1) unit nonresponse in each phase of the survey (mail, telephone and personal interview) and (2) item nonresponse ("allocations").

The main finding is that the lower initial ACS mail response rate (presumably a product of conducting the survey separately from the census and in a noncensus environment) is compensated for by better telephone and personal interviewer followup. Thus the ACS reverses the emphasis of the decennial census on maximizing mail response rates. Since the groundbreaking research on interviewer variance, led by Morris Hansen at the Census Bureau in the 1950s, the Bureau has tried to maximize its reliance on self-report and minimize the use of barely-trained short-term hires as followup interviewers. In the ACS, interviewers are part of a permanent, higher skilled staff that better approximates the capabilities of current survey interviewers. Furthermore, the ACS does not make use of proxies and therefore followup interviews are of higher quality.

The next level of research that is needed is a content comparison of the long form and ACS. Some differences between the two have already been identi-fied. Finding differences, however, should not be regarded as necessarily showing a problem with the ACS. Some differences are in fact expected, due to differing definitions in the ACS, notably the use of a de facto rather than de jure (actual rather than legal ) residence rule. Such differences do not indicate errors in one system or the other, but they have implications for the nature of the measurement that should be considered when users make the transition to ACS data. Other discrepancies might be due to differences in coverage and measurement methods; here, the ACS might very well be superior, but consideration will have to be given to appropriate methods for "bridging", even to a superior measurement system.

### Salvo/Lobo

This paper brings deep local knowledge to bear to gain insight about census processes affecting nonsampling errors. The research reflects Chip's commitment to working with and learning from experts at the local level. In Joe Salvo's words, "The only reason why I am working with the ACS data in the Bronx is because Chip not only had the guts to admit that the people in Suitland don't know everything, but the guts to trust the data with someone "on the outside" and "let the chips fall as they may."" I am particularly pleased to see this work due to my own historical connections to the Bronx!



The authors conclude that the "census environment" leads to better and more uniform mail response. On the other hand, the continuous effort of the ACS leads to less item nonresponse, better followup, and presumably higher data quality. Thus there is a tradeoff between a "crisis push" and a uniform, lower-profile effort. It appears that different factors can affect different types of error, and these relationships can be very local. Thus, for example, a publicity campaign might be very effective in increasing response among low-income Latino residents in the South Bronx while having no effect at all for a middle-income African-American community only 5 miles away in the north central Bronx. These very local effects are probably more prevalent in the census as in the ACS, due to its greater reliance on broadside publicity rather than systematic training of interviewers.

#### Slud

The final paper stands out as the most technical of the four, using logistic regression to model probabilities of nonresponse to the census as a whole and at various stages of the census (mail returns and personal interview followup at various stages). The models rely on aggregated data at various levels of geography; thus, predictors of response for individual households are not available (since not would be collected for nonresponding households).

The research is directed to several purposes; I suggest that each objective has somewhat different implications for model-selection criteria. For *in*-

*sample weighting*, we would seek a minimal smoothing of weights, and consequently the use of very complex models with many local-area indicator variables. For *prediction* (for operational planning) or for *weighting out-of-sample* (for calibration), we would seek good-fitting models, using tests of significance and measures related to predictive accuracy such as information criteria. Finally, for *scientific interpretability*, we would seek parsimonious models including a minimal set of variables. Thus, no one model can be considered the "best" for all purposes, and a criterion of out-of-sample accuracy that is appropriate to one purpose might be irrelevant to another.

There are many reasons to expect much local heterogeneity in response rates, illustrated by the variation across states and within the local area of the Bronx. Thus random effects models might be an appropriate option. Furthermore, the Bronx experience suggests that patterns for the ACS might differ from those for the census. An important operational difference between the ACS and the census is that the ACS can adapt its models and estimation methods on a shorter cycle, for example year by year instead of once per decade.

#### A lasting legacy

ACS development bears Chip's lasting stamp. Unfortunately, the program also needs to be defended. A long-run commitment is needed; as with methods, so with budgeting the ACS must depart from the "crisis" model of the decennial census. In fact a full commitment to the ACS is critical to the success of the Decennial. By continuing Chip's development work, maintaining links to users, and explaining the advantages of the ACS to policymakers, we can hope to bring this project to a successful fruition.

# References

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