

Discussion

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I am truly honored to have been invited to be this year's discussant for the seventh Morris Hansen Memorial Lecture. It is a particular pleasure to join my friend, Norman Bradburn, who has delivered his usual insightful and timely remarks about the future of statistics in the public policy arena.

I have to admit that I was a bit taken aback by Nancy Kirkendall's invitation, and pondered whether I was really qualified to pontificate on the state of statistics, given my rather glaring lack of any sound scientific training or experience. Here I was, the ultimate statistical know-nothing, thoroughly grounded not in numbers or methodology or scientific theory, but rather in the subjective, whirlwind, and often distasteful world of politics, policy, and public relations. Asked to impart some words of wisdom to a roomful of distinguished, well-respected and certainly well-credentialed scientists!

I thought back to my eighth grade days, when as the reward for winning my school's Math Award, I was promptly presented with Webster's Collegiate Dictionary, thus immediately ending my illustrious, but short-lived, love affair with anything numerical, and leading me to embrace any discipline involving the printed or spoken word as the primary medium.

In fact, it occurred to me that my glaring lack of comfort with numbers and science perhaps required a Shakesperian twist to my remarks this afternoon, just to set the stage for what is sure to be a painfully unscientific perspective on one of the most mysterious of scientific fields: statistics.

Shall we consider a question of Shakesperian proportions for a moment?

To sample or not to sample?

'Tis the question of the day.

Ought we still to use the punch card,

If Congress had its way?

To sample or not to sample?

Estimation, or last resort?

Can we blame the statisticians

When the numbers come up short?

To sample, or to count them?

'Tis a choice that seems so clear.

Yet perchance we think too narrowly,

And miss the point, I fear.

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For the question t'isn't simply one
 Of method-ol-o-gy,
 Or even how to meet the goals
 Of cost and equity.

But rather if we'll move ahead
 With science as our base,
 Toward newer modes of measurement,
 More precise in time and place.

'Tis the threshold of our future;
 Innovation on the line.
 Embrace the promise science holds?
 Or failure by design?

To move beyond the comfort zone;
 To cross the next frontier.
 Illuminate both flaws and truths,
 And calm the public's fears.

To sample, or to miss them?
 Is our sense of shame long gone?
 And where for art thou, sanity?
 The question lingers on.

Norman Bradburn, as always, you have hit the nail on the head. The issues of *relevance*, *timeliness*, and *validity* are precisely the points at which questions of policy and questions of science intersect. My many years of viewing federal statistics – both as a process and a product – from the perspective of lawmakers who are elected by the people (politicians, we call them), convinced me that there is an often barren crossroads – a “no man’s land” – between the two arenas.

Lawmakers, on the one hand, love numbers – to the extent that those numbers can support the need for new programs or make the case for eliminating old ones, or drive federal program dollars to the places they represent. But they also have little understanding of where those numbers come from: there is a rather gaping “disconnect” between the desire for data and any knowledge – or even interest – in how that data is actually *produced*. It is almost as if data comes out of thin air, appearing miraculously in the *Statistical Abstract*, and, as Norman Bradburn points out, more and more through electronic means of information access. Information everywhere, born of nowhere.

Federal statistical agencies, on the other hand, too often isolate themselves from those who use statistics to inform or develop policy, afraid to somehow “contaminate” the scientific process of producing statistics through contact with a process often guided by, or at least influenced by, political considerations.

And there is something else going on here, as well: a tendency to assume that the science of producing statistics is too complex, too foreign, *too scientific* for the average policymaker (whether it is an elected official or his or her staff) to grasp.

Hence, policymakers often end up with no useful information at all about the process of

creating a data series: how surveys are taken, why one methodology is used over another, how much it all costs – and the result is that they are left to decide for themselves whether the numbers are “good” or “bad” – and that is a rather dangerous game, as we all know from watching the debates in Congress over the accuracy of the Consumer Price Index and proposed census sampling methods.

This “disconnect” between science and policy is unhealthy, I think, from both vantage points:

Lawmakers often do not have the information they need to make wise decisions about the need for data and the use of data for policy purposes. Federal statistical agencies risk becoming more irrelevant as they lose the battle for shrinking fiscal resources to more program-oriented agencies.

So how do we make the *connection*? How do we make sure that the federal statistical system can meet the challenges that Norman discussed, of *relevance, timeliness, and validity*, as the demand for statistics, and the avenues of access to that information, explodes in “The Information Age?” The question I raise with you is one of the role – and, indeed, the responsibilities – of the statistical community, in meeting these challenges. The task for you, I think, is to create an environment that is conducive to a responsible discussion of statistics – and the key issues that affect them, including their meaning, their limitations, their use, their ability to inform policy, and their future.

The statistical community – the *profession* of statistics – in general and as a whole, must create an *environment* that is supportive of specific statistical work in federal agencies, and conducive to responsible dialogue about the reliability, timeliness and validity of those statistics, based on a reasonable understanding of their scientific grounding.

And “dialogue” is a key word here, as well. The statistical community must be open to the points of view and concerns of those whose work and mission is grounded, not in science, but in governance.

You must put yourself in their shoes. You must recognize that there are policy uses and policy consequences associated with statistics from which you ought not to shield yourselves, but rather, which you must try to understand to remain relevant in the Information Age.

It is the broader statistical community that must be proactive in creating this environment, because staff at the specific federal agencies that produce the data are often viewed as self-interested. And, in fact, to some extent they are – needing to justify their activities and priorities and budgets on an ongoing basis.

Let me give you a quick example. Norman referred to the irony of a Congress that chastised the U.S. Bureau of Labor Statistics (BLS) for failing to “improve” the Consumer Price Index (CPI) – the same Congress that repeatedly ignored BLS’s requests for the funds necessary to begin the kinds of revisions that would make the CPI more relevant, more timely, and more valid.

Unfortunately, however, it is the broader context of funding requests for activities like the CPI revision that make a scientifically-grounded case for those improvements difficult to make. To put it another way, any connection between scientifically-based refinements and their very real policy consequences in terms of budgets and programs, which Congress cares very much about, gets lost in the din of the legislative process.

That is because funding for BLS is considered as part of the entire Department of Labor

budget, which in turn must compete for dollars with education programs in the Department of Education and health research in the Department of Health and Human Services. And to muddy the waters further, the committees that consider BLS's program requests are not the same ones that grapple with fundamental issues affecting the overall federal budget or the ones that consider the future of entitlement spending, such as Social Security.

In other words, BLS – acting on its own – is not well-positioned to make the case for additional funding to improve a statistical series, no matter how critical to public policy or publicly-accepted that data is. But the agency stands a better chance if its request is made in an environment where lawmakers from the range of committees that must deal with both the numbers and the consequences of their use, have been part of an ongoing dialogue with the broader scientific community – statisticians and economists alike, in this case – about the evolution of the CPI, its meaning, its limitations, and possible alternative ways to meet the policy goals that Congress wants to achieve.

All of this, I recognize, is a very tall order. Consider the current state of discussion in the halls of Congress about the lynchpin of the federal statistical system – the decennial census.

“Would we rather have an actual real count to know that we are getting our share of Federal dollars or would we like a bureaucrat here in Washington to guess at it?” said one representative on the appropriations subcommittee that funds the U.S. Census Bureau.

“Unlike 1990,” said another influential legislator in the debate, “we are not even going to have an actual count of the population. Why? Because the administration only wants to count 90 percent of us, and then guess the rest.”

“Like all statistics,” said another representative, “it’s easily manipulated,” referring to the U.S. Census Bureau’s plans to use sampling for nonresponse follow-up and a quality check survey in the 2000 census.

The Bureau’s plan for 2000, said another, gives it the opportunity to “manipulate the count so that the numbers will be more to somebody’s liking.”

And this, my friends, from a representative who is a former professor of statistics at both the undergraduate and graduate levels: “I do not trust statistics. I teach my students to be suspicious of statistics.” (Mind you, this is being said in front of millions of C-SPAN viewers.)

To sum it all up, a senior House member responsible for overseeing the Census Bureau’s work has described all proposed uses of sampling and statistical estimation to produce the census population counts as “statistical guessing (that) is nothing more than a risky scheme ripe for political tampering.”

You should be outraged! This is your science they are talking about!

This is what you have trained a lifetime for? What you do for a living, reduced in the public’s eye to “GUESSING?”

What is going on here, anyway? How did we get to such a sorry state of public dialogue about statistics as a scientific process, and statistics as a product of that science?

Unfortunately, this demonstration of “know-nothingness” may have been allowed to fester out of neglect over many years.

I say this not as a point of criticism, but as I viewed the relationship for many years from within Congress, that the U.S. Census Bureau’s tendency was to toil – mostly by choice, I think – in obscurity and isolation – staying as far from debates among Members of

Congress about methodology and procedures and operations as possible – hoping that its own decisions – grounded in research and evaluation as they were – would carry the day without the need for too much explanation.

But the inclination to toil in isolation – as scientists often do – can be extraordinarily damaging to the statistical system, in my opinion. Because isolation creates a vacuum, and a vacuum bears silence, and silence breeds suspicion, and suspicion quickly becomes mistrust.

And lawmakers, who understandably view statistics in terms of *real consequences* – the allocation of political representation and program dollars, and the assessment of need, and the measurement of policy effectiveness – play out this mistrust in the public arena.

And the public's arguably most consequential exposure to things federal and statistical – the decennial census – is damned from the start for being – UNSCIENTIFIC!

But outrage, my friends, is merely the starting point. It is not a goal or a strategy or even a message. It is a necessary beginning for a collective, and I would suggest, systemic, effort to instill a reasonable level of comfort and acceptance of statistics in the policy arena.

If you want your work to mean more, to be more, than – well, just a bunch of numbers – then you cannot avoid the policy arena and the debates that inevitably, at some point or another, are reduced to statistics and what they tell us. You cannot dismiss these often painful debates as hopeless, born simply of political rather than substantive, although sometimes they are.

Believe it or not, there are thoughtful people holding elective office and making policy, although sometimes it seems that you have to dig deep under a rock to find them. And you have to look beyond the legislative arena itself, because the public most often views the process of policy development through the lens of the media and other social institutions.

The process of creating and sustaining an environment that invites thoughtful consideration of statistical policy as a useful tool to promote sound policy development, is an ongoing one that must span many arenas.

What exactly might you do to bring this about?

1. Meet regularly with journalists – both science beat reporters, and those on the health, demographic, and education beats – to be sure that they understand the important work that is being done, and needs to be done, in the federal statistical system. If you make yourself a resource, they will come to you. I commend to you a terrific article in last week's *Los Angeles Times* by science beat reporter K.C. Cole, about how sampling would be used in the 2000 census. Janet Norwood, John Rolph, Mary Gray, and others did an outstanding job of explaining in very understandable and concrete terms why conventional counting methods alone would not get the job done.
2. Better yet, request appointments with editorial board writers, to make the scientific case for the soundness of a statistical series or activity which may be at the center of a broader policy debate. Elected and government officials alike do this all the time, and editorial boards are always looking for material to make a sound case on important public issues.
3. Contact associations that represent journalists (and there are many of them), and offer a workshop at their next annual conference to educate their members about sources of

data, the meaning of data, how to use data, and the future of the data collection system.

4. Team up with industry users of federal statistics – such as the housing transportation, and health sectors – and offer regular briefings for congressional staff on the sources, uses, and availability of, statistics. Discuss priorities, emerging data needs, new methodologies, and future policy goals that can be strengthened by good data.
5. Form partnerships – across scientific disciplines (economists, sociologists, health care providers), and outside of the scientific arena entirely (business leaders, civil rights advocates, mayors and governors) – that allow an exchange of views and ideas about data needs and uses. How can you assure relevance, timeliness, and validity, unless a wide range of stakeholders can offer not only their perspectives, but be a part of the process of developing goals and priorities and a vision for the future of the federal statistical system that best meets the needs of the nation? *Statistics do not exist in isolation; neither should the science that produces them.*

The alternative, I think, to find your place at that nexus between policy and science, is a widening gap into which all reasonable consideration of statistical policy issues fall – that specter of “statistical know-nothingness” – where a proliferation of data permeates an already saturated society, divorced from any grounding in fact and truth.

At the Association of Public Data Users recent conference, Dr. Charlie Schultze (of CNSTAT census panel fame), said that the result of forcing the U.S. Census Bureau to take a census in 2000 that relies only on conventional counting methods would be a “statistical disaster.” He is right, of course, but there is more to fear than that. For the result would be, not only a “statistical disaster,” but a “policy disaster” as well, with consequences that reverberate around the statistical system and the policy it informs for many years to come.

We need to start thinking of those two outcomes as one and the same, if we ever hope to pull lawmakers and the public they represent out of the abyss of statistical know-nothingness, and help guide on a path toward sound policy grounded in sound science, for the benefit of all.

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