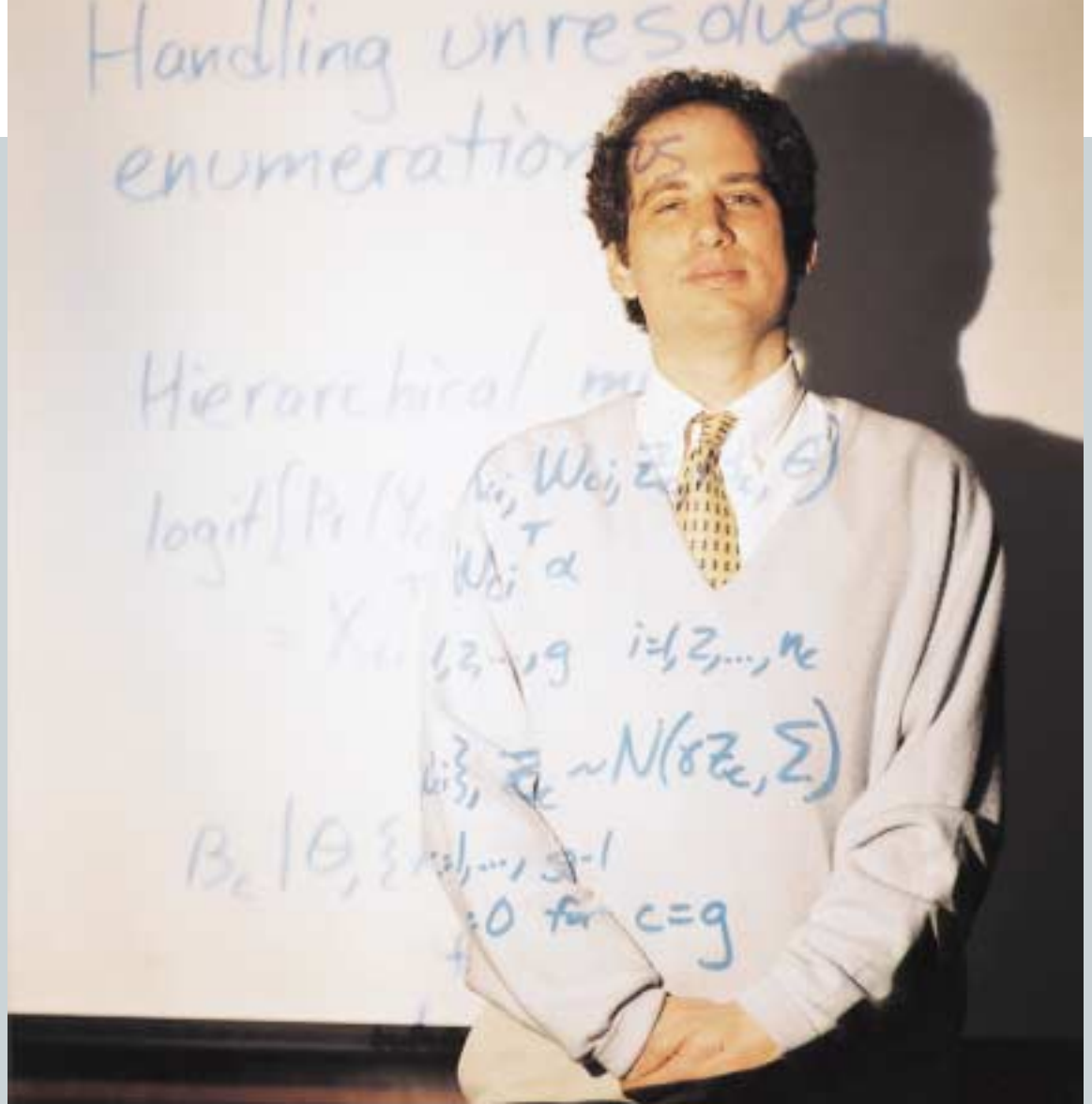


SPARKS FLY EVERY 10 YEARS OVER THE HIGH-STAKES QUESTION OF HOW TO TALLY THE U.S. POPULATION. ONE SCHOOL OF PUBLIC HEALTH FACULTY MEMBER IS AMONG A SELECT GROUP OF EXPERTS ADVISING THE U.S. CENSUS BUREAU.



# Thomas Belin: Counting on a Controversy

In the census of 1790, directed by then-Secretary of State Thomas Jefferson, household rosters were posted in town squares so that people could catch errors in the count. Still, Jefferson wrote in 1791, "We know that the omissions have been very great."

Political battle over census counts dates at least to the first use of the presidential veto, when George Washington blocked the original bill to reapportion the young Congress. In more recent censuses the battle has been waged over what to do about the undercount, specifically, of minority and inner-city residents. Since 1950, post-census surveys following each of the decennial head counts have found that these populations are disproportionately shortchanged. This has led to calls to adjust the original numbers using statistical formulas and sample-based evidence. But a Clinton Administration plan to use sampling in the 2000 census to follow up households that failed to return a census form led to the threat of a government shutdown and a lawsuit that ended up before the U.S. Supreme Court. The Court ruled that adjusted counts can't be considered in apportioning Congress, but left the door open for other uses. The issue flared up again earlier this year, when the Census Bureau recommended against releasing adjusted counts for state redistricting.

Why so much bickering over the ritual counting process? Many observers suspect that adjusted figures would help Democrats, since the undercounted are disproportionately from groups likely to support Democratic candidates. But more than that, the outcome determines the fate of some \$200 billion in federal funds for local services, including many that affect public health.

Dr. Thomas Belin, Associate Professor of Biostatistics at the UCLA School of Public Health, first became interested in census issues upon reading an opinion piece while an undergraduate at Stanford University in the mid-1980s. When he started graduate school at Harvard, he learned of a new campus research program on statistical problems related to census adjustment. He approached the professor in charge and joined the research team. While at Harvard, Belin took a series of summer jobs at the U.S. Census Bureau, work that grew into his dissertation project. Since coming to UCLA he has continued to serve the Census Bureau in a consulting capacity. Recently, Belin was one of nine experts chosen from the American Statistical Association to sit on the Census Advisory Committee of Professional Associations, which will offer recommendations with a view toward the 2010 census.

Although biostatisticians are frequently called on to quantify uncertainties, the census carries a set of thorny issues unlike any of the other projects he tackles. Says Belin: “The stakes are incredibly high. There’s a political context. There are a lot of messy details because of the complexity of the census and the country. And there is not a single right way to do it.”

It is often left to statistical experts such as Belin to devise formulas for resolving the undercount uncertainties. Yet, statisticians themselves can’t agree on what is the “best” adjustment formula. Adjustment critics use this lack of consensus to argue that given the subjectivity of adjustment models, the fairest system is to stick with the original head count. “But maybe there’s some subjectivity in that as well,” Belin says. Statisticians often talk of a trade-off between bias and variance, he notes. Variance refers to uncertainty in value; bias means systematic departure from the truth. “In a lot of statistical procedures, bias and variance are treated equally,” Belin says. “But in this context, I think there’s an argument that variance is more fair than bias. We know in advance of the census that the white population is going to be counted more

accurately than the African American and Hispanic populations. That’s bias. It means that going in, you know that cities such as Los Angeles are going to be losers relative to other communities.”

As to how the decision should be made over what adjustment formula to use — or whether to use one at all — Belin would prefer that it be left with the professionals at the Census Bureau. “It doesn’t go to the Congressional committees to decide when to launch the space shuttle; that decision is made by scientists,” he says. “On the census issue, I would like the decision also to be vested close to the science, rather than driven by partisan politics.”

Although many advocates for disenfranchised populations were unhappy with the Census Bureau’s recommendation this spring against using the adjusted counts for state redistricting, Belin, having worked with many of the decision-makers, is adamant that the decision was not a bow to pressure from the Bush Administration. “In 2000, the differential undercount between whites and minorities of roughly 2.5% was about half the level in previous censuses, and there were previously unseen inconsistencies between demographic analysis and coverage survey findings,” Belin notes. Given that adjustment still apparently yields gains in accuracy for large jurisdictions, Belin says he would not be surprised if the Census Bureau supports adjustment in a decision pending this fall regarding the mid-decade population estimates used in many funding formulas.

Despite his misgivings about the way that politics has dominated recent discussions of the census to the exclusion of the underlying science, Belin — who admits to being something of a political junkie himself — doesn’t deny that politics will always surround the census. “The Constitution vests in Congress the power to ‘direct’ the census,” he notes. Belin is grateful to be contributing to the debate. “My interest in statistics sprang from a broader interest in the kinds of questions statistics can address,” he says. “Being in a field that bears on important issues of self-governance, not to mention the crucial issues of health and well-being we confront in the School of Public Health, has been wonderfully fulfilling.”

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