

ASA Statement on P -Values: Two Consequences We Can Hope For

George COBB

First off, I applaud those who put together the final version of the ASA statement, and applaud also those on the Board who approved it. By way of salute, and to highlight the challenges they faced, I pose a variant of the Birthday Problem: “How many statisticians does it take to ensure at least a 50% chance of a disagreement about p -values?” Regardless of whether your answer is 2 or 1, the question itself stands as testimony to what ASA has accomplished here in creating a consensus statement.

In addition to my salute, I offer two thoughts:

1. *What ASA has done here can set a good precedent for our organization.* Data science may be broader in scope than statistics, may be growing faster than statistics, and may be a shinier object in the eye of the media, but – to borrow a metaphor from John Kennedy: *If you purge data science of everything statistical you could bury the remains in a shoebox.*

The ASA statement on p -values is, in my opinion, an important example of how our profession can assert its relevance—to the analysis of data and to the progress of science. I would urge the Board to set aside time at least once every year to consider

the potential value of similar statements. The key questions of which issues to discuss, and whether to pursue them, should be up to the Board, but two possibilities are (a) the evolving role of statistics in data science, and (b) scientific applications of Bayesian methods.

2. *What ASA has done here should spur a reshaping of the way we teach—both p -values in particular, and statistics generally.* The teaching of statistics is still in metamorphosis, no longer cocooned in its silken heritage of mathematics, but still drying its wings before taking full flight. Our introductory curriculum remains too much blinkered by its lingering obeisance to formal classical inference via hypothesis tests and confidence intervals. (Even the newer, simulation-based approaches, which I am both proud and guilty of having abetted, pay too much attention to probability-based inference.) As in the past, what we preach lags behind what we practice. The ASA statement is a useful summary of the pros and cons of p -values in practice. We should adjust our preaching to match.

Online discussion of the ASA Statement on Statistical Significance and P -Values, *The American Statistician*, 70. George Cobb, Mount Holyoke College South Hadley, MA (Email: gcobb@metholyoke.edu).