

Frederick Mosteller and John W. Tukey: A Conversation

Moderated by Francis J. Anscombe

This article is adapted from an archival videotaping carried out on May 11, 1987, by the Department of Statistics at the University of Connecticut under the sponsorship of Pfizer Central Research of Groton, Connecticut, in cooperation with the Committee for Filming Distinguished Statisticians of the American Statistical Association. The Project Director was Harry O. Posten and the Associate Project Directors were Alan E. Gelfand, Timothy J. Killeen and Nitis Mukhopadhyay. The article was prepared in the editorial office of *Statistical Science*.

Anscombe: Good afternoon. My name is Frank Anscombe. I am Professor of Statistics at Yale University. I was formerly a member of the Committee for Filming Distinguished Statisticians of the American Statistical Association. This afternoon we have a discussion or conversation between two very famous figures of the statistical world—John Tukey and Frederick Mosteller. John Tukey is Senior Research Statistician and Donner Professor of Science Emeritus and Professor of Statistics Emeritus at Princeton University. He was also, until his recent retirement, Associate Executive Director of Research at the AT&T Bell Telephone Laboratories. Frederick Mosteller is Chairman of the Harvard Department of Health Policy and Management. He is Roger I. Lee Professor of Mathematical Statistics in the Harvard School of Public Health, and Professor of Mathematical Statistics in the Harvard Department of Statistics and in the Harvard Department of Psychology. He is a member of the faculty of the John F. Kennedy School of Government and of the Medical School of Harvard University.

John Tukey and Frederick Mosteller have known each other for a long time, since, I believe, 1939. They have collaborated in a number of major research projects and also over the years have had numerous informal contacts and discussions. We are now going to hear from them reminiscences and reflections on developments in statistics during their long association. We will hear of their early days at Princeton, of their collaborative studies and of their attitudes on statistics and the current state of statistical science. Let's begin with the early days at Princeton. John, you were there a little before Fred. Would you care to begin?

Tukey: Thank you. Well, I came to Princeton as a chemist in 1937. I took prelims in math at the end of that year and a Ph.D. in topology a year later. I

didn't know as much about the state of statistics in the mathematics department then as I learned later. It was a difficult time. If it hadn't been for Luther Pfahler Eisenhart, I don't think there would have been any statistics in Princeton. And I'm sure that Sam Wilks would have done his important work somewhere else. In May of '41 I went over to war work and for most of the war, except when they were away, I spent a lot of time with Charlie and Agnes Winsor, with Charlie both day and night and at meals. I learned a lot from real data but I think I learned even more from Winsor. So I came out of the war a statistician, not a topologist. A change I've never regretted.

Mosteller: I was sent to Princeton as a graduate student by my own mentor, Edwin G. Olds. And I was astonished when I got to Princeton and met Wilks because he looked so much younger than I did. Of course you see me now, but then I looked very young and he looked younger yet. I could hardly believe that he was going to be my teacher. Also, he was a very different man from Edwin Olds. When Edwin Olds wanted you to do something you didn't have any misunderstanding about that job. He just told you. When Wilks wanted you to do something, it was hard to catch it. You had to be alert for it. He would hint around, "It would be nice if somebody did something of a certain kind." You had to grasp that he meant you. Coming from Olds it was a little hard for me to make it out sometimes. Wilks was very busy. He was in Educational Testing Service work, sample survey work, working for the Navy, working for the National Research Council and a member of the Social Science Research Council—a very busy man. And although tea was a sacrosanct institution at Fine Hall when I was there, Wilks almost never appeared except to make an appointment with somebody or to settle something, some kind of business. He almost never