

A Conversation with David Blackwell

Morris H. DeGroot

David Blackwell was born on April 24, 1919, in Centralia, Illinois. He entered the University of Illinois in 1935, and received his A.B. in 1938, his A.M. in 1939, and his Ph.D. in 1941, all in mathematics. He was a member of the faculty at Howard University from 1944 to 1954, and has been a Professor of Statistics at the University of California, Berkeley, since that time. He was President of the Institute of Mathematical Statistics in 1955. He has also been Vice President of the American Statistical Association, the International Statistical Institute, and the American Mathematical Society, and President of the Bernoulli Society. He is an Honorary Fellow of the Royal Statistical Society and was awarded the von Neumann Theory Prize by the Operations Research Society of America and the Institute of Management Sciences in 1979. He has received honorary degrees from the University of Illinois, Michigan State University, Southern Illinois University, and Carnegie-Mellon University.

The following conversation took place in his office at Berkeley one morning in October 1984.

"I EXPECTED TO BE AN ELEMENTARY SCHOOL TEACHER"

DeGroot: How did you originally get interested in statistics and probability?

Blackwell: I think I have been interested in the concept of probability ever since I was an undergraduate at Illinois, although there wasn't very much probability or statistics around. Doob was there but he didn't teach probability. All the probability and statistics were taught by a very nice old gentleman named Crathorne. You probably never heard of him. But he was a very good friend of Henry Rietz and, in fact, they collaborated on a college algebra book. I think I took all the courses that Crathorne taught: two undergraduate courses and one first-year graduate course. Anyway, I have been interested in the subject for a long time, but after I got my Ph.D. I didn't expect to get professionally interested in statistics.

DeGroot: But did you always intend to go on to graduate school?

Blackwell: No. When I started out in college I expected to be an elementary school teacher. But somehow I kept postponing taking those education courses. [Laughs] So I ended up getting a master's degree and then I got a fellowship to continue my work there at Illinois.

DeGroot: So your graduate work wasn't particularly in the area of statistics or probability?

Blackwell: No, except of course that I wrote my thesis under Doob in probability.

DeGroot: What was the subject of your thesis?

Blackwell: Markov chains. There wasn't very much original in it. There was one beautiful idea, which was Doob's idea and which he gave to me. The thesis was never published as such.

DeGroot: But your first couple of papers pertained to Markov chains.

Blackwell: The first couple of papers came out of my thesis, that's right.

DeGroot: So after you got your degree . . .

Blackwell: After I got my degree, I sort of expected to work in probability, real variables, measure theory, and such things.

DeGroot: And you *have* done a good deal of that.

Blackwell: Yes, a fair amount. But it was Abe Girshick who got me interested in statistics.

DeGroot: In Washington?

Blackwell: Yes. I was teaching at Howard and the mathematics environment was not really very stimulating, so I had to look around beyond the university just for whatever was going on in Washington that was interesting mathematically.

DeGroot: Not just statistically, but mathematically?

Blackwell: I was just looking for anything interesting in mathematics that was going on in Washington.

DeGroot: About what year would this be?

Blackwell: I went to Howard in 1944. So this would have been during the year 1944-1945.

DeGroot: Girshick was at the Department of Agriculture?

Blackwell: That's right. And I heard him give a lecture sponsored by the Washington Chapter of the American Statistical Association. That's a pretty lively chapter. I first met George Dantzig when he gave a lecture there around that same time. His lecture had nothing to do with linear programming, by the way. In fact, I first became acquainted with the idea of a randomized test by hearing Dantzig talk about it. I think that he was the guy who invented a test function, instead of having just a rejection region that is a subset of the sample space. At one of those meetings Abe Girshick spoke on sequential analysis. Among other things, he mentioned Wald's equation.

DeGroot: That's the equation that the expecta-