Some Statisticians I knew and some I didn't

Richard Lockhart
Simon Fraser University
Berkeley, 1979

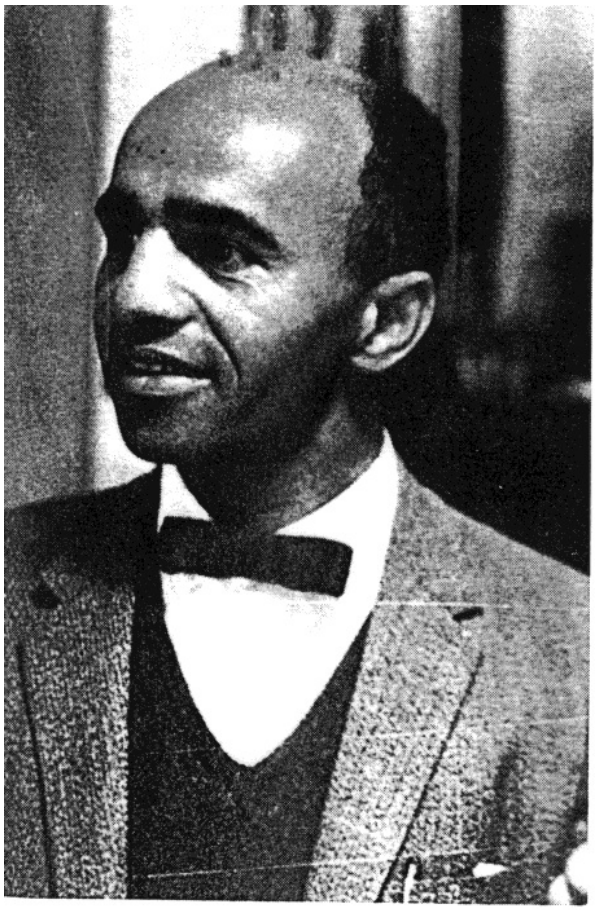
Outline

Blackwell	Neyman	Scott
Fisher	Le Cam	Berkson
Pearson	Pearson	Bartlett
Diaconis	David	Galton
Freedman	Brillinger	

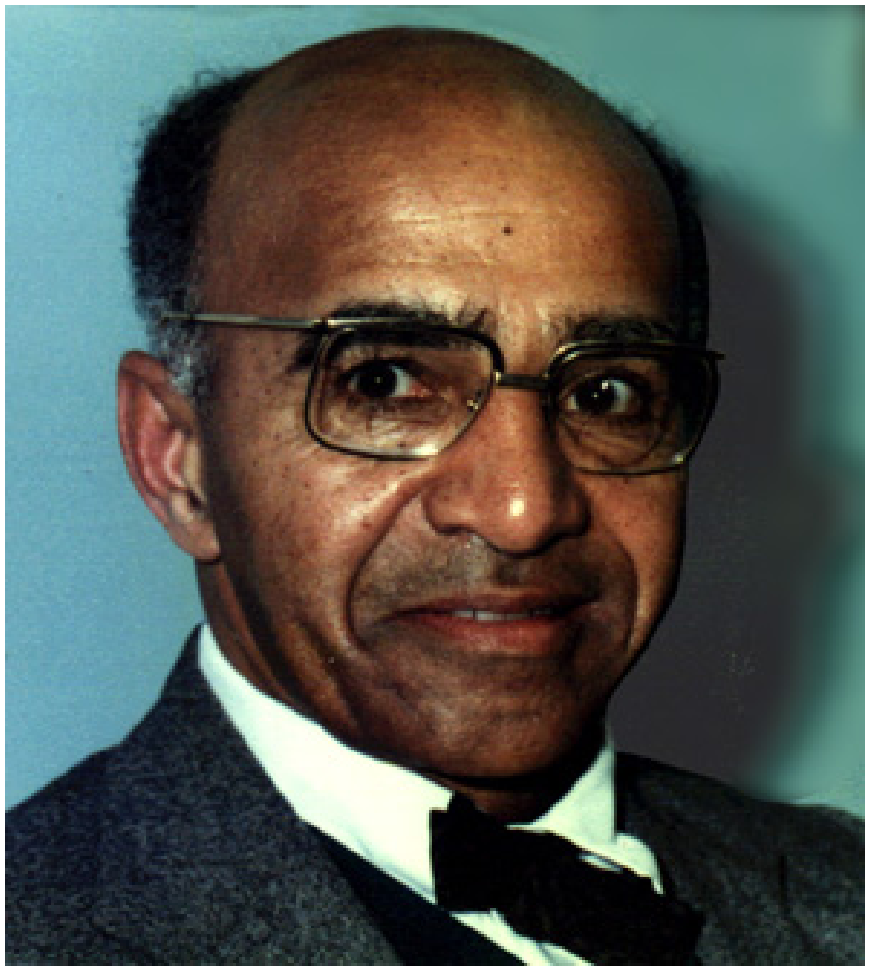
Some memories, some history, some fiction.

No-one knows which is which.

I was a student of David Harold Blackwell



David Blackwell



Some points about David

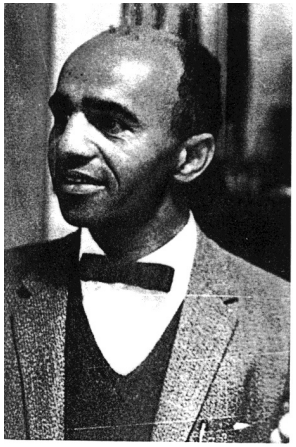
- First black member of National Academy of Sciences (1965); second was Wilson elected 1991. Two more in 2003!
- First black President of ASA.
- First black VP of American Mathematics Society.
- Also only such as of 2005. Web perils.
- "Basically, I'm not interested in doing research and I never have been ... I'm interested in understanding, which is quite a different thing."

More

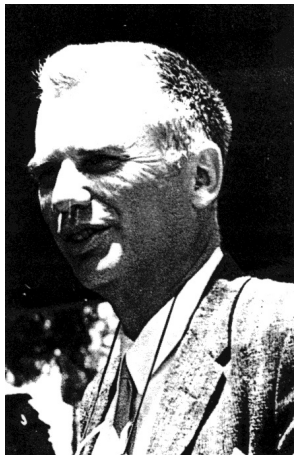
- Had 64 PhD students.
- That's a lot.
- I was number 62.
- Weekly half hour meetings for about a year and a half.
- Children, telephone.

Mathematical Genealogy

Blackwell ⇐ Doob ⇐ Walsh ⇐ Mathematics Genealogy Project



David Blackwell



http://genealogy.math.ndsu.nodak.edu

Higher up the "tree"

Bôcher, Klein, Birkhoff, Moore, Plücker, Gerling, Gauss, Pfaff, Kästner, Hausen, Wichmannsh, Mencke, Dirichlet, Ohm, Poisson, Fourier, Lagrange, Euler, Bernoulli, Bernoulli, Leibniz, Wiegel

Isn't that amazing? NO

Of the 106,705 records Leibniz is above 42378 and Gauss above 36534.

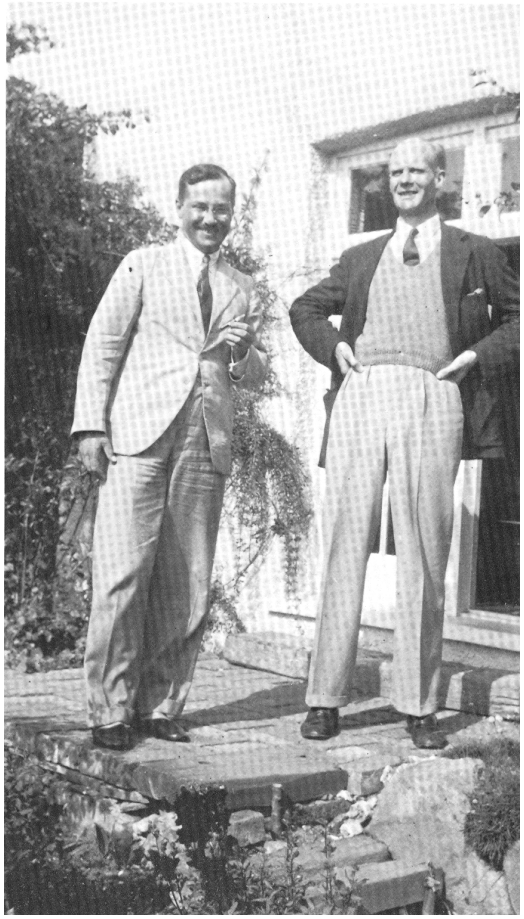
Blackwell hired at Berkeley in 1954 (ish).

Berkeley department founded 1954

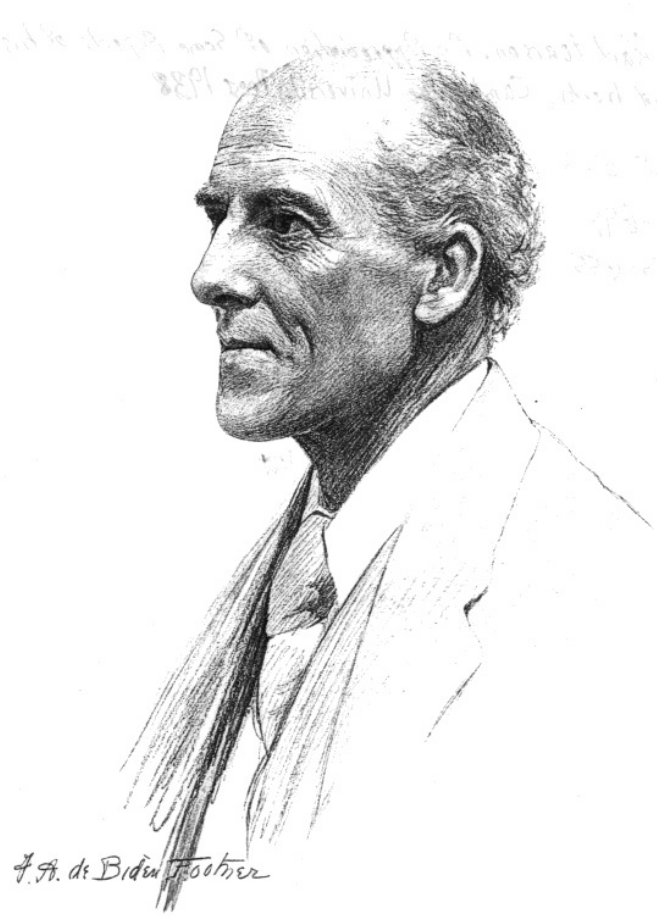
Jerzy Neyman

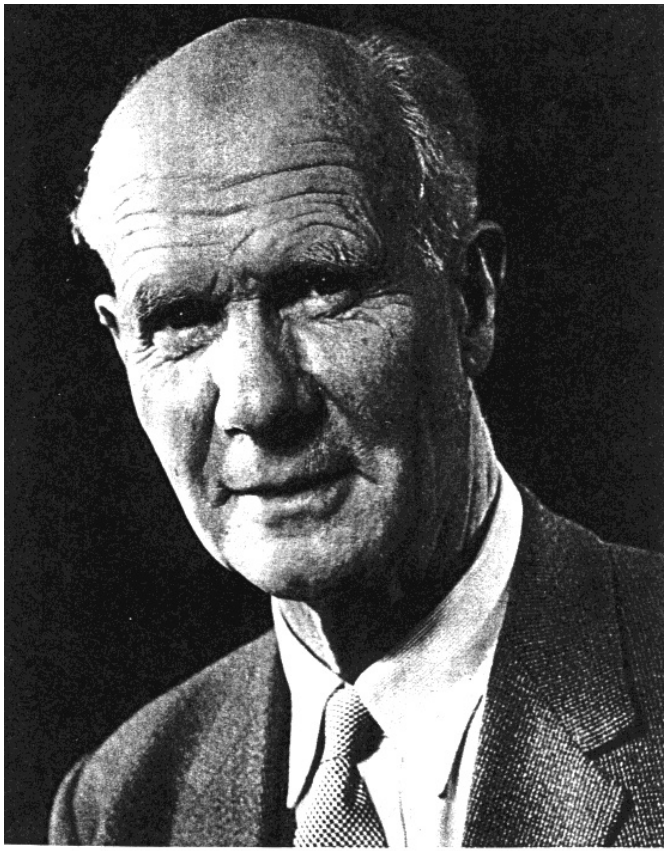
- Neyman and Pearson developed their ideas at University College London.
- Neyman came to London in 1925 to work with Karl Pearson.
- Instead worked with Egon Pearson.

Neyman Pearson Statistics



The Pearsons





EGON SHARPE PEARSON

Karl founded *Biometrika*

BIOMETRIKA

A JOURNAL FOR THE STATISTICAL STUDY OF
BIOLOGICAL PROBLEMS

EDITED
IN CONSULTATION WITH FRANCIS GALTON
BY
W. F. R. WELDON KARL PEARSON
AND
C. B. DAVENPORT

VOLUME I

OCTOBER 1901 TO AUGUST 1902

CAMBRIDGE
AT THE UNIVERSITY PRESS
LONDON: C. J. CLAY AND SONS, AVE MARIA LANE
AND H. K. LEWIS, GOWER STREET
NEW YORK: THE MACMILLAN COMPANY
LEIPSIC: BROCKHAUS
BOMBAY AND CALCUTTA: MACMILLAN AND CO., LIMITED

Early topics remarkable

CONTENTS

Memoirs.

To notice

- Pearson curves
- Study of correlations in bone lengths in hands of 551 females.
- Identify criminals based on anthropometry.
- Craniology.

From *Biometrika* Volume 1

(1) The object of this memoir is threefold:

(i) To test to what extent the criminal classes diverge in physical characters from other classes of the community.

(ii) To consider how far the shorter methods recently proposed by Professor Karl Pearson for finding the variability and correlation of characters in the case of normal frequency may be applied to some of the chief anthropometric measurements now customarily made, and

(iii) To determine what is the best manner in which these measurements can be applied to the identification of criminals.

Vigorous debate

"Vigorous" and "Vicious" are not so different.

Last major player of period: Sir Ronald Aylmer Fisher.

Only one paper in *Biometrika*: distribution of Pearson's r.

Long battle with Karl Pearson. (Mathematics becomes personal.)

Fisher battled others regularly.

Eugenics: Fisher edited *Annals of Human Eugenics*.

Annals of Eugenics / Annals of Human Genetics

"A journal for the Scientific Study of Racial Problems"

Founded 1925. First Editor Karl Pearson.

Published by "Francis Galton Lab for National Eugenics"

Galton was half cousin of Charles Darwin.

Karl Pearson died April 27, 1936.

Fisher became Editor.

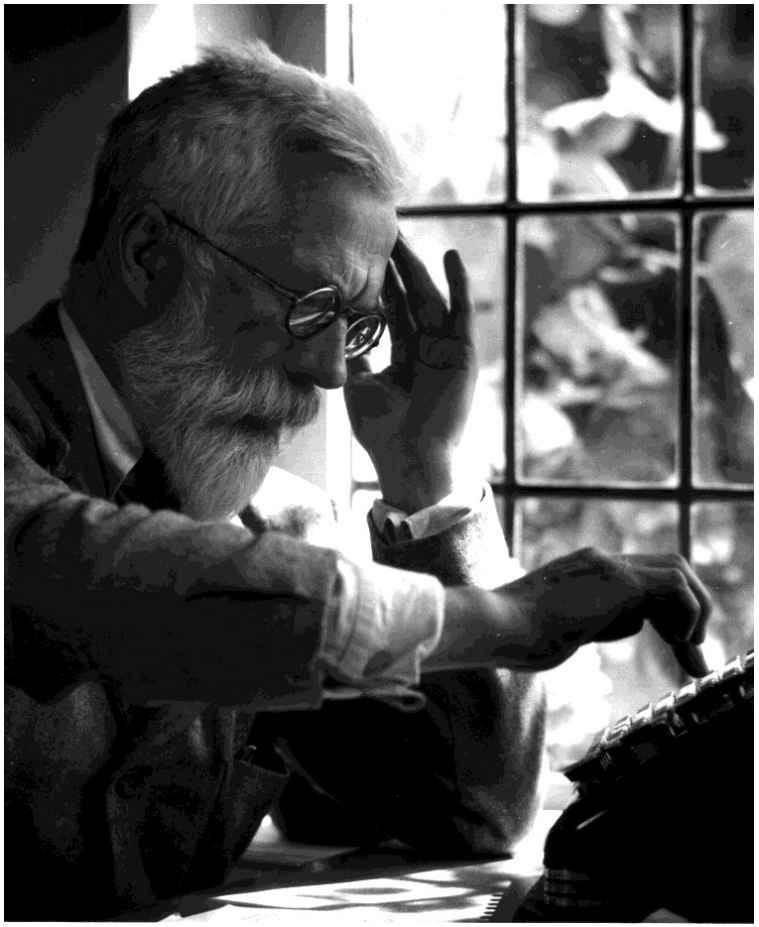
Fisher on Karl Pearson

KP hated being wrong.

He was wrong about degrees of freedom in chi-squared and Fisher said so.

Fisher (*Annals of Eugenics*, 1937): "His example on this point is valuable; whereas he was a clumsy mathematician. Had it not been for his arrogant temper, his taste for numerical example might well have saved him from serious theoretical mistakes."

Fisher and Neyman



R.A. Fisher, P.C. Mahalanobis, and Jerzy Neyman

Neyman, Pearson Senior, Fisher

Karl Pearson: "That may be true in Poland, Mr Neyman, but it is not true here!" (On the difference between 0 correlation and independence)

Neyman (1938,*Biometrika*) on Fisher, 1937: "Readers of statistical journals can hardly fail to have noticed what appears to be a regular campaign carried on by Prof. R. A. Fisher to discredit the work of the late Karl Pearson. Owing to the tone and form of these depreciations, one feels reluctant to reply, but it seems to be useful to point out just one instance illustrating the methods used by Prof. Fisher."

A handful of quotations

Fisher (*JASA*, 1943): "It is not my purpose to make Dr. Berkson seem ridiculous, nor, of course, to prevent him from providing innocent amusement. Had he looked up Hersh's original paper he would have been spared a blunder, . . ."

Berkson (*Biometrics*, 1954): "I consented to comment on the remarks of Sir Ronald Fisher only with considerable reluctance. The passages of his article that have to do with my work are so far out of the tjounds of reasonableness or relcvalley that on first reading them I could only believe that he had heen misinformed regarding my statement's . . ."

On Bartlett and Neyman

Fisher (*Biometrics*,1954): " It is a great pity that Cochran in this paper does not clearly point out that such adjustments have no useful function, at least finally, if it is intended to perform a correct analysis. The subsequent papers (5, 6) by Bartlett (1947) and Anscombe (1948)) show no such consciousness of the situation as they would have obtained had Cochran expressed himself more definitely."

"It is unfortunate that Bartlett did not restate his own views on this topic without making misleading allusions to mine."

Fisher (*JRSS*-B, 1957): "If Professor Neyman were in the habit of learning from others he might profit from ...

Reviews of Fisher's books

Neyman (1951) "In particular, three major concepts were introduced by Fisher and consistently propagandized by him in a number of publications. These are mathematical likelihood as a measure of the confidence in a hypothesis, sufficient statistics, and fiducial probability. Unfortunately, in conceptual mathematical statistics Fisher was much less successful than in manipulatory, and of the three above concepts only one, that of a sufficient statistic, continues to be of substantial interest. The other two proved to be either futile or self-contradictory and have been more or less generally abandoned."

And from Pearson

"Most reader's will regret the Inclusion of the Note on Paper (29,1937) which, if nothing more, shows in its last sentences, a profound ignorance of Karl Pearson's character and, indeed, of hls contemporaries."

and the footnote

"In view of the author's comment on the reason for the absence of the Metron papers, it should be made clear that permission to reproduce this paper from Biometrika would of course have been given had it been asked for. ED."

Aside on eugenics

A distasteful part of statistical heritage.

Definitely fashionable at the time.

Preface: "...the day will inevitably come when every University of standing will have its Professor and Laboratory of Eugenics."

Preface calls for "Jehad"!

Neyman picture

Neyman when I knew him

Neyman seminar; Betty at the back of the room

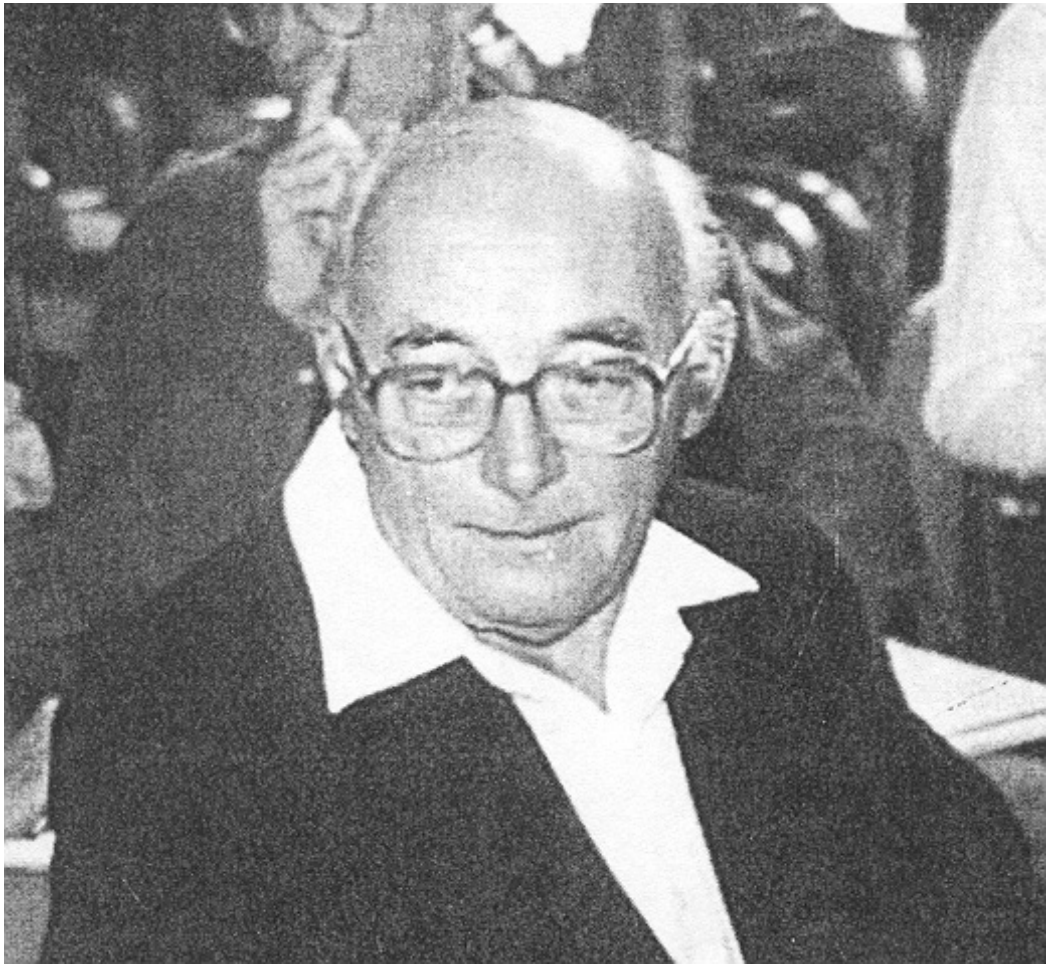
Neyman Seminar Features

- Every Wednesday
- "Speak up, Jerry"; "I can't hear you, Betty."
- Research funding devoted to RA who bought cakes (3).
- Neyman knew numbers.

After the Talk

- Off to faculty club.
- Three toasts
- “The speaker”.
- “The international intellectual community”.
- ”To all the ladies present and some of those absent”.

Seminar taken over by Lucien Le Cam

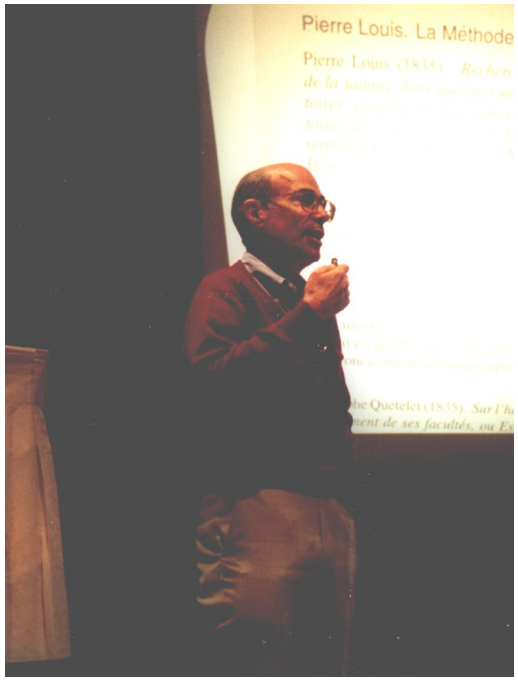


The Coffee Room; an important place to learn

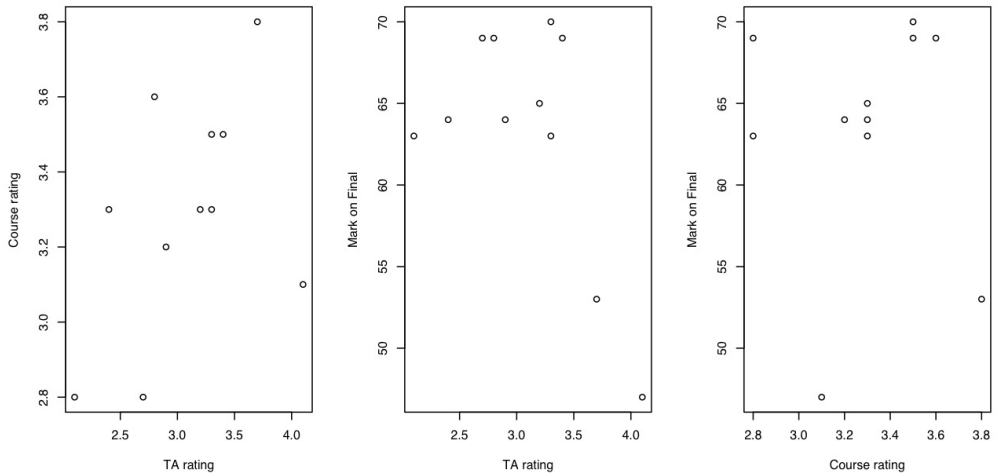
- Regulars: Neyman, Scott, Doksum, Le Cam, former student of Einstein.
- Saturday afternoons: Betty brought cake.
- Deserved by anyone working on a Saturday.
- We only lived a 10 minute walk from the cake.

The rest of my PhD committee

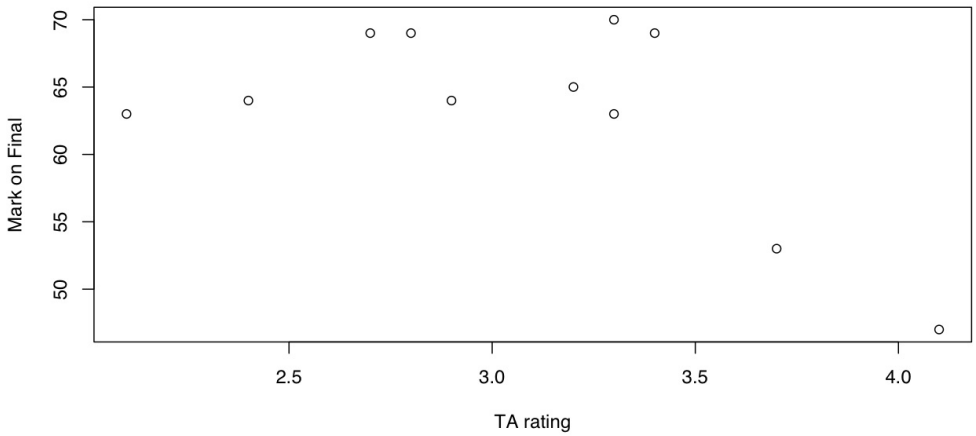
David Freedman, John W Addisson III



Ecological Correlation



Middle one Blown Up



Other Berkeleyans

Brillinger, Beran, Freedman.

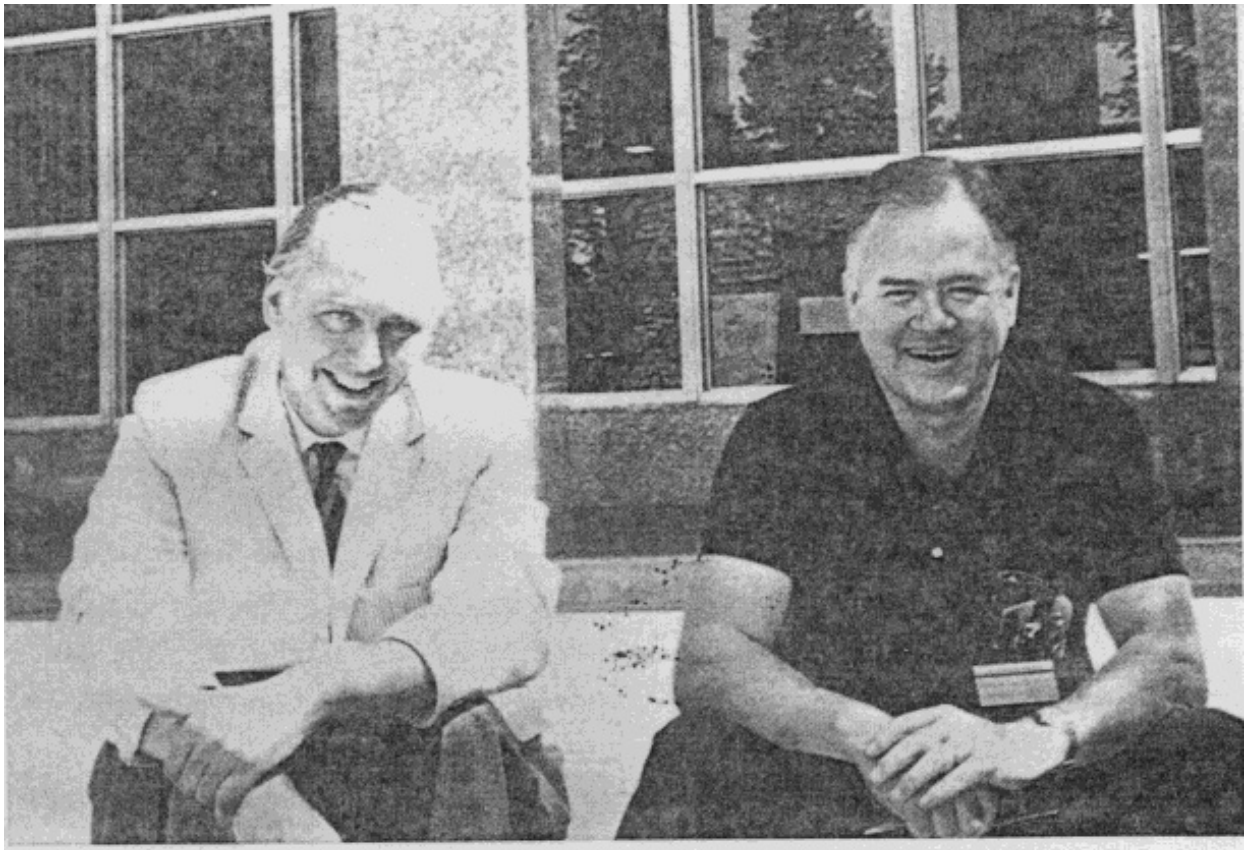
Le Cam, Loève, Fix, David, Bickel, Doksum, Scheffé

Brillinger's genealogy joins Blackwell's.

Brillinger was a student of John Tukey.

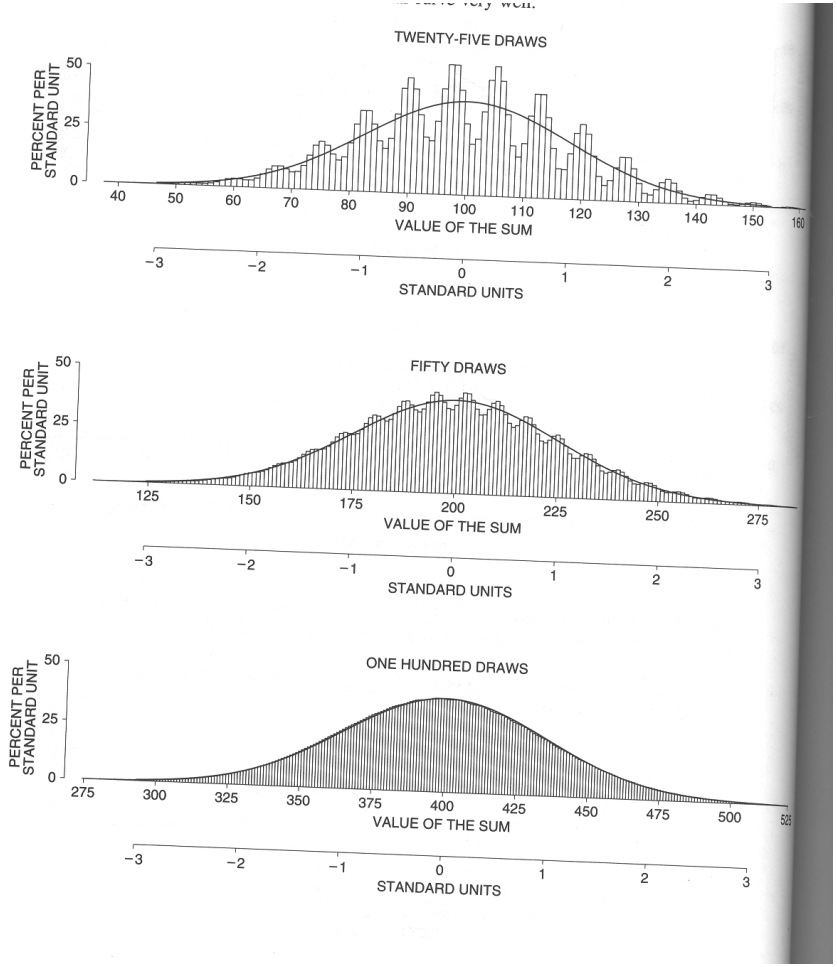
Bit, byte, fast fourier transform.

Ted Anderson and John Tukey



T. W. Anderson and J. W. Tukey

Freedman wrote a text



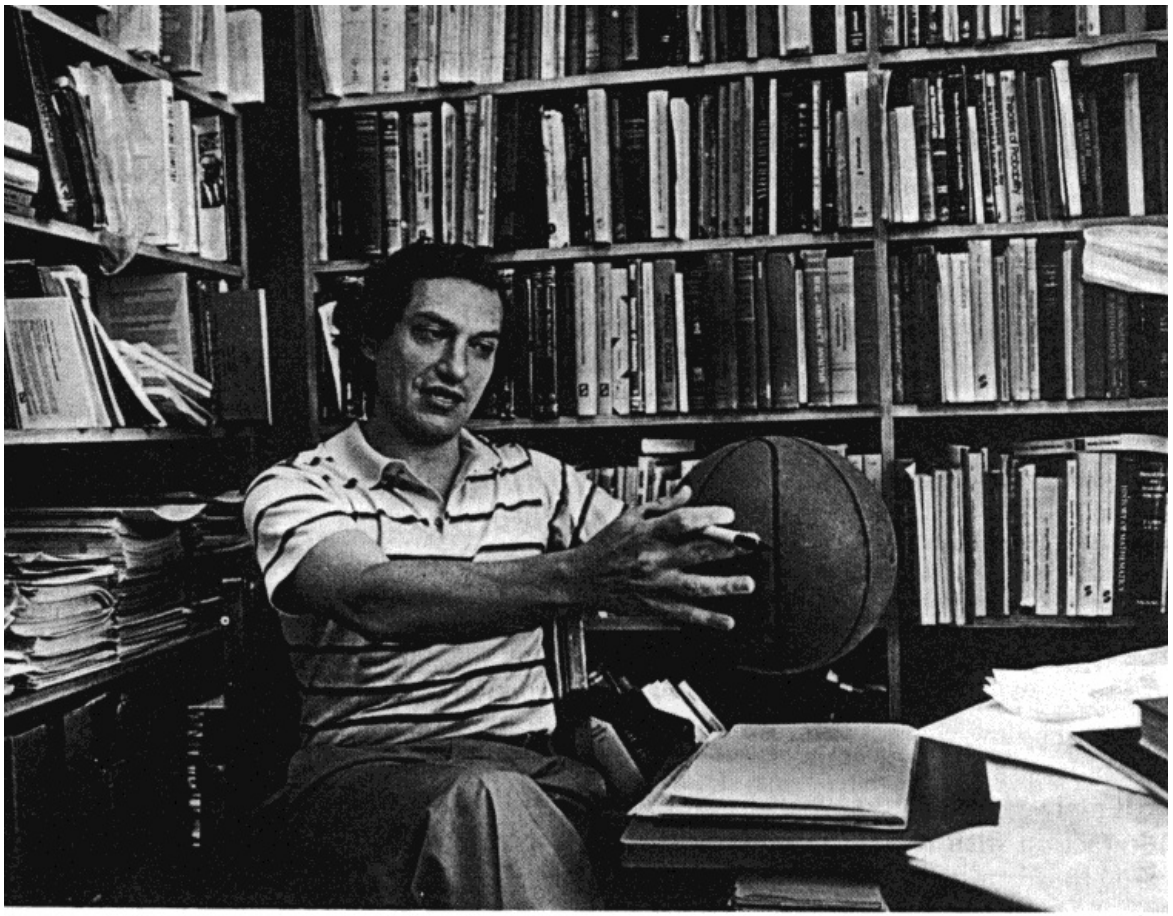
Freedman worked with Persi Diaconis

I drew histograms.

Freedman worked with Diaconis on mathematics of histograms.

Previous slide illustrates *local* CLT.

Persi Diaconis



Persi Diaconis.

About Persi

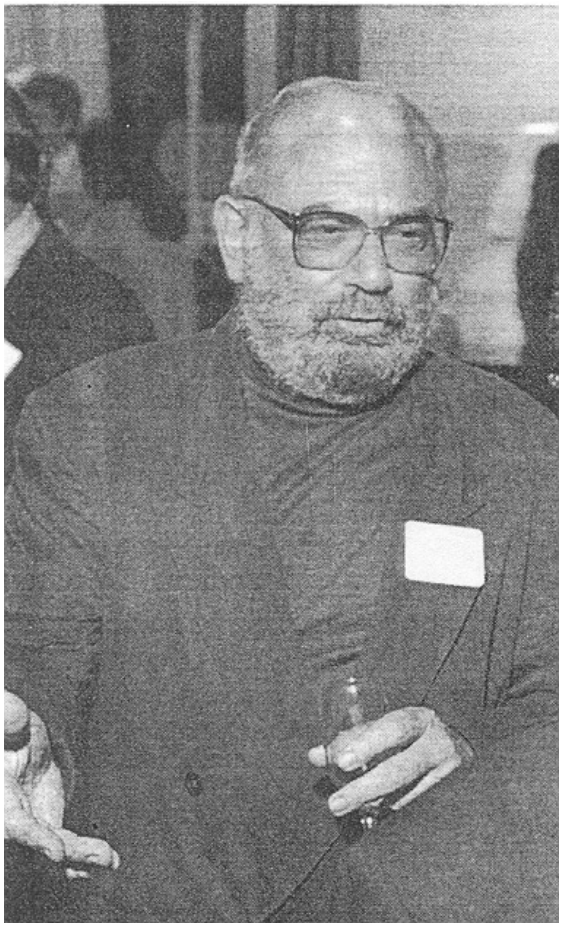
Left home at 14 to travel with magician Dai Vernon.

http://themagiccafe.com/

http://geniimagazine.com/

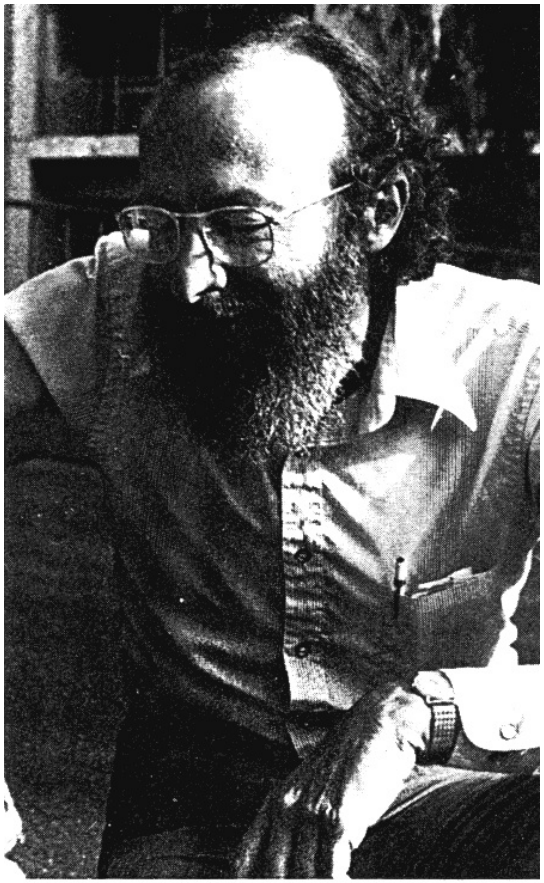
Invented “linking finger rings”

Leo Breiman and Florence Nightingale David



Scheffé and Hodges

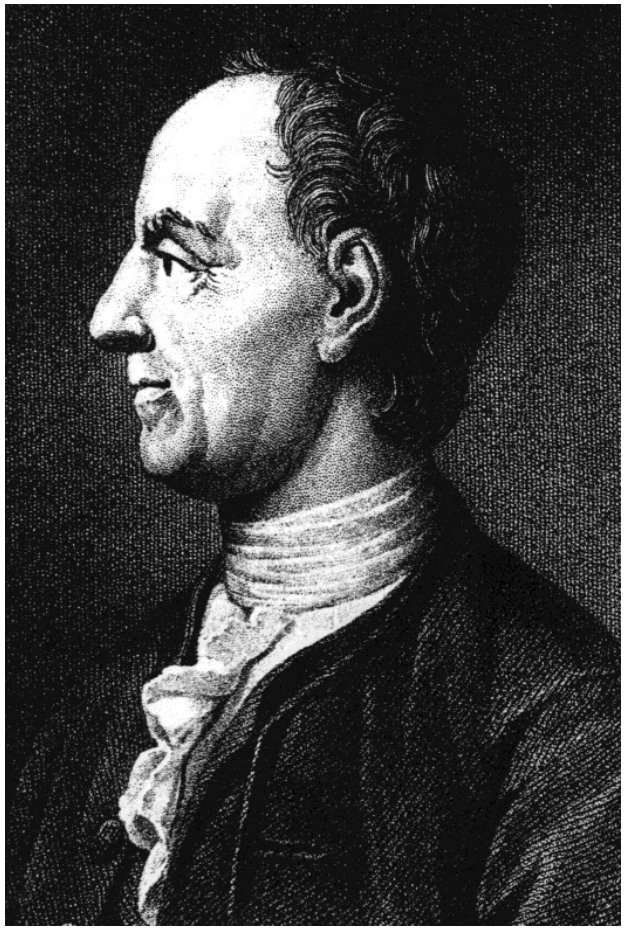
Kiefer and Lehmann



Jack Kiefer

Charles Stein

Euler



Fermat

Neyman summary

"Too bad!"

"Life is complicated but not uninteresting"