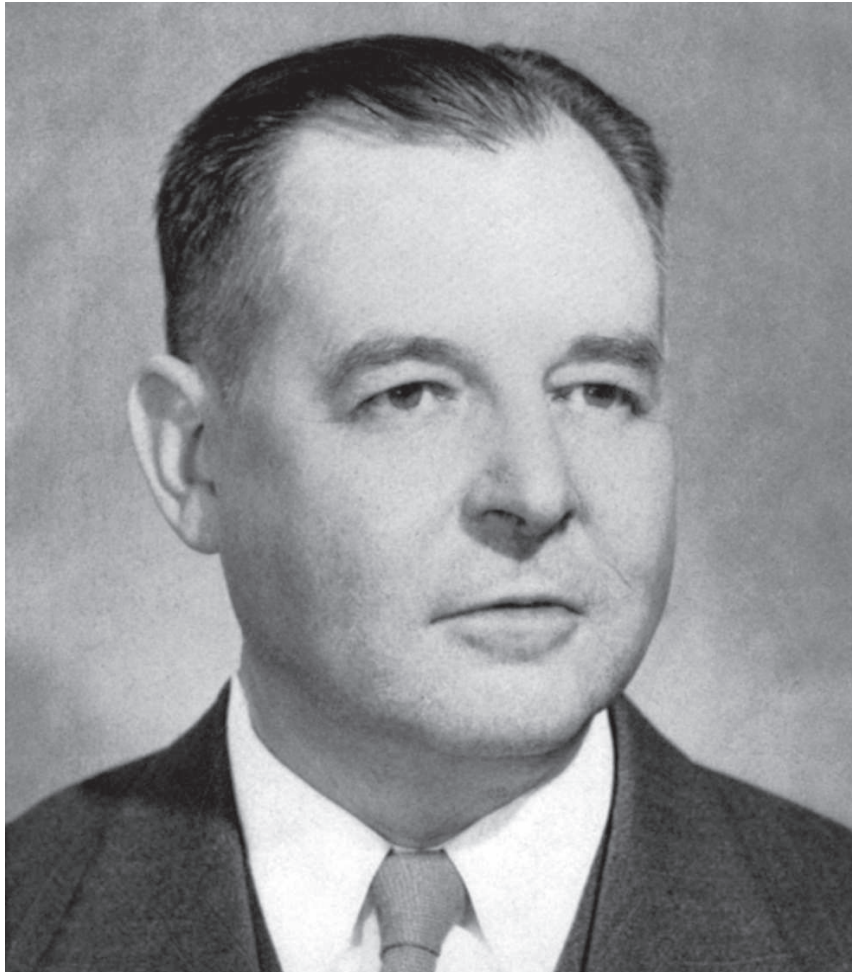


Harold Hotelling's Contributions to Statistics

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Slides: <http://www.duke.edu/~arg>

Harold Hotelling
1885 – 1973





References

- Personal life:

Darnell, Adrian C. (1988), “Harold Hotelling 1895–1973,”
Statistical Science 3, 57–62
<http://www.jstor.org>

- Scientific contributions:

Arrow, K. J. and E. L. Lehmann (2005), “Harold Hotelling
1895–1973,” *Biographical Memoirs* 87, The National Academies
Press, Washington, D.C.
<http://www.nap.edu/readingroom/books/biomems>

Biography-1

- Born, September 29, 1895, in Fluda, Minnesota.
- U.S. Army, 1917–1919
A kick by a mule named Dynamite broke his leg and prevented him from being sent to France with the rest of his division, which was annihilated.
- Married Floy Tracy, 1920 (deceased 1932)
two children
- Married Susanna Porter Edmundson, 1934 (deceased 1988)
five children

Biography–2

- Education:

B.A., Journalism, University of Washington, 1919.

Ph.D., Mathematics (topology), Princeton University, 1924.

Rothamstead Agricultural Research Station, 1929.

- Positions:

Research Associate, Food Research Institute, Stanford University, 1924–1927.

Associate Professor, Mathematics, Stanford University, 1927–1931.

Professor, Economics, Columbia University, 1931–1946.

Professor, Economics and Statistics, University of North Carolina, 1946–1966.

Significant Papers in Statistics

- Hotelling's T^2
Hotelling, H. (1931), "The Generalization of Students' Ratio," *The Annals of Mathematical Statistics* 2, 360–378.
- Principal Components
Hotelling, H. (1933), "Analysis of a Complex of Statistical Variables into Principal Components," *Journal of Educational Psychology* 24, 417–441, 498–520.
- Canonical Correlations
Hotelling, H. (1936), "Relations Between Two Sets of Variables," *Biometrika* 28, 321–377.
- Rank Correlation
Hotelling, H., and M. R. Pabst (1936), "Rank Correlation and Tests of Significance Involving No Assumptions of Normality," *The Annals of Mathematical Statistics* 9, 87–96.

Statistical Education

- Hotelling, H. (1940), “The Teaching of Statistics,” *The Annals of Mathematical Statistics* 11, 457–470.
- Hotelling, H. (1949), “The Place of Statistics in the University, *Proceedings of the 1945/46 Berkeley Symposium*
- “ ... the organization of the teaching of statistical methods should be centralized and should provide also for the joint functions of research and advice and service needed by others ... ”
- Founder, with Gertrude Cox, of the Statistical Institute of North Carolina, which enveloped the Department of Experimental Statistics at North Carolina State University and the Department of Mathematical Statistics at the University of North Carolina.