

Statistics, a Tool of Science?

For conference: Statistics in a Social Context
Department of Economics, Harvard University

Theodore M. Porter
Department of History, UCLA
10-11May 2019

Born as a "state science" and empirical science of society, statistics experienced its first identity crisis [or perhaps already its second] about 1850 when it seemed in danger of being reduced to an auxiliary science, a tool of other sciences. By 1930, however, its traditional task of taking the census and keeping state records on births, deaths, migration, health, economic production, trade, labor, crime, schooling, and so on was looking less and less like its own science and more like a valuable source of data for use by economists, and business corporations. A new mathematical of statistics now appeared most scientific. Mathematics provided one basis for this status, but the key scientific role of Fisherian statistics was to function as the lynchpin of scientific methods, here understood as framing and testing hypotheses. This kind of experiment, however, was structured to demonstrate that an effect was nonzero rather than to measure it, a grave shortcoming from the standpoint of science. Perhaps it was really a social technology for producing ostensibly neutral objectivity. In the current millennium, statistics is being redefined as Data Science for a world of Big Data, typically (but not always) with narrowly pragmatic purposes. Should we say that the scientific claims of statistics were always somewhat illusory? Or should we go further and ask what the roles of modern statistics tell us about the character of science?