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In This Issue

Probability is one of the most widely used scientific tools, and everyone uses expressions like *certain*, *usually*, *possible*, *rarely* and *never* to communicate probability. Fred Mosteller and Cleo Youtz's fascinating article reviews 20 studies from various sources in which quantitative levels are assessed for 52 qualitative probabilistic expressions. Numerical values are assigned to these words by individuals to represent their intended probabilities; there is no empirical follow-up here calibrating their intentions with reality. You may find the results surprising. *Certain* does not mean 100 percent. While some words, like *even-chance*, are quite precise, others, such as *possible*, vary dramatically among individuals. The phrase *beyond a reasonable doubt*, used in legal processes, goes unevaluated, but judging from the other results it may not represent an overwhelming probability. Almost all of the many discussants observe the importance of context in assigning probabilities to these words.

Alexander Mood, best known to younger statisticians as the original author of a widely used book coauthored with Frank Graybill, began his statistical career at Princeton in 1938 when Statistics was a very young field. At that time Princeton had Sam Wilks, Mood's advisor, and Mood interacted with many others who were there in various student, faculty and visiting roles, including John Tukey, Fred Mosteller and R. A. Fisher. World War II brought Mood into contact with many statisticians, and his career later took him to RAND and then to form his own research organization, General Analysis Corporation. Mood's reminiscences provide a most interesting view of the development of Statistics in the United States from the perspective of one whose main appointments usually were at the service of real applications, and not in academic settings.

The 1988 IMS Wald Memorial Lectures were given by Dennis Lindley. Lindley needs no introduction to statisticians as one of the most outspoken advocates and authorities of the Bayesian position. His article points out many Bayesian concerns, e.g., for coherence, for probability assessment, and it presents various examples illustrating the advantages of Bayesian reasoning. Basically, Lindley sees this theory as a calculus of conditional probability that permits assessment of probabilities for unknown quantities, given quantities that are known or observed. He includes decision modeling and utility to complete the theory and to dictate action.

Some information about the sample variance is contained in the sample mean, and Stein used this in 1964 to demonstrate the inadmissibility of the sample variance. Jon Maatta and George Casella review this result and the research it spawned by Brown, Brewster and Zidek, Cohen, Shorrock, Goutis and themselves for point and interval estimation. Their review shows that some improvement in variance estimation is possible from many perspectives.

The most important statistical contributions take place in applied cross-disciplinary settings, when researchers from a variety of intellectual fields team up to gain new knowledge. In 1985 the National Science Foundation funded a project by the Institute of Mathematical Statistics to assess the current status of cross-disciplinary statistical research. A panel consisting of twelve members, chaired by Ingram Olkin and Jerome Sacks, prepared the report presented here. The report reviews past successes and current problems in cross-disciplinary research and discusses the need in the statistical community for resources and for infrastructure to promote and to encourage the statistical component of cross-disciplinary research. The well being of Statistics as a discipline clearly is dependent on its success in cross-disciplinary research.

Stephen Stigler's 1988 Jerzy Neyman Memorial Lecture for the Institute of Mathematical Sciences appears here. He demonstrates that in the symmetric normal distribution setting of Stein, and in the corresponding Poisson setting of Clevenson and Zidek, shrinkage estimates can be derived and understood from the regression (Galtonian) perspective.