

FOREWORD

by Barry L. Ford, Survey Sampling Branch

Probability! Variance! Estimator! These words strike fear into the hearts of people who have little mathematical training but wish to understand the statistical concepts of surveys. They view statistics as an alien world where people express themselves with formulas instead of sentences. They wonder, "Can I ever understand the ideas that govern statistics without involving myself in mathematical details?".

In truth, the statistical community has not made it easy for outsiders. It has devoted only a small effort towards informing the nontechnical reader. Also, mathematical jargon and poor communication skills have always plagued the world of mathematical statistics. Also, I am always surprised at the number of mathematical statisticians who can apply precise mathematical logic to derive complex formulas but can not explain in plain English the motivation, usefulness, and impact of their ideas. This deficiency is not only a matter of speaking and writing skills but also a matter of thinking about the philosophy and application of the statistical procedures they use.

I have always believed that the major ideas and underlying motivation for most statistical concepts could be expressed in an interesting, nontechnical way for the average "person-on-the-street." In March 1988, that belief was put to the test. I was named as editor for a series of statistical articles to appear in the monthly "Staff Letter." Mathematical statisticians in NASS were assigned to write two-page articles on a list of statistical topics important to surveys.

There were three factors that I looked for when editing these articles: 1) an effort to make the concepts understandable to someone who had never taken a statistics course, 2) no formulas, and 3) an entertaining approach. For the writers - technicians who had been taught through many years of college training to think in rigidly mathematical terms - this assignment was often torturous. However, two purposes were served: 1) to challenge the mathematical statisticians to communicate technical concepts at a nontechnical level and 2) to inform the general reader about statistical topics that are crucial to the work of NASS.

The reader will find varying degrees of success in the writing of the articles, but overall I think that the writers did a good job. Statistics is and always will be a branch of mathematics - thus, some of the topics were more difficult to tackle than others. However, I hope the reader will enjoy and learn from them all.

Editor's note 2008 (Dave Aune)

The following articles were originally written in 1989 to communicate key statistical concepts of NASS surveys to nontechnical readers. Authors were told to not lose sight of the target audience and to be creative in their presentation. In 2008, these articles were edited to replace dated references and examples. The authors listed are the original authors.