

Theory of Sampling and Sampling Practice, Third Edition

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Using this third edition, teach yourself everything there is to know about the Theory of Sampling and become an expert.

The first edition of this book (1988) was devised as an adequate but simplified condensation of Dr Pierre M. Gy's work, suitable as a two-volume manual for the teaching of a short-course. The first edition was a success and well-received by engineers around the world.

The second edition (1993) stayed consistent with this spirit; however, collaboration with practicing mathematicians, statisticians and research scientists helped me to prepare a much better, more complete version. It was an overwhelming success and became a classic around the world for more than 25 years. Here is the credo of the second edition:

“There are no such things as reliable feasibility studies, unbiased ore grade control, accurate environment assessments, effective process control, if you cannot identify and minimize the eight major sources of sampling variability and know them by name.”

The third edition could have been highly technical, treating Sampling and Statistical Process Control, but it would have missed its primary objective, which is to successfully explain why each of us, in the mining industry and other industries, at any given place of a process, is a customer of, and/or a supplier to, somebody else. Therefore, it is imperative for this third edition both to provide high-level theoretical background, but also pragmatic solutions to the many problems samplers are facing every day. Because of the author's background, the reader may complain about an over emphasis on the mining industry. However, TOS is universal and applies to many other industries as well, such as the food industry, the chemical industry, the oil and gas industry, the pharmaceutical industry and many more.

The third edition of this textbook could have been a highly philosophical guideline about the many subtleties of Total Quality Management, but it would again have missed its primary objective, which is to successfully explain why each of us, in all these industries, at any given place of a process, is the mean by which objectives

are met on target, within specifications and within acceptable cost.

Therefore, what is special about the third edition of this book has been to find an equilibrium between how far someone must go through the theoretical and technical aspects of a given task to better understand, predict, control and improve conditions leading at the end of the day to a successful job. The theoretical aspect of our problems is an essential means for penetration and greater insight. The technical aspect of our problems is a necessary implementing process. The pragmatic aspect of our problems is a necessary product of our creativity, and we are paid to be pragmatic without giving up too much on theoretical and technical necessities; this is how one becomes a successful professional. If we learn how to do this, we may never lose the scope of our story: every time we leave work, we shall feel happy and proud of making the job of somebody else easier, better and more effective.

This third edition of the textbook is also different because a special effort has been made to present sampling and laboratory

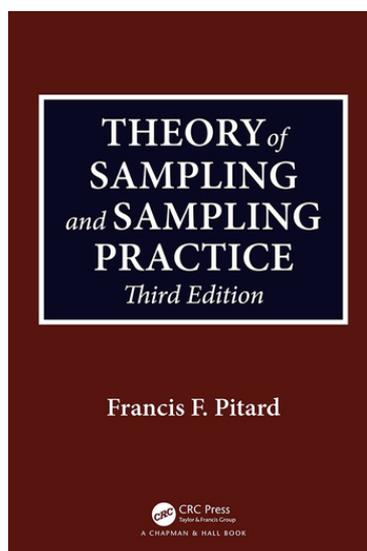
problems in their inescapable, economic context. The main reason for the Theory of Sampling (TOS) having been much neglected in the past is due to the failure to place it in its economical context. As a result, many important executives around the world saw the TOS as an academic achievement with no obvious practical value. To correct this unfortunate situation, this third edition is now a proper blend from several important worlds:

- 1) The Management Approach by W. Edwards Deming
- 2) The Sampling Theory of Dr. Pierre M. Gy
- 3) The undeniable touch from geostatistics with variography leading to chronostatistics
- 4) The extraordinary competence of a famous analytical chemist and sampling expert, C.O. Ingamells
- 5) The works of J. Visman
- 6) The modern philosophies of Statistical Process Control and Six Sigma

Blending these different worlds, especially the works of C.O. Ingamells and J. Visman who definitely deserve a special place in TOS, was a daring endeavour on my part. I hope the result will make sense to many of my clients.^a This edition of the book should help set priorities to optimise operations, eliminate costly and incorrect practices accumulated through the years by tradition, mistaken beliefs, shortcomings from naïve common sense and wrongdoings from practitioners and manufacturers with conflicts of interest.

The third edition of the book is, therefore, the basic, essential tool to make sure that due diligence in many modern applications is friendly enough when applied.

^aThe importance of the contribution of C.O. Ingamell's and J. Visman's seminal works makes it a mandatory addition to the TOS. These two historic contributors, and also admirers of Gy's work, unfortunately passed away before the WCSB forum was created. This is the deep reason behind chapters 14, 15 and 16 in the third edition of this book. Let's be very clear: the TOS would be incomplete without this valuable addition.



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