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Every four years during the past quarter century, people interested in Bayesian statistics have met in Spain to share the latest research and methods. Sponsored by the University of Valencia, these occasions have come to be known as the Valencia meetings. In addition to the usual communication of scientific knowledge, the meetings are renowned for their camaraderie and atmosphere (for a taste, please google on "Valencia Cabaret"). The Valencia meetings have rapidly grown in size as interest in using Bayesian methods has increased. The best papers from each meeting, after rigorous refereeing, have been published in book form. This is the seventh volume in the series.

This volume contains 23 invited and 31 contributed papers out of over 350 papers given either orally or as poster papers at the seventh Valencia meeting. Because the meeting covered the whole gamut of modern Bayesian analysis, the subject matter is quite varied; but the topics provide the reader with a snapshot view of where the cutting-edge research in the field of Bayesian statistics is at the moment.

The contributions include both theory and applications. Foundational issues such as priors, exchangeability, posterior consistency, and Bayesian nonparametrics are discussed, as are objective Bayesian methods. The latter is of

particular importance, as one of the complaints that has often made about Bayesian methods is that the priors are arbitrary, which is alleged to make the inferences nonobjective. In actual fact this complaint is not as telling as it appears, since standard statistical methods suffer from an equal degree of arbitrariness (for example, through the choice of estimators). The arbitrariness of standard methods is less obvious than Bayesian methods, which are required by their methodology to display and justify their assumptions. Nonetheless, it is important for Bayesians to develop methods for choosing "objective" priors that reflect a minimum amount of arbitrariness. Considerable progress has been made in this area in recent years.

Significant advances in computational techniques have been made over the past fifteen years. This has been driven by the development of simulation as a way to bypass integration over high-dimensional spaces, which is formally required by Bayesian methodology in order to produce numerical results. The main tool for simulation is the use of Markov chain Monte Carlo, which uses the product of prior distribution and likelihood directly in a way that avoids having to normalize the posterior distribution. Several papers address simulation methodology, of which the most interesting to this reviewer was the one by Rasmussen, who proposes a method of handling sampling of highly correlated variables via a clever use of Hamiltonian systems. Highly correlated variables are a problem because they can greatly slow down the Markov chain, and the Rasmussen paper presents a practical way around this problem. Several papers propose approximate methods that can apply in cases that are otherwise intractable, such as organizing large text and document databases for retrieval.

Perhaps of great interest to the readers of this journal, much recent research has been devoted to Bayesian methods in multiple testing situations. This trend has been driven by the development of genetic microarray technology, which allows a huge number of data points involving the activity or inactivity of many different genes to be obtained in a single experiment. The difficulty, of course, is that both Type I and Type II errors can easily be generated in comparably huge numbers. It turns out that by reformulating the question in terms of Bayesian decision theory, the performance can be significantly improved. The paper by Genovese and Wasserman compares Bayesian and frequentist multiple testing. The paper by Wakefield, Zhou and Self addresses multiple testing in situations that may be dynamically changing as a result of time, temperature changes, or other variable factors.

Several of the papers address various aspects of regression analysis, which is of course a statistical workhorse in many applications. Another area of interest represented by several papers is the hierarchical Bayes idea, in which a prior may be a function of parameters that are not contained in the likelihood, which themselves require priors (and which in turn may themselves contain new parameters, which naturally require their own priors). The hierarchal Bayes idea provides a very rich class of models so that one may model the actual problem at hand more closely.

A number of application papers are also presented, largely in biomedical, biological and financial contexts.

Since this volume contains a large number of research papers on many topics, no one is likely to find every paper in it useful or interesting in her own research. On the other hand, those who want to know what is going on at the frontiers of Bayesian methodology, theory and application would benefit greatly by dipping into this book, reading the abstracts, and then reading more closely those papers that pique their curiosity.

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Lange and Nietzsche by George J. Stack. Walter de Gruyter, Inc., 1983. 341 pp. $143.10 (hardcover). ISBN 3110088665.

According to Stack, when Nietzsche first came across Lange's *Geschichte des Materialismus*, he referred to it as a "treasure-house" of ideas. Much the same could be said about Stack's book itself. It is very rich and dense in ideas and well repays a second reading. We state at the outset that neither of us are Nietzsche scholars, and, hence, we will not comment on Stack's scholarship (which seems excellent), nor on the major argument of the book, that Nietzsche was strongly influenced by Lange (which seems persuasive). Instead, we shall focus on Nietzsche's efforts, as articulated by Stack, to comprehend the nature of science in the light of neo-Kantian epistemology.

Nietzsche thought very deeply about science and about philosophical issues that pertain to science. In some ways, Nietzsche's views on science are deeper than the thinking of many 20th Century philosophers of science, the latter of whom are still very much under the influence of pre-Kantian Philosophies, such as Humean Empiricism, logical positivism, and its offspring, analytic philosophy, which dominates American and British philosophy today. The hallmark of pre-Kantian Philosophy, whether it occurs chronologically earlier or later than Kant, is that it treats sense perception as putting us in direct and immediate touch with an objective, external reality. This is the unreflective view we all hold in the course of everyday living. For we all believe that the objects we see around us are real, that they exist more or less as we see them, and that neither our sensory apparatus nor our minds structure or contribute to the content of what we see. Our eyes are our windows to the world, and our eyelids function as shutters. Just as opening the shutters gives us direct and immediate access to