

In Chapters 2 and 3, the authors provide a useful introduction to the basic principles of Bayesian inference and computation, assuming readers have a background in basic probability and statistics at the level of Casella and Berger (2002). In Chapter 4, they describe models for within-unit and across-unit analysis using discrete data. They review the latent variable approach, including multinomial probit or multivariate probit models, and introduce demand models that can be used for more formal economic questions, such as welfare analysis and policy simulation. In Chapter 5, they provide a comprehensive treatment of hierarchical models, which are designed to measure differences between units using a particular prior structure. They show several forms of the hierarchical model as well as the algorithm MCMC to conduct inference. They illustrate these methods in the context of a panel of household purchase data and a base or unit-level multinomial logit model. They also discuss the influence of the findings on marketing practice.

Chapter 6 concerns the problem of model selection and decision theory. The authors consider the use of the decision-based metric in valuing information sources and show the importance of loss functions in marketing applications. In Chapter 7, they discuss the problem of Bayesian inference models in which both the response variable, for example, sales, and some of the marketing mix variables are jointly determined given a set of exogenous demand or cost shifters.

This book does not contain information about Bayesian networks, see Baesens et al. (2002), nor does it cover marketing applications or nonparametric Bayesian; Dey and Rao (2005) provide a general approach. However, Greg Allenby told me in June 2006 that they intended to cover the latter topic in future editions. This flaw is not serious, and I highly recommend the book. While it is unlikely that we will ever find the perfect book to fully explain Bayesian statistics in marketing, Rossi, Allenby, and McCulloch have provided an excellent text and reference book for both graduate students and professors in many fields and, in particular, in management science.

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TESFATSION, L., K. L. JUDD, EDS. 2006. *Handbook of Computational Economics, Vol. 2: Agent-Based Computational Economics*. North-Holland, Amsterdam, The Netherlands. 826 pp. \$135.00.

Agent-based methods are becoming part of mainstream management science and economics, partly because of computing advances that facilitate modeling complex systems. The first volume of North-Holland's *Handbook of Computational Economics* is a survey of the literature on solving such standard economic issues as general equilibrium and rational expectations models. The second volume (and the one we review here) is dedicated to agent-based simulations (ABSs) and is intended to serve two purposes: to provide a comprehensive and up-to-date overview of agent-based modeling research, and to support researchers in teaching or developing ABS skills. The book succeeds on both accounts. It is structured in three parts.

Part 1 starts with two chapters (Chapters 16 and 17 of this second volume of two) written by the editors, Leigh Tesfatsion and Kenneth Judd. They position ABS as a method that contrasts with and supports traditional economics. They point out the weaknesses of standard models and describe how simulations can complement them. The editors' inclinations—one is decidedly an agent-based modeller, while the other has wider computational economics interests—provide the context for a balanced view of ABS.

Chapters 18 to 31 are written by active researchers in the field; they review the literature on the areas in which ABSs are used. Chapter 18 concerns representation of agent behavior, including reinforcement, and belief-based and mixed models. Chapter 19 concerns research combining ABS and experimental economics. Chapters 20 to 31 concern applications in numerous fields: fixed and endogenously determined networks, complex social systems, agent-based

and closed-form solutions with heterogeneous agents, finance, innovation studies, organizational behavior, market design, automated trading, politics, ecology, and spatial economics. They vary in length and depth but are good outlines of ABS application fields.

Because of my own research interests, I particularly enjoyed the chapters on experimental economics (John Duffy), organizations (Myong-Hun Chang and Joe Harrington), and market design (Bob Marks). In addition, Ken Kollman and Scott Page helped me to discover political science as an interesting application area. Researchers with interests in other areas will find the chapters on those areas equally appealing.

Parts 2 and 3 are more epistemological in nature. Part 2 consists of five perspective contributions in which well-established researchers discuss the advantages and disadvantages of ABS. Thomas Schelling's account of how his classic segregation model came about was fascinating, as was Axelrod's account of his work in evolutionary biology. The book concludes with Part 3, a brief newcomers' literature guide, which could serve as a basis for a graduate course on agent-based simulations.

The handbook includes introductory explanations of the main ABS algorithms. Brenner discusses several models in his chapter, and Duffy includes the classic Roth-Erev reinforcement model. Moreover, the book covers other techniques well known to the readers of INFORMS journals, such as NK-landscapes and genetic algorithms.

On the negative side, I find the book slightly repetitive (and somewhat defensive) in detailing how standard and agent-based economics differ. However, this is not a major shortcoming, and it can easily be attributed to the fact that agent-based modelers have until recently struggled to sell their methods to a wider audience.

Overall, the editors have managed to create a coherent body of knowledge, in which very little material overlaps, out of excellent literature overviews. Both novices and experienced agent-based modelers will benefit from using this handbook.

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Books Received for Review

- Athreya, K. B., S. N. Lahiri. 2006. *Measure Theory and Probability Theory*. Springer, New York. 612 pp. \$89.95.
- Chandra, C., A. K. Kamrani. 2004. *Mass Customization: A Supply Chain Approach*. Kluwer Academic Publishers, New York. 262 pp. \$120.00.
- Devedzic, V. 2006. *Semantic Web and Education*. Springer, New York. 353 pp. \$99.00.
- Gehrlein, W. V. 2006. *Condorcet's Paradox*. Springer, New York. 289 pp. \$109.00.
- Guyon, I., S. Cunn, M. Nikravesh, L. A. Zadeh, eds. 2006. *Feature Extraction: Foundations and Applications*. Springer, New York. 778 pp. \$199.00.
- Hall, R. W., ed. 2006. *Patient Flow: Reducing Delay in Healthcare Delivery*. Springer, New York. 458 pp. \$129.00.
- Kleber, R. 2006. *Dynamic Inventory Management in Reverse Logistics*. Springer, New York. 181 pp. \$64.95.
- Levermore, D. M., C. Hsu. 2006. *Enterprise Collaboration: On-Demand Information Exchange for Extended Enterprises*. Springer, New York. 176 pp. \$89.95.
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- Seppanen, M. S., S. Kumar, C. Chandra. 2005. *Process Analysis and Improvement: Tools and Techniques*. McGraw Hill, Burr Ridge, IL. 366 pp. \$65.00.
- Sherman, H. D., J. Zhu. 2006. *Service Productivity Management: Improving Service Performance Using Data Envelopment Analysis (DEA)*. Springer, New York. 328 pp. \$99.00.
- Tian, N., Z. G. Zhang. 2006. *Vacation Queueing Models: Theory and Applications*. Springer, New York. 385 pp. \$119.00.
- Unwin, A., M. Theus, H. Hofmann. 2006. *Graphics of Large Data Sets: Visualizing a Million*. Springer, New York. 271 pp. \$84.95.

In their book "Connected Marketing", Kirby and Marsden (2006) assert that recent researches have scientifically proven that, high levels of positive WOM derive business growth. Although the WOM effect has been present for a very long time, with the new developments and improvements in technology, it is much more important in influencing individuals buying decisions in recent years (Berry 2005). LeBaron, B. (2006). "Agent-based Computational Finance," Handbook of Computational Economics, in: L Tesfatsion & KL Judd (ed.). edition 1, volume 2, chapter 24, pages 1187-1233 Elsevier. Libai, B., Bolton, R., Bagozzi, M. S., Ruyter, K. O., Galletta, D. F., Risselada, H. & Stephen, A. T. (2010). This book and the individual contributions contained in it are protected under copyright by the Publisher (other than as may be noted herein). No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from the publisher. Fifteen years have passed since our first edition of this Handbook was published. Since that time, animal-assisted interventions (AAI) have continued to generate tremendous interest in the general sector, as well as the scientific community, perhaps because of people's curiosity regarding the human-animal bond and the significance of our interactions. In: Tesfatsion, L. and Judd, K.L., Eds., Handbook of Computational Economics, Volume 2, Elsevier, London, 1187-1233. [https://doi.org/10.1016/S1574-0021\(05\)02024-1](https://doi.org/10.1016/S1574-0021(05)02024-1). has been cited by the following article: TITLE: Anchoring Heuristics, Investor Sentiment and Stylized Facts in the Stock Market: An Agent Based Model. AUTHORS: Hermes Yukio Higachi, Ana Cristina Cruz de Faria, Adriana Sbicca, Jefferson Kato. KEYWORDS: Anchoring Heuristic, Investor Sentiment, Stock Market Stylized Facts, Agent-Based Model. JOURNAL NAME: Theoretical Economics Letters, Vol.10 No.1, February 27, 2020.