

A Primer Of Probability Logic

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A unified treatment of conditionals based on epistemological principles rather than the semantical principles in vogue over recent decades. This book by distinguished philosopher Nicholas Rescher seeks to clarify the idea of what a conditional says by elucidating the information that is normally transmitted by its utterance. The result is a unified treatment of conditionals based on epistemological principles rather than the semantical principles in vogue over recent decades. This approach, argues Rescher, makes it easier to understand how conditionals actually function in our thought and discourse. In its concern with what language theorists call pragmatics—the study of the norms and principles governing our use of language in conveying information—Conditionals steps beyond the limits of logic as traditionally understood and moves into the realm claimed by theorists of artificial intelligence as they try to simulate our actual information-processing practices. The book's treatment of counterfactuals essentially revives an epistemological approach proposed by F. P. Ramsey in the 1920s and developed by Rescher himself in the 1960s but since overshadowed by the now-dominant possible-worlds approach. Rescher argues that the increasingly evident liabilities of the possible-worlds strategy make a reappraisal of the older style of analysis both timely and desirable. As the book makes clear, an epistemological approach demonstrates that counterfactual reasoning, unlike inductive inference, is not a matter of abstract reasoning alone but one of good judgment and common sense.

In this two volume festschrift, contributors explore the theoretical developments (Volume I) and applications (Volume II) in traditional cognitive psychology domains, and model other areas of human performance that benefit from rigorous mathematical approaches. It brings together former classmates, students and colleagues of Dr. James T. Townsend, a pioneering researcher in the field since the early 1960s, to provide a current overview of mathematical modeling in psychology. Townsend's research critically emphasized a need for rigor in the practice of cognitive modeling, and for providing mathematical definition and structure to ill-defined psychological topics. The research captured demonstrates how the interplay of theory and application, bridged by rigorous mathematics, can move cognitive modeling forward.

Pure inductive logic is the study of rational probability treated as a branch of mathematical logic. This monograph, the first devoted to this approach, brings together the key results from the past seventy years plus the main contributions of the authors and their collaborators over the last decade to present a comprehensive account of the discipline within a single unified context. The exposition is structured around the traditional bases of rationality, such as avoiding Dutch Books, respecting symmetry and ignoring irrelevant information. The authors uncover further rationality concepts, both in the unary and in the

newly emerging polyadic languages, such as conformity, spectrum exchangeability, similarity and language invariance. For logicians with a mathematical grounding, this book provides a complete self-contained course on the subject, taking the reader from the basics up to the most recent developments. It is also a useful reference for a wider audience from philosophy and computer science.

The LNCS Journal on Data Semantics is devoted to the presentation of notable work that, in one way or another, addresses research and development on issues related to data semantics. The scope of the journal ranges from theories supporting the formal definition of semantic content to innovative domain-specific applications of semantic knowledge. The journal addresses researchers and advanced practitioners working on the semantic web, interoperability, mobile information services, data warehousing, knowledge representation and reasoning, conceptual database modeling, ontologies, and artificial intelligence. Volume XV results from a rigorous selection among 25 full papers received in response to two calls for contributions issued in 2009 and 2010. In addition, this volume contains a special report on the Ontology Alignment Evaluation Initiative, an event that has been held once a year in the last five years and has attracted considerable attention from the ontology community. This is the last LNCS transactions volume of the Journal on Data Semantics; the next issue will appear as a regular Springer Journal, published quarterly starting from 2012.

The conditional, if...then, is probably the most important term in natural language and forms the core of systems of logic and mental representation. *Cognition and Conditionals* is the first volume for over 20 years (*On Conditionals*, 1986, CUP) that brings together recent developments in the cognitive science and psychology of conditional reasoning. Over the last 10 to 15 years, research on conditionals has come to dominate the psychology of reasoning providing a rich seam of results that have created new theoretical possibilities. This book shows how these developments have led researchers to view people's conditional reasoning behaviour more as successful probabilistic reasoning rather than as errorful logical reasoning. *Cognition and Conditionals* will be a valuable resource for cognitive scientists, psychologists and philosophers interested how people actually reason with conditionals.

In recent years there has been a growing interest to extend classical methods for data analysis. The aim is to allow a more flexible modeling of phenomena such as uncertainty, imprecision or ignorance. Such extensions of classical probability theory and statistics are useful in many real-life situations, since uncertainties in data are not only present in the form of randomness --- various types of incomplete or subjective information have to be handled. About twelve years ago the idea of strengthening the dialogue between the various research communities in the field of data analysis was born and resulted in the International Conference Series on Soft Methods in Probability and Statistics (SMPS). This book gathers contributions presented at the SMPS'2012 held in Konstanz, Germany. Its aim is

to present recent results illustrating new trends in intelligent data analysis. It gives a comprehensive overview of current research into the fusion of soft computing methods with probability and statistics. Synergies of both fields might improve intelligent data analysis methods in terms of robustness to noise and applicability to larger datasets, while being able to efficiently obtain understandable solutions of real-world problems.

The first edition of the Handbook of Philosophical Logic (four volumes) was published in the period 1983-1989 and has proven to be an invaluable reference work to both students and researchers in formal philosophy, language and logic. The second edition of the Handbook is intended to comprise some 18 volumes and will provide a very up-to-date authoritative, in-depth coverage of all major topics in philosophical logic and its applications in many cutting-edge fields relating to computer science, language, argumentation, etc. The volumes will no longer be as topic-oriented as with the first edition because of the way the subject has evolved over the last 15 years or so. However the volumes will follow some natural groupings of chapters. Audience: Students and researchers whose work or interests involve philosophical logic and its applications

Mainly focusing on processing uncertainty, this book presents state-of-the-art techniques and demonstrates their use in applications to econometrics and other areas. Processing uncertainty is essential, considering that computers – which help us understand real-life processes and make better decisions based on that understanding – get their information from measurements or from expert estimates, neither of which is ever 100% accurate. Measurement uncertainty is usually described using probabilistic techniques, while uncertainty in expert estimates is often described using fuzzy techniques. Therefore, it is important to master both techniques for processing data. This book is highly recommended for researchers and students interested in the latest results and challenges in uncertainty, as well as practitioners who want to learn how to use the corresponding state-of-the-art techniques.

This book is a collection of contributions honouring Arnon Avron's seminal work on the semantics and proof theory of non-classical logics. It includes presentations of advanced work by some of the most esteemed scholars working on semantic and proof-theoretical aspects of computer science logic. Topics in this book include frameworks for paraconsistent reasoning, foundations of relevance logics, analysis and characterizations of modal logics and fuzzy logics, hypersequent calculi and their properties, non-deterministic semantics, algebraic structures for many-valued logics, and representations of the mechanization of mathematics. Avron's foundational and pioneering contributions have been widely acknowledged and adopted by the scientific community. His research interests are very broad, spanning over proof theory, automated reasoning, non-classical logics, foundations of mathematics, and applications of logic in computer science and artificial intelligence. This is clearly reflected by the diversity of topics discussed in the chapters included in this book, all of which directly relate to Avron's past and present works. This book is of interest to computer scientists and scholars of formal logic.

This book constitutes the refereed proceedings of the 12th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, ECSQARU

2013, held in Utrecht, The Netherlands, in July 2013. The 44 revised full papers presented were carefully reviewed and selected from 89 submissions. Papers come from researchers interested in advancing the technology and from practitioners using uncertainty techniques in real-world applications. The scope of the ECSQARU conferences encompasses fundamental issues, representation, inference, learning, and decision making in qualitative and numeric uncertainty paradigms.

This proceedings volume is a collection of peer reviewed papers presented at the 8th International Conference on Soft Methods in Probability and Statistics (SMPS 2016) held in Rome (Italy). The book is dedicated to Data science which aims at developing automated methods to analyze massive amounts of data and to extract knowledge from them. It shows how Data science employs various programming techniques and methods of data wrangling, data visualization, machine learning, probability and statistics. The soft methods proposed in this volume represent a collection of tools in these fields that can also be useful for data science.

This volume recreates the received notion of reflective equilibrium. It reconfigures reflective equilibrium as both a cognitive ideal and a method for approximating this ideal. The ideal of reflective equilibrium is restructured using the concept of discursive strata, which are formed by sentences and differentiated by function. Sentences that perform the same kind of linguistic function constitute a stratum. The book shows how moral discourse can be analyzed into phenomenal, instrumental, and teleological strata, and the ideal of reflective equilibrium reworked in these terms. In addition, the work strengthens the method of reflective equilibrium by harnessing the resources of decision theory and inductive logic. It launches a comparative version of decision theory and employs this framework as a guide to moral theory choice. It also recruits quantitative inductive logic to inform a standard of inductive cogency. When used in tandem with comparative decision theory, this standard can aid in the effort to turn the undesirable condition of reflective disequilibrium into reflective equilibrium.

This book provides a systematic and comprehensive description of Non-Axiomatic Logic, which is the result of the author's research for about three decades. Non-Axiomatic Logic is designed to provide a uniform logical foundation for Artificial Intelligence, as well as an abstract description of the "laws of thought" followed by the human mind. Different from "mathematical" logic, where the focus is the regularity required when demonstrating mathematical conclusions, Non-Axiomatic Logic is an attempt to return to the original aim of logic, that is, to formulate the regularity in actual human thinking. To achieve this goal, the logic is designed under the assumption that the system has insufficient knowledge and resources with respect to the problems to be solved, so that the "logical conclusions" are only valid with respect to the available knowledge and resources. Reasoning processes according to this logic covers cognitive functions like learning, planning, decision making, problem solving, etc. This book is written for researchers and students in Artificial Intelligence and Cognitive Science, and can be used as a textbook for courses at graduate level, or upper-level undergraduate, on Non-Axiomatic Logic.

This book is meant to be a primer, that is an introduction, to probability logic, a subject that appears to be in its infancy. Probability logic is a subject envisioned by Hans Reichenbach and largely created by Adams. It treats conditionals as bearers of conditional probabilities and discusses an appropriate sense of validity for arguments

such conditionals, as well as ordinary statements as premises. This is a clear well written text on the subject of probability logic, suitable for advanced undergraduates or graduates, but also of interest to professional philosophers. There are well thought out exercises, and a number of advanced topics treated in appendices, while some are brought up in exercises and some are alluded to only in footnotes. By this means it is hoped that the reader will at least be made aware of most of the important ramifications of the subject and its tie-ins with current research, and will have some indications concerning recent and relevant literature.

The Handbook of the Logic of Argument and Inference is an authoritative reference work in a single volume, designed for the attention of senior undergraduates, graduate students and researchers in all the leading research areas concerned with the logic of practical argument and inference. After an introductory chapter, the role of standard logics is surveyed in two chapters. These chapters can serve as a mini-course for interested readers, in deductive and inductive logic, or as a refresher. Then follow two chapters of criticism; one the internal critique and the other the empirical critique. The first deals with objections to standard logics (as theories of argument and inference) arising from the research programme in philosophical logic. The second canvasses criticisms arising from work in cognitive and experimental psychology. The next five chapters deal with developments in dialogue logic, interrogative logic, informal logic, probability logic and artificial intelligence. The last chapter surveys formal approaches to practical reasoning and anticipates possible future developments. Taken as a whole the Handbook is a single-volume indication of the present state of the logic of argument and inference at its conceptual and theoretical best. Future editions will periodically incorporate significant new developments.

This book presents the latest advances and research achievements in the fields of autonomous robots and intelligent systems, presented at the IAS-15 conference, held in Baden-Baden, Germany, in June 2018. It brings together contributions from researchers, engineers and practitioners from all over the world on the main trends of robotics: navigation, path planning, robot vision, human detection, and robot design – as well as a wide range of applications. This installment of the conference reflects the rise of machine learning and deep learning in the robotics field, as employed in a variety of applications and systems. All contributions were selected using a rigorous peer-review process to ensure their scientific quality. The series of biennial IAS conferences was started in 1986: since then, it has become an essential venue for the robotics community.

The Oxford Handbook of Causal Reasoning offers a state-of-the-art review of one of our most central cognitive competencies, which has for a long time been neglected in cognitive psychology. This Handbook provides introductions of competing theories of causal reasoning, and discusses its role in various cognitive functions and domains.

Scott Sturgeon presents an original account of mental states and their dynamics. He develops a detailed story of coarse- and fine-grained mental states, a novel perspective on how they fit together, an engaging theory of the rational transitions between them, and a fresh view of how formal methods can advance our understanding in this area. In doing so, he addresses a deep four-way divide in literature on epistemic rationality. Formal epistemology is done in specialized languages--often seeming a lot more like mathematics than Plato--and so can alienate philosophers who are drawn to more traditional work on thought experiments in epistemic rationality. Conversely, informal epistemology appears to be a lot more like Plato than mathematics and, as such, it tends to deter philosophers drawn to formal models of the phenomena. Similarly, the epistemology of coarse-grained states boils down everything to a

discussion of rational belief--making the area appear a lot more like foundations of knowledge than anything useful for the theory rational decision, such as decision-making under uncertainty. The Rational Mind unifies work in all of these areas for the first time.

Conditionals, Paradox, and Probability comprises fifteen original essays on themes from the work of Dorothy Edgington, the first woman to hold a chair in philosophy at Oxford. Eminent contributors from philosophy and linguistics discuss a range of topics including conditionals, vagueness, knowledge, reasoning, and probability.

These are the proceedings of the 8th European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty, ECSQARU 2005, held in Barcelona (Spain), July 6–8, 2005. The ECSQARU conferences are biennial and have become a major forum for advances in the theory and practice of reasoning under uncertainty. The first ECSQARU conference was held in Marseille (1991), and after in Granada (1993), Fribourg (1995), Bonn (1997), London (1999), Toulouse (2001) and Aalborg (2003). The papers gathered in this volume were selected out of 130 submissions, after a strict review process by the members of the Program Committee, to be presented at ECSQARU 2005. In addition, the conference included invited lectures by three outstanding researchers in the area, Serafin Moral (Imprecise Probabilities), Rudolf Kruse (Graphical Models in Planning) and Jerome Lang (Social Choice). Moreover, the application of uncertainty models to real-world problems was addressed at ECSQARU 2005 by a special session devoted to successful industrial applications, organized by Rudolf Kruse. Both invited lectures and papers of the special session contribute to this volume. On the whole, the programme of the conference provided a broad, rich and up-to-date perspective of the current high-level research in the area which is reflected in the contents of this volume.

I would like to warmly thank the members of the Program Committee and the additional referees for their valuable work, the invited speakers and the invited session organizer.

Logic is a field studied mainly by researchers and students of philosophy, mathematics and computing. Inductive logic seeks to determine the extent to which the premisses of an argument entail its conclusion, aiming to provide a theory of how one should reason in the face of uncertainty. It has applications to decision making and artificial intelligence, as well as how scientists should reason when not in possession of the full facts. In this book, Jon Williamson embarks on a quest to find a general, reasonable, applicable inductive logic (GRAIL), all the while examining why pioneers such as Ludwig Wittgenstein and Rudolf Carnap did not entirely succeed in this task. Along the way he presents a general framework for the field, and reaches a new inductive logic, which builds upon recent developments in Bayesian epistemology (a theory about how strongly one should believe the various propositions that one can express).

The book explores this logic in detail, discusses some key criticisms, and considers how it might be justified. Is this truly the GRAIL? Although the book presents new research, this material is well suited to being delivered as a series of lectures to students of philosophy, mathematics, or computing and doubles as an introduction to the field of inductive logic.

The formal systems of logic have ordinarily been regarded as independent of biology, but recent developments in evolutionary theory suggest that biology and logic may be intimately interrelated. In this book, William Cooper outlines a theory of rationality in which logical law emerges as an intrinsic aspect of evolutionary biology. This biological perspective on logic, though at present unorthodox, could change traditional ideas about the reasoning process. Cooper examines the connections between logic and evolutionary biology and illustrates how logical rules are derived directly from evolutionary principles, and therefore have no independent status of their own. Laws of decision theory, utility theory, induction, and deduction are reinterpreted as natural consequences of evolutionary processes. Cooper's connection of logical law to evolutionary theory ultimately results in a unified foundation for an evolutionary science of reason. It will be of interest to professionals and students of philosophy

of science, logic, evolutionary theory, and cognitive science.

Over a distinguished academic career, the Canadian philosopher and scholar John Woods has written on a rich variety of topics central to contemporary philosophy. These include the history and philosophy of logic, deviant logics, inductive and abductive reasoning, informal reasoning, fallacy theory, the logic of fiction, epistemology, and abortion and euthanasia. Not only has Woods' work been significant in itself, it has also stimulated others working in these fields. *Mistakes of Reason* is a tribute to Woods and contains twenty-six new essays by leading Canadian and international philosophers. The essays are accompanied by commentaries by Woods himself, creating a unique dialogue between Woods and his colleagues. Editors Kent A. Peacock and Andrew D. Irvine have grouped the works under the themes of Reality, Knowledge, Logic and Language, Reasoning, and Values. The essays evaluate Woods' work and celebrate the generous contribution that he has made to Canada's intellectual development over the past forty years.

Admittedly, the notion "intelligence or intelligent computing" has been around us for several decades, implicitly indicating any non-conventional methods of solving complex system problems such as expert systems and intelligent control techniques that mimic human skill and replace human operators for automation. Various kinds of intelligent methods have been suggested, phenomenological or ontological, and we have been witnessing quite successful applications. On the other hand, "Soft Computing Techniques" is the concept coined by Lotfi Zadeh, referring to "a set of approaches of computing which parallels the remarkable ability of the human mind to reason and learn in an environment of uncertainty, imprecision and partial truth." Such a notion is well contrasted with the conventional binary logic based hard computing and has been effectively utilized with the guiding principle of "exploiting the tolerance for uncertainty, imprecision and partial truth to achieve tractability, robustness and low solution cost." The soft computing techniques are often employed as the technical entities in a tool box with tools being FL, ANN, Rough Set, GA etc. Based on one's intuition and experience, an engineer can build and realize human-like systems by smartly mixing proper technical tools effectively and efficiently in a wide range of fields. For some time, the soft computing techniques are also referred to as intelligent computing tools.

A Primer of Probability Logic Stanford Univ Center for the Study

The QL&SC 2012 is a major symposium for scientists, and practitioners all around the world to present their latest researches, results, ideas, developments and applications in such areas as quantitative logic, many-valued logic, fuzzy logic, quantification of software, artificial intelligence, fuzzy sets and systems and soft computing. This invaluable book provides a broad introduction to the fuzzy reasoning and soft computing. It is certain one should not go too far in approximation and optimization, and a certain degree must be kept in mind. This is the essential idea of quantitative logic and soft computing. The explanations in the book are complete to provide the necessary background material needed to go further into the subject and explore the research literature. It is suitable reading for graduate students. It provides a platform for mutual exchanges from top experts and scholars around the world in this field. This book constitutes the thoroughly refereed postproceedings of the International Workshop on Conditionals, Information, and Inference, WCII 2002, held in Hagen, Germany in May 2002. The 9 revised full papers presented together with 3 invited papers by leading researchers in the area were carefully selected during iterated

rounds of reviewing and improvement. The papers address all current issues of research on conditionals, ranging from foundational, theoretical, and methodological aspects to applications in various contexts of knowledge representation. Examining the role of implicit, unconscious thinking on reasoning, decision making, problem solving, creativity, and its neurocognitive basis, for a genuinely psychological conception of rationality. This volume contributes to a current debate within the psychology of thought that has wide implications for our ideas about creativity, decision making, and economic behavior. The essays focus on the role of implicit, unconscious thinking in creativity and problem solving, the interaction of intuition and analytic thinking, and the relationship between communicative heuristics and thought. The analyses move beyond the conventional conception of mind informed by extra-psychological theoretical models toward a genuinely psychological conception of rationality—a rationality no longer limited to conscious, explicit thought, but able to exploit the intentional implicit level. The contributors consider a new conception of human rationality that must cope with the uncertainty of the real world; the implications of abandoning the normative model of classic logic and adopting a probabilistic approach instead; the argumentative and linguistic aspects of reasoning; and the role of implicit thought in reasoning, creativity, and its neurological base. Contributors Maria Bagassi, Linden J. Ball, Jean Baratgin, Aron K. Barbey, Tilmann Betsch, Eric Billaut, Jean-François Bonnefon, Pierre Bonnier, Shira Elqayam, Keith Frankish, Gerd Gigerenzer, Ken Gilhooly, Denis Hilton, Anna Lang, Stefanie Lindow, Laura Macchi, Hugo Mercier, Giuseppe Mosconi, Ian R. Newman, Mike Oaksford, David Over, Guy Politzer, Johannes Ritter, Steven A. Sloman, Edward J. N. Stupple, Ron Sun, Nicole H. Therriault, Valerie A. Thompson, Emmanuel Trouche-Raymond, Riccardo Viale

In contrast to the prevailing tradition in epistemology, the focus in this book is on low-level inferences, i.e., those inferences that we are usually not consciously aware of and that we share with the cat nearby which infers that the bird which she sees picking grains from the dirt, is able to fly. Presumably, such inferences are not generated by explicit logical reasoning, but logical methods can be used to describe and analyze such inferences. Part 1 gives a purely system-theoretic explication of belief and inference. Part 2 adds a reliabilist theory of justification for inference, with a qualitative notion of reliability being employed. Part 3 recalls and extends various systems of deductive and nonmonotonic logic and thereby explains the semantics of absolute and high reliability. In Part 4 it is proven that qualitative neural networks are able to draw justified deductive and nonmonotonic inferences on the basis of distributed representations. This is derived from a soundness/completeness theorem with regard to cognitive semantics of nonmonotonic reasoning. The appendix extends the theory both logically and ontologically, and relates it to A. Goldman's reliability account of justified belief.

Conditional reasoning is reasoning that involves statements of the sort If A (Antecedent) then C (Consequent). This type of reasoning is ubiquitous; everyone engages in it. Indeed, the ability to do so may be considered a defining human characteristic. Without this ability, human cognition would be greatly impoverished. "What-if" thinking could not occur. There would be no retrospective efforts to understand history by imagining how it could have taken a different course. Decisions that take possible contingencies into account could not be made; there could be no

attempts to influence the future by selecting actions on the basis of their expected effects. Despite the commonness and importance of conditional reasoning and the considerable attention it has received from scholars, it remains the subject of much continuing debate. Unsettled questions, both normative and empirical, continue to be asked. What constitutes normative conditional reasoning? How do people engage in it? Does what people do match what would be expected of a rational agent with the abilities and limitations of human beings? If not, how does it deviate and how might people's ability to engage in it be improved? This book reviews the work of prominent psychologists and philosophers on conditional reasoning. It describes empirical research on how people deal with conditional arguments and on how conditional statements are used and interpreted in everyday communication. It examines philosophical and theoretical treatments of the mental processes that support conditional reasoning. Its extensive coverage of the subject makes it an ideal resource for students, teachers, and researchers with a focus on cognition across disciplines. The first reference on rationality that integrates accounts from psychology and philosophy, covering descriptive and normative theories from both disciplines. Both analytic philosophy and cognitive psychology have made dramatic advances in understanding rationality, but there has been little interaction between the disciplines. This volume offers the first integrated overview of the state of the art in the psychology and philosophy of rationality. Written by leading experts from both disciplines, *The Handbook of Rationality* covers the main normative and descriptive theories of rationality—how people ought to think, how they actually think, and why we often deviate from what we can call rational. It also offers insights from other fields such as artificial intelligence, economics, the social sciences, and cognitive neuroscience. The Handbook proposes a novel classification system for researchers in human rationality, and it creates new connections between rationality research in philosophy, psychology, and other disciplines. Following the basic distinction between theoretical and practical rationality, the book first considers the theoretical side, including normative and descriptive theories of logical, probabilistic, causal, and defeasible reasoning. It then turns to the practical side, discussing topics such as decision making, bounded rationality, game theory, deontic and legal reasoning, and the relation between rationality and morality. Finally, it covers topics that arise in both theoretical and practical rationality, including visual and spatial thinking, scientific rationality, how children learn to reason rationally, and the connection between intelligence and rationality.

The aim of this book is to provide an introduction to probability logic-based formalization of uncertain reasoning. The authors' primary interest is mathematical techniques for infinitary probability logics used to obtain results about proof-theoretical and model-theoretical issues such as axiomatizations, completeness, compactness, and decidability, including solutions of some problems from the literature. An extensive bibliography is provided to point to related work, and this book may serve as a basis for further research projects, as a reference for researchers using probability logic, and also as a textbook for graduate courses in logic.

Addresses central questions concerning conditionals by combining the methods of formal epistemology with those of cognitive psychology.

This book is a sustained defence of traditional internalist epistemology. The aim is

threefold: to address some key criticisms of internalism and show that they do not hit their mark, to articulate a detailed version of a central objection to externalism, and to illustrate how a consistent internalism can meet the charge that it fares no better in the face of this objection than does externalism itself. This original work will be recommended reading for scholars with an interest in epistemology.

This is an authoritative collection of papers addressing the key challenges that face the Bayesian interpretation of probability today. The volume includes important criticisms of Bayesian reasoning and gives an insight into some of the points of disagreement amongst advocates of the Bayesian approach. It will be of interest to graduate students, researchers, those involved with the applications of Bayesian reasoning, and philosophers.

This book offers a philosophically-based, yet clinically-oriented perspective on current medical reasoning aiming at 1) identifying important forms of uncertainty permeating current clinical reasoning and practice 2) promoting the application of an abductive methodology in the health context in order to deal with those clinical uncertainties 3) bridging the gap between biomedical knowledge, clinical practice, and research and values in both clinical and philosophical literature. With a clear philosophical emphasis, the book investigates themes lying at the border between several disciplines, such as medicine, nursing, logic, epistemology, and philosophy of science; but also ethics, epidemiology, and statistics. At the same time, it critically discusses and compares several professional approaches to clinical practice such as the one of medical doctors, nurses and other clinical practitioners, showing the need for developing a unified framework of reasoning, which merges methods and resources from many different clinical but also non-clinical disciplines. In particular, this book shows how to leverage nursing knowledge and practice, which has been considerably neglected so far, to further shape the interdisciplinary nature of clinical reasoning. Furthermore, a thorough philosophical investigation on the values involved in health care is provided, based on both the clinical and philosophical literature. The book concludes by proposing an integrative approach to health and disease going beyond the so-called "classical biomedical model of care".

In designing the Handbook of the History of Logic, the Editors have taken the view that the history of logic holds more than an antiquarian interest, and that a knowledge of logic's rich and sophisticated development is, in various respects, relevant to the research programmes of the present day. Ancient logic is no exception. The present volume attests to the distant origins of some of modern logic's most important features, such as can be found in the claim by the authors of the chapter on Aristotle's early logic that, from its infancy, the theory of the syllogism is an example of an intuitionistic, non-monotonic, relevantly paraconsistent logic. Similarly, in addition to its comparative earliness, what is striking about the best of the Megarian and Stoic traditions is their sophistication and originality.

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