

# Philosophy Of Science A Very Short Introduction

This popular reader has been vastly updated with ten stimulating new selections on the natural and the social sciences: feminism; postmodernism, relativism, and science; confirmation, acceptance, and theory; explanatory unification; and science and values. Retaining the best essays from the previous editions, the editors have added important new pieces to maintain this influential text's relevance.

Current academic philosophy is being challenged from several angles. Subdisciplinary specialisations often make it challenging to articulate philosophy's relevance for the societal questions of our day. Additionally, the success of the 'scientific method' puts pressure on philosophers to articulate their methods and specify how these can be successful. How does philosophical progress come about? What can philosophy contribute to our understanding of today's world? Moreover, can it also contribute to resolving urgent societal challenges, such as anthropogenic climate change? This edited volume evaluates the place of philosophy in the age of science. It addresses three related sub-themes: philosophical progress, philosophical method and philosophy's societal relevance. Fourteen authors engage with these sub-themes, focusing on the topics of their philosophical expertise, such as the philosophy of religion, evolutionary ethics and the nature of free will. In doing so, they explore their methods of enquiry, and look at how progress in their research comes about.

Philosophy of science studies the methods, theories, and concepts used by scientists. It mainly developed as a field in its own right during the twentieth century and is now a diversified and lively research area. This book surveys the

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current state of the discipline by focusing on central themes like confirmation of scientific hypotheses, scientific explanation, causality, the relationship between science and metaphysics, scientific change, the relationship between philosophy of science and science studies, the role of theories and models, unity of science. These themes define general philosophy of science. The book also presents sub-disciplines in the philosophy of science dealing with the main sciences: logic, mathematics, physics, biology, medicine, cognitive science, linguistics, social sciences, and economics. While it is common to address the specific philosophical problems raised by physics and biology in such a book, the place assigned to the philosophy of special sciences is much more unusual. Most authors collaborate on a regular basis in their research or teaching and share a common vision of philosophy of science and its place within philosophy and academia in general. The chapters have been written in close accordance with the three editors, thus achieving strong unity of style and tone.

How much faith should we place in what scientists tell us? Is it possible for scientific knowledge to be fully 'objective'? What, really, can be defined as science? In the second edition of this Very Short Introduction, Samir Okasha explores the main themes and theories of contemporary philosophy of science, and investigates fascinating, challenging questions such as these. Starting at the very beginning, with a concise overview of the history of science, Okasha examines the nature of fundamental practices such as reasoning, causation, and explanation. Looking at scientific revolutions and the issue of scientific change, he asks whether there is a discernible pattern to the way scientific ideas change over time, and discusses realist versus anti-realist attitudes towards science. He finishes by considering science today, and the social and ethical philosophical questions

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surrounding modern science. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

Contemporary Debates in Philosophy of Science contains sixteen original essays by leading authors in the philosophy of science, each one defending the affirmative or negative answer to one of eight specific questions, including: Are there laws of social science? Are causes physically connected to their effects? Is the mind a system of modules shaped by natural selection? Brings together fresh debates on eight of the most controversial issues in the philosophy of science. Questions addressed include: "Are there laws of social science?"; "Are causes physically connected to their effects?"; "Is the mind a system of modules shaped by natural selection?" Each question is treated by a pair of opposing essays written by eminent scholars, and especially commissioned for the volume. Lively debate format sharply defines the issues, and paves the way for further discussion. Will serve as an accessible introduction to the major topics in contemporary philosophy of science, whilst also capturing the imagination of professional philosophers.

This textbook offers an introduction to the philosophy of science. It helps undergraduate students from the natural, the human and social sciences to gain an understanding of what science is, how it has developed, what its core traits are, how to distinguish between science and pseudo-science and to discover what a scientific attitude is. It argues against the common assumption that there is fundamental difference between natural and human science, with natural science being concerned with testing hypotheses and discovering

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natural laws, and the aim of human and some social sciences being to understand the meanings of individual and social group actions. Instead examines the similarities between the sciences and shows how the testing of hypotheses and doing interpretation/hermeneutics are similar activities. The book makes clear that lessons from natural scientists are relevant to students and scholars within the social and human sciences, and vice versa. It teaches its readers how to effectively demarcate between science and pseudo-science and sets criteria for true scientific thinking. Divided into three parts, the book first examines the question What is Science? It describes the evolution of science, defines knowledge, and explains the use of and need for hypotheses and hypothesis testing. The second half of part I deals with scientific data and observation, qualitative data and methods, and ends with a discussion of theories on the development of science. Part II offers philosophical reflections on four of the most important concepts in science: causes, explanations, laws and models. Part III presents discussions on philosophy of mind, the relation between mind and body, value-free and value-related science, and reflections on actual trends in science. How much faith should we place in what scientists tell us? Is it possible for scientific knowledge to be fully "objective?" What, really, can be defined as science? In the second edition of this Very Short Introduction, Samir Okasha explores the main themes and theories of contemporary philosophy of science, and investigates fascinating, challenging questions such as these. Starting at the very beginning, with a concise overview of the history of science, Okasha examines the nature of fundamental practices such as reasoning, causation, and explanation. Looking at scientific revolutions and the issue of scientific change, he asks whether there is a discernible pattern to the way scientific ideas change over time, and discusses realist versus anti-realist attitudes

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towards science. He finishes by considering science today, and the social and ethical philosophical questions surrounding modern science. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

Science has made a huge impact on human society over hundred years, but how does it work? How do scientists do the things they do? How do they come up with the theories? How do they test them? How do they use these theories to explain phenomena? How do they draw conclusions from them about how the world might be? Now updated, this second edition of *Philosophy of Science: Key Concepts* looks at each of these questions and more. Taking in turn the fundamental theories, processes and views lying at the heart of the philosophy of science, this engaging introduction illuminates the scientific practice and provides a better appreciation of how science actually works. It features:

- Chapters on discovery, evidence, verification and falsification, realism and objectivity
- Accessible overviews of work of key thinkers such as Galileo, Einstein and Mullis
- A new chapter on explanation
- An extended range of easy-to-follow and contemporary examples to help explain more technical ideas
- Study exercises, an annotated bibliography and suggestions of Where to Go Next

Succinct and approachable, *Philosophy of Science: Key Concepts* outlines some of the most central and important scientific questions, problems and arguments without assuming prior knowledge of philosophy. This enjoyable introduction is the perfect starting point for anyone looking to understand how and why science has shaped and changed our view of the world.

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This book explores central philosophical concepts, issues, and debates in the philosophy of science, both historical and contemporary.

Major figures of twentieth-century philosophy were enthralled by the revolution in formal logic, and many of their arguments are based on novel mathematical discoveries. Hilary Putnam claimed that the Löwenheim-Skolem theorem refutes the existence of an objective, observer-independent world; Bas van Fraassen claimed that arguments against empiricism in philosophy of science are ineffective against a semantic approach to scientific theories; W. V. O. Quine claimed that the distinction between analytic and synthetic truths is trivialized by the fact that any theory can be reduced to one in which all truths are analytic. This book dissects these and other arguments through in-depth investigation of the mathematical facts undergirding them. It presents a systematic, mathematically rigorous account of the key notions arising from such debates, including theory, equivalence, translation, reduction, and model. The result is a far-reaching reconceptualization of the role of formal methods in answering philosophical questions.

This Very Short Introduction provides a concise overview of the main themes of contemporary philosophy of science. After a short history, the author goes on to investigate the nature of scientific reasoning, scientific explanation and more.

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Philosophy of Science: An Anthology assembles some of the finest papers in the philosophy of science since 1945, showcasing enduring classics alongside important and innovative recent work. Introductions by the editor highlight connections between selections, and contextualize the articles. Nine sections address topics at the heart of philosophy of science, including realism and the character of scientific theories, scientific explanations and laws of nature, singular causation, and the metaphysical implications of modern physics. Provides an authoritative and accessible overview of the field.

The question of the proper role of metaphysics in philosophy of science is both significant and contentious. The last few decades have seen considerable engagement with philosophical projects aptly described as "the metaphysics of science:" inquiries into natural laws and properties, natural kinds, causal relations, and dispositions. At the same time, many metaphysicians have begun moving in the direction of more scientifically-informed ("scientific" or "naturalistic") metaphysics. And yet many philosophers of science retain a deep suspicion about the significance of metaphysical investigations into science. This volume of new essays explores a broadly methodological question: what role should metaphysics play in our philosophizing about science? These new essays,

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written by leading philosophers of science, address this question both through ground-level investigations of particular issues in the metaphysics of science and by more general methodological inquiry.

This thorough, yet accessible text makes immunology the central illustrative domain of scientific inquiry, rather than physics. Every major issue central to contemporary philosophy of science, from reduction to incommensurability, has a clear illustrative case within immunology. Covers both the positivist model of science and the currently popular alternatives to the positivist model that flow from Thomas Kuhn's watershed work. Includes a glossary. Annotation copyright by Book News, Inc., Portland, OR

Scientists use concepts and principles that are partly specific for their subject matter, but they also share part of them with colleagues working in different fields. Compare the biological notion of a 'natural kind' with the general notion of 'confirmation' of a hypothesis by certain evidence. Or compare the physical principle of the 'conservation of energy' and the general principle of 'the unity of science'.

Scientists agree that all such notions and principles aren't as crystal clear as one might wish. An important task of the philosophy of the special sciences, such as philosophy of physics, of biology and of economics, to mention only a few of the many



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flourishing examples, is the clarification of such subject specific concepts and principles. Similarly, an important task of 'general' philosophy of science is the clarification of concepts like 'confirmation' and principles like 'the unity of science'. It is evident that clarification of concepts and principles only makes sense if one tries to do justice, as much as possible, to the actual use of these notions by scientists, without however following this use slavishly. That is, occasionally a philosopher may have good reasons for suggesting to scientists that they should deviate from a standard use. Frequently, this amounts to a plea for differentiation in order to stop debates at cross-purposes due to the conflation of different meanings. While the special volumes of the series of Handbooks of the Philosophy of Science address topics relative to a specific discipline, this general volume deals with focal issues of a general nature. After an editorial introduction about the dominant method of clarifying concepts and principles in philosophy of science, called explication, the first five chapters deal with the following subjects. Laws, theories, and research programs as units of empirical knowledge (Theo Kuipers), various past and contemporary perspectives on explanation (Stathis Psillos), the evaluation of theories in terms of their virtues (Ilkka Niiniluoto), and the role of experiments in the natural sciences, notably physics and biology (Allan Franklin), and their role in the

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social sciences, notably economics (Wenceslao Gonzalez). In the subsequent three chapters there is even more attention to various positions and methods that philosophers of science and scientists may favor: ontological, epistemological, and methodological positions (James Ladyman), reduction, integration, and the unity of science as aims in the sciences and the humanities (William Bechtel and Andrew Hamilton), and logical, historical and computational approaches to the philosophy of science (Atocha Aliseda and Donald Gillies). The volume concludes with the much debated question of demarcating science from nonscience (Martin Mahner) and the rich European-American history of the philosophy of science in the 20th century (Friedrich Stadler). Comprehensive coverage of the philosophy of science written by leading philosophers in this field Clear style of writing for an interdisciplinary audience No specific pre-knowledge required

Originally published as *Scientific Research*, this pair of volumes constitutes a fundamental treatise on the strategy of science. Mario Bunge, one of the major figures of the century in the development of a scientific epistemology, describes and analyzes scientific philosophy, as well as discloses its philosophical presuppositions. This work may be used as a map to identify the various stages in the road to scientific knowledge. *Philosophy of Science* is

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divided into two volumes, each with two parts. Part 1 offers a preview of the scheme of science and the logical and semantical tool that will be used throughout the work. The account of scientific research begins with part 2, where Bunge discusses formulating the problem to be solved, hypothesis, scientific law, and theory. The second volume opens with part 3, which deals with the application of theories to explanation, prediction, and action. This section is graced by an outstanding discussion of the philosophy of technology. Part 4 begins with measurement and experiment. It then examines risks in jumping to conclusions from data to hypotheses as well as the converse procedure. Bunge begins this mammoth work with a section entitled "How to Use This Book." He writes that it is intended for both independent reading and reference as well as for use in courses on scientific method and the philosophy of science. It suits a variety of purposes from introductory to advanced levels. Philosophy of Science is a versatile, informative, and useful text that will benefit professors, researchers, and students in a variety of disciplines, ranging from the behavioral and biological sciences to the physical sciences. Both an anthology and an introductory textbook, Philosophy of Science: The Central Issues offers instructors and students a comprehensive anthology of fifty-two primary texts by leading philosophers in the field and provides extensive

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editorial commentary that places the readings in a wide philosophical context.

Any serious student attempting to better understand the nature, methods, and justification of science will value Alex Rosenberg and Lee McIntyre's updated and substantially revised fourth edition of *Philosophy of Science: A Contemporary Introduction*. Weaving lucid explanations with clear analyses, the volume is a much-used, thematically oriented introduction to the field. The fourth edition has been thoroughly rewritten based on instructor and student feedback, to improve readability and accessibility, without sacrificing depth. It retains, however, all of the logically structured, extensive coverage of earlier editions, which a review in the journal *Teaching Philosophy* called "the industry standard" and "essential reading." Key Features of the Fourth Edition: Revised and rewritten for readability based on feedback from student and instructor surveys. Updated text on the problem of underdetermination, social science, and the realism/antirealism debate. Improved continuity between chapters. Revised and updated Study Questions and annotated Suggested Readings at the end of each chapter. Updated Bibliography. For a list of relevant online primary sources, please visit: [www.routledge.com/9781138331518](http://www.routledge.com/9781138331518). *Philosophy of Science: A Very Short Introduction* Oxford University Press

The first in-depth reference in the field that combines scientific knowledge with philosophical inquiry, *The Philosophy of Science: An Encyclopedia* is a two-volume set that brings together an international team of leading scholars to provide over 130 entries on the essential concepts in the philosophy of science. The areas covered include: biology chemistry epistemology and metaphysics physics psychology and mind the social sciences key figures in the combined studies of science and philosophy. The essays represent the

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most up-to-date philosophical thinking on timeless scientific topics such as: determinism, explanation, laws of nature, perception, individuality, time, and economics as well as timely topics like adaptation, conservation biology, quantum logic, consciousness, evolutionary psychology, and game theory.

By applying research in artificial intelligence to problems in the philosophy of science, Paul Thagard develops an exciting new approach to the study of scientific reasoning. This approach uses computational ideas to shed light on how scientific theories are discovered, evaluated, and used in explanations. Thagard describes a detailed computational model of problem solving and discovery that provides a conceptually rich yet rigorous alternative to accounts of scientific knowledge based on formal logic, and he uses it to illuminate such topics as the nature of concepts, hypothesis formation, analogy, and theory justification.

Very Short Introductions: Brilliant, Sharp, Inspiring Philosophy of physics is concerned with the deepest theories of modern physics - notably quantum theory, our theories of space, time and symmetry, and thermal physics - and their strange, even bizarre conceptual implications. A deeper understanding of these theories helps both physics, through pointing the way to new theories and new applications, and philosophy, through seeing how our worldview has to change in the light of what we learn from physics. This Very Short Introduction explores the core topics in philosophy of physics through three key themes. The first - the nature of space, time, and motion - begins by considering the philosophical puzzles that led Isaac Newton to propose the existence of absolute space, and then discusses how those puzzles change - but do not disappear - in the context of the revolutions in our understanding of space and time that came first from special, and then from general, relativity. The second - the emergence of irreversible behavior

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in statistical mechanics - considers how the microscopic laws of physics, which know of no distinction between past and future, can be compatible with the melting of ice, the cooling of coffee, the passing of youth, and all the other ways in which the large-scale world distinguishes past from future. The last section discusses quantum theory - the foundation of most of modern physics, yet mysterious to this day. It explains just why quantum theory is so difficult to make sense of, how we might nonetheless attempt to do it, and why the question has been highly relevant to the development of physics, and continues to be so. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable. An up-to-date, clear but rigorous introduction to the philosophy of science offering an indispensable grounding in the philosophical understanding of science and its problems. The book pays full heed to the neglected but vital conceptual issues such as the nature of scientific laws, while balancing and linking this with a full coverage of epistemological problems such as our knowledge of such laws. A short and accessible introduction to philosophy of science for students and researchers across the life sciences. Few can imagine a world without telephones or televisions; many depend on computers and the Internet as part of daily life. Without scientific theory, these developments would not have been possible. In this exceptionally clear and engaging introduction to philosophy of science, James Ladyman explores

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the philosophical questions that arise when we reflect on the nature of the scientific method and the knowledge it produces. He discusses whether fundamental philosophical questions about knowledge and reality might be answered by science, and considers in detail the debate between realists and antirealists about the extent of scientific knowledge. Along the way, central topics in philosophy of science, such as the demarcation of science from non-science, induction, confirmation and falsification, the relationship between theory and observation and relativism are all addressed. Important and complex current debates over underdetermination, inference to the best explanation and the implications of radical theory change are clarified and clearly explained for those new to the subject.

How does science work? Does it tell us what the world is “really” like? What makes it different from other ways of understanding the universe? In *Theory and Reality*, Peter Godfrey-Smith addresses these questions by taking the reader on a grand tour of more than a hundred years of debate about science. The result is a completely accessible introduction to the main themes of the philosophy of science. Examples and asides engage the beginning student, a glossary of terms explains key concepts, and suggestions for further reading are included at the end of each chapter. Like no other text in this field,

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Theory and Reality combines a survey of recent history of the philosophy of science with current key debates that any beginning scholar or critical reader can follow. The second edition is thoroughly updated and expanded by the author with a new chapter on truth, simplicity, and models in science.

The Handbook Philosophy of Technology and Engineering Sciences addresses numerous issues in the emerging field of the philosophy of those sciences that are involved in the technological process of designing, developing and making of new technical artifacts and systems. These issues include the nature of design, of technological knowledge, and of technical artifacts, as well as the toolbox of engineers. Most of these have thus far not been analyzed in general philosophy of science, which has traditionally but inadequately regarded technology as mere applied science and focused on physics, biology, mathematics and the social sciences.

- First comprehensive philosophical handbook on technology and the engineering sciences
- Unparalleled in scope including explorative articles
- In depth discussion of technical artifacts and their ontology
- Provides extensive analysis of the nature of engineering design
- Focuses in detail on the role of models in technology

Over the last forty years the philosophy of biology has emerged as an important sub-discipline of the philosophy of science. Covering some of science's



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most divisive topics, such as philosophical issues in genetics, it also encompasses areas where modern biology has increasingly impinged on traditional philosophical questions, such as free will, essentialism, and nature vs nurture. In this Very Short Introduction Samir Okasha outlines the core issues with which contemporary philosophy of biology is engaged. Offering a whistle-stop tour of the history of biology, he explores key ideas and paradigm shifts throughout the centuries, including areas such as the theory of evolution by natural selection; the concepts of function and design; biological individuality; and the debate over adaptationism. Throughout Okasha makes clear the relevance of biology for understanding human beings, human society, and our place in the natural world, and the importance of engaging with these issues. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

For many, the two key thinkers about science in the twentieth century are Thomas Kuhn and Karl Popper, and one of the key questions in contemplating science is how to make sense of

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theory change. In *Creatively Undecided*, philosopher Menachem Fisch defends a new way to make sense of the rationality of scientific revolutions. He argues, loosely following Kuhn, for a strong notion of the framework dependency of all scientific practice, while at the same time he shows how such frameworks can be deemed the possible outcomes of keen rational deliberation along Popperian lines. Fisch's innovation is to call attention to the importance of ambiguity and indecision in scientific change and advancement. Specifically, he backs the problem up, looking not at how we might communicate rationally across an already existing divide but at the rational incentive to create an alternative framework in the first place. *Creatively Undecided* will be essential reading for philosophers of science, and its vivid case study in Victorian mathematics will draw in historians.

Nancy Cartwright is one of the most distinguished and influential contemporary philosophers of science. Despite the profound impact of her work, there is neither a systematic exposition of Cartwright's philosophy of science nor a collection of articles that contains in-depth discussions of the major themes of her philosophy. This book is devoted to a critical assessment of Cartwright's philosophy of science and contains contributions from Cartwright's champions and critics. Broken into three parts, the book begins by addressing

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Cartwright's views on the practice of model building in science and the question of how models represent the world before moving on to a detailed discussion of methodologically and metaphysically challenging problems. Finally, the book addresses Cartwright's original attempts to clarify profound questions concerning the metaphysics of science. With contributions from leading scholars, such as Ronald N. Giere and Paul Teller, this unique volume will be extremely useful to philosophers of science the world over.

Philosophy of Science: A Unified Approach combines a general introduction to philosophy of science with an integrated survey of all its important subfields. As the book's subtitle suggests, this excellent overview is guided methodologically by "a unified approach" to philosophy of science: behind the diversity of scientific fields one can recognize a methodological unity of the sciences. This unity is worked out in this book, revealing all the while important differences between subject areas. Structurally, this comprehensive book offers a two-part approach, which makes it an excellent introduction for students new to the field and a useful resource for more advanced students. Each chapter is divided into two sections. The first section assumes no foreknowledge of the subject introduced, and the second section builds upon the first by bringing into the conversation more

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advanced, complementary topics. Definitions, key propositions, examples and figures overview all of the core material. At the end of every chapter there are selected readings and exercises (with solutions at the end of the book). The book also includes a comprehensive bibliography and an index.

*Current Controversies in Philosophy of Science* asks twelve philosophers to debate six questions that are driving contemporary work in this area of philosophy. The questions are: I. Are Boltzmann Brains Bad? II. Does Mathematical Explanation Require Mathematical Truth? III. Does Quantum Mechanics Suggest Spacetime is Nonfundamental? IV. Is Evolution Fundamental When It Comes to Defining Biological Ontology? V. Is Chance Ontologically Fundamental? VI. Are Sexes Natural Kinds? These debates explore the philosophical foundations of particular scientific disciplines, while also examining more general issues in the philosophy of science. The result is a book that's perfect for the advanced philosophy student, building up their knowledge of the foundations of the field and engaging with its cutting-edge questions. Preliminary descriptions of each chapter, annotated lists of further readings for each controversy, and study questions for each chapter help provide clearer and richer snapshots of active controversies for all readers.

Using formal logic, *Reconstructing the Past* seeks to clarify and resolve methodological issues that arise when

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biologists try to answer such questions as whether human beings are more closely related to chimps than they are to gorillas. It explores the case for considering the philosophical idea of simplicity/parsimony as a useful principle for evaluating taxonomic theories of evolutionary relationships. Bringing together philosophy, biology, and statistics, Sober builds a general framework for understanding the circumstances in which parsimony makes sense as a tool of phylogenetic inference. Elliott Sober is Professor of Philosophy at the University of Wisconsin, Madison, and the author of *The Nature of Selection*.

What is the origin of our universe? What are dark matter and dark energy? What is our role in the universe as human beings capable of knowledge? What makes us intelligent cognitive agents seemingly endowed with consciousness? Scientific research across both the physical and cognitive sciences raises fascinating philosophical questions.

*Philosophy and the Sciences For Everyone* introduces these questions and more. It begins by asking what good is philosophy for the sciences before examining the following questions: The origin of our universe Dark matter and dark energy Anthropic reasoning in philosophy and cosmology Evolutionary theory and the human mind What is consciousness? Intelligent machines and the human brain Embodied Cognition. Each chapter includes an introduction, summary and study questions and there is a glossary of technical terms. Designed to be used on the corresponding *Philosophy and the Sciences* online course offered by the University of Edinburgh this book is also a superb introduction to central topics in philosophy of science and popular science.

A masterful survey of the history of Marxist philosophy of science Sheehan retraces the development of a Marxist philosophy of science through detailed and highly readable

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accounts of the debates that shaped it. Skilfully deploying a large cast of characters, Sheehan shows how Marx and Engel's ideas on the development and structure of natural science had a crucial impact on the work of early twentieth-century natural philosophers, historians of science, and natural scientists. With a new afterword by the author. Winner of the 2018 Choice Award for Outstanding Academic Title! PRAISE FOR PREVIOUS EDITIONS "This is a brilliantly clear introduction (and indeed reframing) of the history and philosophy of science in terms of worldviews and their elements.... In addition, the book is incredibly well-informed from both a scientific and philosophical angle. Highly recommended." Scientific and Medical Network "Unlike many other introductions to philosophy of science, DeWitt's book is at once historically informative and philosophically thorough and rigorous. Chapter notes, suggested readings, and references enhance its value." Choice "Written in clear and comprehensible prose and supplemented by effective diagrams and examples, Worldviews is an ideal text for anyone new to the history and philosophy of science. As the reader will come to find out, DeWitt is a gifted writer with the unique ability to break down complex and technical concepts into digestible parts, making Worldviews a welcoming and not overwhelming book for the introductory reader." History and Philosophy of the Life Sciences, vol. 28(2) Now in its third edition, Worldviews: An Introduction to the History and Philosophy of Science strengthens its reputation as the most accessible and teachable introduction to the history and philosophy of science on the market. Geared toward engaging undergraduates and those approaching the history and philosophy of science for the first time, this intellectually-provocative volume takes advantage of its author's extensive teaching experience, parsing complex ideas using straightforward and sensible examples drawn from the

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physical sciences. Building on the foundations which earned the book its critical acclaim, author Richard DeWitt considers fundamental issues in the philosophy of science through the historical worldviews that influenced them, charting the evolution of Western science through the rise and fall of dominant systems of thought. Chapters have been updated to include discussion of recent findings in quantum theory, general relativity, and evolutionary theory, and two new chapters exclusive to the third edition enrich its engagement with radical developments in contemporary science. At a time in modern history when the nature of truth, fact, and reality seem increasingly controversial, the third edition of *Worldviews* presents complex concepts with clarity and verve, and prepares inquisitive minds to engage critically with some of the most exciting questions in the philosophy of science. This volume showcases the best of recent research in the philosophy of science. A compilation of papers presented at the EPSA 13, it explores a broad distribution of topics such as causation, truthlikeness, scientific representation, gender-specific medicine, laws of nature, science funding and the wisdom of crowds. Papers are organised into headings which form the structure of the book. Readers will find that it covers several major fields within the philosophy of science, from general philosophy of science to the more specific philosophy of physics, philosophy of chemistry, philosophy of the life sciences, philosophy of psychology, and philosophy of the social sciences and humanities, amongst others. This volume provides an excellent overview of the state of the art in the philosophy of science, as practiced in different European countries and beyond. It will appeal to researchers with an interest in the philosophical underpinnings of their own discipline, and to philosophers who wish to explore the latest work on the themes explored.

Well-being, happiness and quality of life are now established

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objects of social and medical research. Does this science produce knowledge that is properly about well-being? What sort of well-being? The definition and measurement of these objects rest on assumptions that are partly normative, partly empirical and partly pragmatic, producing a great diversity of definitions depending on the project and the discipline. This book, written from the perspective of philosophy of science, formulates principles for the responsible production and interpretation of this diverse knowledge. Traditionally, philosophers' goal has been a single concept of well-being and a single theory about what it consists in. But for science this goal is both unlikely and unnecessary. Instead the promise and authority of the science depends on it focusing on the well-being of specific kinds of people in specific contexts. Skeptical arguments notwithstanding, this contextual well-being can be measured in a valid and credible way - but only if scientists broaden their methods to make room for normative considerations and address publicly and inclusively the value-based conflicts that inevitably arise when a measure of well-being is adopted. The science of well-being can be normative, empirical and objective all at once, provided that we line up values to science and science to values.

By combining excerpts from key historical writings with commentary by experts, *Philosophy of Science: An Historical Anthology* provides a comprehensive history of the philosophy of science from ancient to modern times. Provides a comprehensive history of the philosophy of science, from antiquity up to the 20th century Includes extensive commentary by scholars putting the selected writings in historical context and pointing out their interconnections Covers areas rarely seen in philosophy of science texts, including the philosophical dimensions of biology, chemistry, and geology Designed to be accessible to both



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undergraduates and graduate students

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