
Philosophy Of Science A Very Short Introduction

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Philosophy of Science

A Very Short Introduction *Oxford University Press*

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 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.

Philosophy of Science: Very Short Introduction *Oxford University Press*

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Understanding Philosophy of Science *Routledge*

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 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.

Philosophy of Science

A Unified Approach *Routledge*

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 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.

Philosophy of Physics: A Very Short Introduction *Oxford University Press*

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 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.

Philosophy of Biology *Oxford University Press, USA*

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

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.

Computational Philosophy of Science *MIT Press*

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.

The Philosophy of Science *Psychology 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 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.

Philosophy of Biology: A Very Short Introduction *Oxford University Press*

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General Philosophy of Science: Focal Issues *Elsevier*

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 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 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

Philosophy of Science for Scientists *Springer*

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 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.

Theory and Reality

An Introduction to the Philosophy of Science, Second Edition *University of Chicago Press*

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, *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 History and Philosophy of Science *Bloomsbury Publishing*

The History and Philosophy of Science: A Reader brings together seminal texts from antiquity to the end of the nineteenth century and makes them accessible in one volume for the first time. With readings from Aristotle, Aquinas, Copernicus, Galileo, Descartes, Newton, Lavoisier, Linnaeus, Darwin, Faraday, and Maxwell, it analyses and discusses major classical, medieval and modern texts and figures from the natural sciences. Grouped by topic to clarify the development of methods and disciplines and the unification of

theories, each section includes an introduction, suggestions for further reading and end-of-section discussion questions, allowing students to develop the skills needed to: § read, interpret, and critically engage with central problems and ideas from the history and philosophy of science § understand and evaluate scientific material found in a wide variety of professional and popular settings § appreciate the social and cultural context in which scientific ideas emerge § identify the roles that mathematics plays in scientific inquiry

Featuring primary sources in all the core scientific fields - astronomy, physics, chemistry, and the life sciences - *The History and Philosophy of Science: A Reader* is ideal for students looking to better understand the origins of natural

science and the questions asked throughout its history. By taking a thematic approach to introduce influential assumptions, methods and answers, this reader illustrates the implications of an impressive range of values and ideas across the history and philosophy of Western science.

Philosophy of Science for Biologists

Cambridge University Press

A short and accessible introduction to philosophy of science for students and researchers across the life sciences.

The Logic in Philosophy of Science

Cambridge University Press

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 Lwenheim-Sklem 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.

Metaphysics and the Philosophy of Science

New Essays *Oxford University Press*

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 ("scientistic" 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, 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.

Philosophy of Physics *Elsevier*

The ambition of this volume is twofold: to provide a comprehensive overview of

the field and to serve as an indispensable reference work for anyone who wants to work in it. For example, any philosopher who hopes to make a contribution to the topic of the classical-quantum correspondence will have to begin by consulting Klaas Landsman's chapter. The organization of this volume, as well as the choice of topics, is based on the conviction that the important problems in the philosophy of physics arise from studying the foundations of the fundamental theories of physics. It follows that there is no sharp line to be drawn between philosophy of physics and physics itself. Some of the best work in the philosophy of physics is being done by physicists, as witnessed by the fact that several of the contributors to the volume are theoretical physicists:

viz., Ellis, Emch, Harvey, Landsman, Rovelli, 't Hooft, the last of whom is a Nobel laureate. Key features - Definitive discussions of the philosophical implications of modern physics - Masterly expositions of the fundamental theories of modern physics - Covers all three main pillars of modern physics: relativity theory, quantum theory, and thermal physics - Covers the new sciences grown from these theories: for example, cosmology from relativity theory; and quantum information and quantum computing, from quantum theory - Contains special Chapters that address crucial topics that arise in several different theories, such as symmetry and determinism - Written by very distinguished theoretical physicists, including a Nobel Laureate, as well as by

philosophers - Definitive discussions of the philosophical implications of modern physics - Masterly expositions of the fundamental theories of modern physics - Covers all three main pillars of modern physics: relativity theory, quantum theory, and thermal physics - Covers the new sciences that have grown from these theories: for example, cosmology from relativity theory; and quantum information and quantum computing, from quantum theory - Contains special Chapters that address crucial topics that arise in several different theories, such as symmetry and determinism - Written by very distinguished theoretical physicists, including a Nobel Laureate, as well as by philosophers

Philosophy and the Sciences for

Everyone *Routledge*

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.

An Introduction to the Philosophy of Science *Cambridge University Press*

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

Philosophy of Science

From Explanation to Justification

Transaction Publishers

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 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.

Philosophy of Information *Elsevier*

Information is a recognized fundamental notion across the sciences and humanities, which is crucial to understanding physical computation, communication, and human cognition. The Philosophy of Information brings together the most important perspectives on information. It includes major technical approaches, while also setting out the historical backgrounds of information as well as its contemporary

role in many academic fields. Also, special unifying topics are high-lighted that play across many fields, while we also aim at identifying relevant themes for philosophical reflection. There is no established area yet of Philosophy of Information, and this Handbook can help shape one, making sure it is well grounded in scientific expertise. As a side benefit, a book like this can facilitate contacts and collaboration among diverse academic milieus sharing a common interest in information.

- First overview of the formal and technical issues involved in the philosophy of information
- Integrated presentation of major mathematical approaches to information, from computer science, information theory, and logic
- Interdisciplinary themes across the

traditional boundaries of natural sciences, social sciences, and humanities.

A Philosophy for the Science of Well-Being *Oxford University Press*

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

The Philosophy of Science

A Companion *Oxford University Press*

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 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.

The Routledge Companion to Philosophy of Science *Routledge*

The Routledge Companion to Philosophy of Science is an indispensable reference source and guide to the major themes, debates, problems and topics in philosophy of science. It contains sixty-two specially commissioned entries by a leading team of international contributors. Organized into four parts it covers: historical and philosophical context debates concepts the individual sciences. The Routledge Companion to Philosophy of Science addresses all of the essential topics.

Philosophy of Chemistry *Elsevier*

Philosophy of Chemistry investigates the foundational concepts and methods of chemistry, the science of the nature of substances and their transformations. This groundbreaking collection, the most thorough treatment of the philosophy of chemistry ever published, brings together philosophers, scientists and historians to map out the central topics in the field. The 33 articles address the history of the philosophy of chemistry and the philosophical importance of some central figures in the history of chemistry; the nature of chemical substances; central chemical concepts and methods, including the chemical bond, the periodic table and reaction mechanisms; and chemistry's relationship to other disciplines such as physics, molecular biology, pharmacy

and chemical engineering. This volume serves as a detailed introduction for those new to the field as well as a rich source of new insights and potential research agendas for those already engaged with the philosophy of chemistry. Provides a bridge between philosophy and current scientific findings
Encourages multi-disciplinary dialogue
Covers theory and applications

Philosophy of Technology and Engineering Sciences *Elsevier*

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

Introduction to the Philosophy of Science *Oxford University Press on Demand*

This book is a balanced and up-to-date introduction to the philosophy of science. It covers all the main topics in the area, as well as introducing the student to the moral and social reality of science. The author's style is free from jargon, and although he makes use of scientific examples, these should be intelligible to those without much scientific background. At the same time the questions he raises are not merely abstract, so the book will be of interest and concern to scientists as well as philosophers. The author discusses the growth of knowledge of science, the status of scientific theories and their relationship to observational data, the

extent to which scientific theories rest on unprovable paradigms, and the nature of scientific explanations. In later chapters he considers probability, scientific reductionism, the relationship between science and technology, and the relationship between scientific and other values.

Philosophy of Science Today *Oxford University Press*

A state-of-the-art guide to the fast-developing area of the philosophy of science.

Worldviews

An Introduction to the History and Philosophy of Science *John Wiley & Sons*

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 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.

Philosophy of Statistics *Elsevier*

Statisticians and philosophers of science have many common interests but restricted communication with each other. This volume aims to remedy these shortcomings. It provides state-of-the-art research in the area of philosophy of statistics by encouraging numerous experts to communicate with one another without feeling “restricted by their disciplines or thinking “piecemeal in their treatment of issues. A second

goal of this book is to present work in the field without bias toward any particular statistical paradigm. Broadly speaking, the essays in this Handbook are concerned with problems of induction, statistics and probability. For centuries, foundational problems like induction have been among philosophers' favorite topics; recently, however, non-philosophers have increasingly taken a keen interest in these issues. This volume accordingly contains papers by both philosophers and non-philosophers, including scholars from nine academic disciplines. Provides a bridge between philosophy and current scientific findings Covers theory and applications Encourages multi-disciplinary dialogue

The Philosophy of Science and Technology Studies *Routledge*

As the field of Science and Technology Studies (STS) has become more established, it has increasingly hidden its philosophical roots. While the trend is typical of disciplines striving for maturity, Steve Fuller, a leading figure in the field, argues that STS has much to lose if it abandons philosophy. In his characteristically provocative style, he offers the first sustained treatment of the philosophical foundations of STS and suggests fruitful avenues for further research. With stimulating discussions of the Science Wars, the Intelligent Design Theory controversy, and theorists such as Donna Haraway and Bruno Latour, Philosophy of Science and Technology Studies is required reading for students

and scholars in STS and the philosophy of science.

Philosophy of Science

Between the Natural Sciences, the Social Sciences, and the Humanities *Springer*

This broad and insightful book presents current scholarship in important subfields of philosophy of science and addresses an interdisciplinary and multidisciplinary readership. It groups carefully selected contributions into the four fields of I) philosophy of physics, II) philosophy of life sciences, III) philosophy of social sciences and values in science, and IV) philosophy of mathematics and formal modeling. Readers will discover research papers by

Paul Hoyningen-Huene, Keizo Matsubara, Kian Salimkhani, Andrea Reichenberger, Anne Sophie Meincke, Javier Suárez, Roger Deulofeu, Ludger Jansen, Peter Hucklenbroich, Martin Carrier, Elizaveta Kostrova, Lara Huber, Jens Harbecke, Antonio Piccolomini d'Aragona and Axel Gelfert. This collection fosters dialogue between philosophers of science working in different subfields, and brings readers the finest and latest work across the breadth of the field, illustrating that contemporary philosophy of science has successfully broadened its scope of reflection. It will interest and inspire a wide audience of philosophers as well as scholars of the natural sciences, social sciences and the humanities. The volume shares selected contributions from the prestigious second triennial

conference of the German Society for Philosophy of Science/ Gesellschaft für Wissenschaftsphilosophie (GWP.2016, March 8, 2016 – March 11, 2016).

The English Language

A Very Short Introduction *Oxford University Press*

First published in hardback as *How English became English*, 2016.

Philosophy of Science

An Historical Anthology *Wiley-Blackwell*

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 undergraduates and graduate students

Evolution and Rationality

Decisions, Co-operation and Strategic Behaviour *Cambridge University Press*

This volume explores from multiple perspectives the subtle and interesting relationship between the theory of rational choice and Darwinian evolution. In rational choice theory, agents are assumed to make choices that maximize their utility; in evolution, natural selection 'chooses' between phenotypes according to the criterion of fitness maximization. So there is a parallel between utility in rational choice theory and fitness in Darwinian theory. This conceptual link between fitness and utility is mirrored by the interesting parallels between formal models of evolution and rational choice. The essays in this volume, by leading philosophers, economists, biologists and psychologists, explore the connection between evolution and rational choice in a

number of different contexts, including choice under uncertainty, strategic decision making and pro-social behaviour. They will be of interest to students and researchers in philosophy of science, evolutionary biology, economics and psychology.

Philosophical Method: a Very Short Introduction *Oxford University Press, USA*

What are philosophers trying to achieve? How can they succeed? Does philosophy make progress? Is it in competition with science, or doing something completely different, or neither? Timothy Williamson tackles some of the key questions surrounding philosophy in new and provocative ways, showing how philosophy begins in common sense

curiosity, and develops through our capacity to dispute rationally with each other. Discussing philosophy's ability to clarify our thoughts, he explains why such clarification depends on the development of philosophical theories, and how those theories can be tested by imaginative thought experiments, and compared against each other by standards similar to those used in the natural and social sciences. He also shows how logical rigour can be understood as a way of enhancing the explanatory power of philosophical theories. Drawing on the history of philosophy to provide a track record of philosophical thinking's successes and failures, Williams overturns widely held dogmas about the distinctive nature of philosophy in comparison to the

sciences, demystifies its methods, and considers the future of the discipline. From thought experiments, to deduction, to theories, this Very Short Introduction will cause you to totally rethink what philosophy is. 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. Previously published in hardback as *Doing Philosophy*

New Directions in the Philosophy of Science *Springer*

This volume sheds light on still unexplored issues and raises new questions in the main areas addressed by the philosophy of science. Bringing together selected papers from three main events, the book presents the most advanced scientific results in the field and suggests innovative lines for further investigation. It explores how discussions on several notions of the philosophy of science can help different scientific disciplines in learning from each other. Finally, it focuses on the relationship between Cambridge and Vienna in twentieth century philosophy of science. The areas examined in the book are: formal methods, the philosophy of the natural and life sciences, the cultural and social sciences, the physical sciences and the

history of the philosophy of science.

Nancy Cartwright's Philosophy of Science *Routledge*

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 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.

What is Philosophy of Science? *John Wiley & Sons*

Philosophy of science puts science itself under the microscope: What exactly is science? How do its explanations of the world differ from those of other subjects,

including so-called “pseudo-sciences”? How should we understand and evaluate scientific methods? What, if anything, can science tell us about the nature of physical reality? Dean Rickles guides beginners through the central topics in philosophy of science. He looks at the origins and evolution of the field, the issues that arise when distinguishing between science and non-science, the concepts of logic and associated problems, scientific realism and anti-realism, and the nature of scientific models and representing. Rickles brings the subject to sparkling life with a user-friendly tone and rich, real-world examples. What is Philosophy of Science? is the must-have primer for students getting to grips with this broad-ranging and important topic.