Philosophy Of Biology A Contemporary Introduction

Philosophy of Biology-Alexander Rosenberg 2008 Is life a purely physical process? What is human nature? Which of our traits is essential to us? In this volume, Daniel McShea and Alex Rosenberg – a biologist and a philosopher, respectively – join forces to create a new gateway to the philosophy of biology; making the major issues accessible and relevant to biologists and philosophers alike. Exploring concepts such as supervenience; the controversies about genocentrism and genetic determinism; and the debate about major transitions central to contemporary thinking about macroevolution; the authors lay out the broad terms in which we should assess the impact of biology on human capacities, social institutions and ethical values.

Contemporary Debates in Philosophy of Biology-Francisco J. Ayala 2009-11-19 This collection of specially commissioned essays puts top scholarshead to head to debate the central issues in the lively and fastgrowing field of philosophy of biology Brings together original essays on ten of the most hotlydebated questions in philosophy of biology Lively head-to-head debate format sharply defines the issuesand paves the way for further discussion Includes coverage of the new and vital area of evolutionarydevelopmental biology, as well as the concept of a unified species,the role of genes in selection, the differences between micro- andmacro-evolution, and much more Each section features an introduction to the topic as well assuggestions for further reading Offers an accessible overview of this fast-growing and dynamicfield, whilst also capturing the imagination of professionalphilosophers and biologists

Philosophy of Biology-Peter Godfrey-Smith 2016-09-06 This is a concise, comprehensive, and accessible introduction to the philosophy of biology written by a leading authority on the subject. Geared to philosophers, biologists, and students of both, the book provides sophisticated and innovative coverage of the central topics and many of the latest developments in the field. Emphasizing connections between biological theories and other areas of philosophy, and carefully explaining both philosophical and biological terms, Peter Godfrey-Smith discusses the relation between philosophy and science; examines the role of laws, mechanistic explanation, and idealized models in biological theories; describes evolution by natural selection; and assesses attempts to extend Darwin's mechanism to explain changes in ideas, culture, and other phenomena. Further topics include functions and teleology, individuality and organisms, species, the tree of life, and human nature. The book closes with detailed, cutting-edge treatments of the evolution of cooperation, of information in biology, and of the role of communication in living systems at all scales. Authoritative and up-to-date, this is an essential guide for anyone interested in the

important philosophical issues raised by the biological sciences.

Philosophy of Biology-Alex Rosenberg 2009-05-04 By combining excerpts from key historical writings with editors' introductions and further reading material, Philosophy of Biology: An Anthology offers a comprehensive, accessible, and up-to-date collection of the field's most significant works. Addresses central questions such as 'What is life?' and 'How did it begin?', and the most current research and arguments on evolution and developmental biology Editorial notes throughout the text define, clarify, and qualify ideas, concepts and arguments Includes material on evolutionary psychology and evolutionary developmental biology not found in other standard philosophy of biology anthologies Further reading material assists novices in delving deeper into research in philosophy of biology

Philosophy of Science for Biologists-Kostas Kampourakis 2020-07-31 A short and accessible introduction to philosophy of science for students and researchers across the life sciences.

Philosophy of Biology-Samir Okasha 2019-11-07 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.

The Philosophy of Biology-Kostas Kampourakis 2013-06-18 This book brings together for the first time philosophers of biology to write about some of the most central concepts and issues in their field from the perspective of biology education. The chapters of the book cover a variety of topics ranging from traditional ones, such as biological explanation, biology and religion or biology and ethics, to contemporary ones, such as genomics, systems biology or evolutionary developmental biology. Each of the 30 chapters covers the respective philosophical literature in detail and makes specific suggestions for biology education. The aim of this book is to inform biology educators, undergraduate and graduate students in biology and related fields, students in teacher training programs, and

curriculum developers about the current state of discussion on the major topics in the philosophy of biology and its implications for teaching biology. In addition, the book can be valuable to philosophers of biology as an introductory text in undergraduate and graduate courses.

Philosophy of Science-Yuri Balashov 2002 This comprehensive anthology draws together writings by leading philosophers of science and will prove invaluable for any philosophy of science course.

The Cambridge Companion to the Philosophy of Biology-David L. Hull 2007-10-01 The philosophy of biology is one of the most exciting new areas in the field of philosophy and one that is attracting much attention from working scientists. This Companion, edited by two of the founders of the field, includes newly commissioned essays by senior scholars and up-and-coming younger scholars who collectively examine the main areas of the subject - the nature of evolutionary theory, classification, teleology and function, ecology, and the problematic relationship between biology and religion, among other topics. Up-to-date and comprehensive in its coverage, this unique volume will be of interest not only to professional philosophers but also to students in the humanities and researchers in the life sciences and related areas of inquiry.

Processes of Life-John Dupré 2012-01-26 John Dupré explores recent revolutionary developments in biology and considers their relevance for our understanding of human nature and society. He reveals how the advance of genetic science is changing our view of the constituents of life, and shows how an understanding of microbiology will overturn standard assumptions about the living world.

The Nature of Life-Mark A. Bedau 2010-09-30 Bringing together the latest scientific advances and some of the most enduring subtle philosophical puzzles and problems, this book collects original historical and contemporary sources to explore the wide range of issues surrounding the nature of life. Selections ranging from Aristotle and Descartes to Sagan and Dawkins are organised around four broad themes covering classical discussions of life, the origins and extent of natural life, contemporary artificial life creations and the definition and meaning of 'life' in its most general form. Each section is preceded by an extensive introduction connecting the various ideas discussed in individual chapters and providing helpful background material for understanding them. With its interdisciplinary perspective, this fascinating collection is essential reading for scientists and philosophers interested in astrobiology, synthetic biology and the philosophy of life.

Biological Classification-Richard A. Richards 2016-09-08 This book is a comprehensive introduction to the philosophical foundations and development of modern biological classification.

Genetics and Philosophy-Paul Griffiths 2013-04-18 In the past century, nearly all of the biological sciences have been directly affected by discoveries and developments in genetics, a fast-evolving subject with important theoretical dimensions. In this rich and accessible book, Paul Griffiths and Karola Stotz show how the concept of the gene has evolved and diversified across the many fields that make up modern biology. By examining the molecular biology of the 'environment', they situate genetics in the developmental biology of whole organisms, and reveal how the molecular biosciences have undermined the nature/nurture distinction. Their discussion gives full weight to the revolutionary impacts of molecular biology, while rejecting 'genocentrism' and 'reductionism', and brings the topic right up to date with the philosophical implications of the most recent developments in genetics. Their book will be invaluable for those studying the philosophy of biology, genetics and other life sciences.

Philosophy of Science-Alex Rosenberg 2019-11-26 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.

Discovering Cell Mechanisms-William Bechtel 2006 Bechtel emphasises how mechanisms were discovered by cell biologists and the instruments that made these inquiries possible.

Philosophy of Physics-Tim Maudlin 2015-05-26 This concise book introduces nonphysicists to the core philosophical issues surrounding the nature and structure of space and time, and is also an ideal resource for physicists interested in the conceptual foundations of space-time theory. Tim Maudlin's broad historical overview examines Aristotelian and Newtonian accounts of space and time, and traces how Galileo's conceptions of relativity and space-time led to Einstein's special and general theories of relativity. Maudlin explains special relativity with enough detail to solve concrete physical problems while presenting general relativity in more qualitative terms. Additional topics include the Twins Paradox, the physical aspects of the Lorentz-FitzGerald contraction, the constancy of the speed of light, time travel, the direction of time, and more. Introduces nonphysicists to the philosophical foundations of space-time theory Provides a broad historical overview, from Aristotle to Einstein Explains special relativity geometrically, emphasizing the intrinsic structure of

space-time Covers the Twins Paradox, Galilean relativity, time travel, and more Requires only basic algebra and no formal knowledge of physics

Sex and Death-Kim Sterelny 2012-04-02 Is the history of life a series of accidents or a drama scripted by selfish genes? Is there an "essential" human nature, determined at birth or in a distant evolutionary past? What should we conserve—species, ecosystems, or something else? Informed answers to questions like these, critical to our understanding of ourselves and the world around us, require both a knowledge of biology and a philosophical framework within which to make sense of its findings. In this accessible introduction to philosophy of biology, Kim Sterelny and Paul E. Griffiths present both the science and the philosophical context necessary for a critical understanding of the most exciting debates shaping biology today. The authors, both of whom have published extensively in this field, describe the range of competing views—including their own—on these fascinating topics. With its clear explanations of both biological and philosophical concepts, Sex and Death will appeal not only to undergraduates, but also to the many general readers eager to think critically about the science of life.

Aristotle's Philosophy of Biology-James G. Lennox 2001 The papers collected in this 2001 volume focus on Aristotle's systematic investigation of animals.

The Problem of Animal Generation in Early Modern Philosophy-Justin E. H. Smith 2006-05-22 In this volume Smith examines the early modern science of generation, which included the study of animal conception, heredity, and fetal development. Analyzing how it influenced the contemporary treatment of traditional philosophical questions, it also demonstrates how philosophical pre-suppositions about mechanism, substance, and cause informed the interpretations offered by those conducting empirical research on animal reproduction. Composed of essays written by an international team of leading scholars, the book offers a fresh perspective on some of the basic problems in early modern philosophy. It also considers how these basic problems manifested themselves within an area of scientific inquiry that had not previously received much consideration by historians of philosophy.

Philosophy of Biology-Michael Ruse 1989

Emergence-Paul Humphreys 2016-10-14 Interest in emergence amongst philosophers and scientists has grown in recent years, yet the concept continues to be viewed with skepticism by many. In this book, Paul Humphreys argues that many of the problems arise from a long philosophical tradition that is overly committed to synchronic reduction and has been overly focused on problems in philosophy of mind. He develops a novel account of diachronic ontological emergence called transformational emergence, shows that it is free of the problems raised against synchronic accounts, shows that there are plausible examples of transformational emergence within physics and chemistry, and argues that the central ideas fit into a well established historical tradition of emergence that includes John Stuart Mill,

G.E. Moore, and C.D. Broad. The book also provides a comprehensive assessment of current theories of emergence and so can be used as a way into what is by now a very large literature on the topic. It places theories of emergence within a plausible classification, provides criteria for emergence, and argues that there is no single unifying account of emergence. Reevaluations of related topics in metaphysics are provided, including fundamentality, physicalism, holism, methodological individualism, and multiple realizability, among others. The relations between scientific and philosophical conceptions of emergence are assessed, with examples such as self-organization, ferromagnetism, cellular automata, and nonlinear systems being discussed. Although the book is written for professional philosophers, simple and intuitively accessible examples are used to illustrate the new concepts.

French Studies in the Philosophy of Science-Anastasios Brenner 2009-04-14 Having examined previous volumes of the Boston Studies series devoted to different countries, and having discussed the best way to present contemporary research in France, we have arrived at a careful selection of 15 participants, including the organizers. Our aim is to bring together philosophers and practicing scientist from the major institutions of the country, both universities and research centers. The areas of research represented here cover a wide spectrum of sciences, from mathematics and physics to the life sciences, as well as linguistics and economics. This selection is a showcase of French philosophy of science, illustrating the different methods employed: logico-linguistic analysis, rational reconstruction and historical inquiry. These participants have the ability to relate their research both to the French tradition and current discussions on the international scene. Also included is a substantial historical introduction, explaining the development of philosophy of science in France, the various schools of thought and methods as well as the major concepts and their significance.

Chance and Necessity-Jacques Monod 1997 Change and necessity is a statement of Darwinian natural selection as a process driven by chance necessity, devoid of purpose or intent.

Philosophy Of Biology-Elliott Sober 2018-03-05 Perhaps because of it implications for our understanding of human nature, recent philosophy of biology has seen what might be the most dramatic work in the philosophies of the ?special? sciences. This drama has centered on evolutionary theory, and in the second edition of this textbook, Elliott Sober introduces the reader to the most important issues of these developments. With a rare combination of technical sophistication and clarity of expression, Sober engages both the higher level of theory and the direct implications for such controversial issues as creationism, teleology, nature versus nurture, and sociobiology. Above all, the reader will gain from this book a firm grasp of the structure of evolutionary theory, the evidence for it, and the scope of its explanatory significance.

Philosophy of Science-Alex Rosenberg 2011-02-10 Any serious student attempting to

better understand the nature, methods and justification of science will value Alex Rosenberg's updated and substantially revised Third Edition of Philosophy of Science: A Contemporary Introduction. Weaving together lucid explanations and clear analyses, the volume is a much-used, thematically oriented introduction to the field. New features of the Third Edition include more coverage of the history of the philosophy of science, more fully developed material on the metaphysics of causal and physical necessity, more background on the contrast between empiricism and rationalism in science, and new material on the structure of theoretical science (with expanded coverage of Newtonian and Darwinian theories and models) and the realism/antirealism controversy. Rosenberg also divides the Third Edition into fifteen chapters, aligning each chapter with a week in a standard semester-long course. Updated Discussion Questions, Glossary, Bibliography and Suggested Readings lists at the end of each chapter will make the Third Edition indispensable, either as a comprehensive stand-alone text or alongside the many wide-ranging collections of articles and book excerpts currently available. Read our interview with Alex Rosenberg, What exactly is philosophy of science – and why does it matter? here: www.routledge.com/u/alexrosenberg

The Metaphysics of Biology-John Dupré 2021-06-03 This Element is an introduction to the metaphysics of biology, a very general account of the nature of the living world. The first part of the Element addresses more traditionally philosophical questions - whether biological systems are reducible to the properties of their physical parts, causation and laws of nature, substantialist and processualist accounts of life, and the nature of biological kinds. The second half will offer an understanding of important biological entities, drawing on the earlier discussions. This division should not be taken too seriously, however: the topics in both parts are deeply interconnected. Although this does not claim to be a scientific work, it does aim to be firmly grounded in our best scientific knowledge; it is an exercise in naturalistic metaphysics. Its most distinctive feature is that argues throughout for a view of living systems as processes rather than things or, in the technical philosophical sense, substances.

Philosophy of Science-Alexander Rosenberg 2000 This user-friendly text covers key issues in the philosophy of science in an accessible and philosophically serious way. It will prove valuable to students studying philosophy of science as well as science students. Prize-winning author Alex Rosenberg explores the philosophical problems that science raises by its very nature and method. He skilfully demonstrates that scientific explanation, laws, causation, theory, models, evidence, reductionism, probability, teleology, realism and instrumentalism actually pose the same questions that Plato, Aristotle, Descartes, Hume, Kant and their successors have grappled with for centuries.

Nietzsche, Biology and Metaphor-Gregory Moore 2002-01-24 Nietzsche, Biology and Metaphor explores the German philosopher's response to the intellectual debates sparked by the publication of Charles Darwin's The Origin of Species. By examining the abundance of biological metaphors in Nietzsche's writings, Gregory Moore questions his recent reputation as an eminently subversive and (post-) modern thinker, and shows how deeply

Nietzsche was immersed in late nineteenth-century debates on evolution, degeneration and race. The first part of the book provides a detailed study and interpretation of Nietzsche's much disputed relationship to Darwinism. Uniquely, Moore also considers the importance of Nietzsche's evolutionary perspective for the development of his moral and aesthetic philosophy. The second part analyzes key themes of Nietzsche's cultural criticism - his attack on the Judaeo-Christian tradition, his diagnosis of the nihilistic crisis afflicting modernity and his anti-Wagnerian polemics - against the background of fin-de-siècle fears about the imminent biological collapse of Western civilization.

General Philosophy of Science: Focal Issues- 2007-07-18 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 clarfication 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 Niiniluto), 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

Beyond Mechanism-Brian G. Henning 2013-02-01 Pairing scientists and philosophers together, this book is an exploration of some of the new frontiers in biology (e.g., Emergence, Complex Systems, Biosemiotics, Symbiogenesis, Organic Selection, Epigenetics, Niche Construction, Teleodynamics, etc.). The chapters in this volume challenge the mechanistic metaphysic that is implicit in the reigning neo-Darwinist paradigm, point to more inclusive modes of thinking in relation to the nature of life, and contribute to the novel synthesis that is presently "in the air."

Canguilhem-Stuart Elden 2019-07-12 Georges Canguilhem (1904–95) was an influential historian and philosopher of science, as renowned for his teaching as for his writings. He is best known for his book The Normal and the Pathological, originally his doctoral thesis in medicine, but he also wrote a thesis in philosophy on the concept of the reflex, supervised by Gaston Bachelard. He was the sponsor of Michel Foucault's doctoral thesis on madness. However, his work extends far beyond what is suggested by his association with these thinkers. Canguilhem also produced a series of important works on the natural sciences, including studies of evolution, psychology, vitalism and mechanism, experimentation, monstrosity and disease. Stuart Elden discusses the whole of this important thinker's complex work, including recently rediscovered texts and archival materials. Canguilhem always approached questions historically, examining how it was that we came to a significant moment in time, outlining tensions, detours and paths not taken. The first comprehensive study in English, this book is a crucial guide for those coming to terms with Canguilhem's important contributions, and will appeal to researchers and students from a range of fields.

The Oxford Handbook of Philosophy of Biology-Michael Ruse 2008-07-10 The Oxford Handbook of Philosophy of Biology contains exciting new essays written to introduce the reader to one of the most vibrant areas of scholarship today. The handbook covers the history of the topic, moves through evolutionary theory, continues with discussions of molecular biology and ecology, and covers biology and ethics as well as biology and religion. There is no better way of learning about this dynamic subject than through the essays in this volume.

Philosophy of Behavioral Biology-Kathryn S. Plaisance 2011-10-05 This volume provides a broad overview of issues in the philosophy of behavioral biology, covering four main themes: genetic, developmental, evolutionary, and neurobiological explanations of behavior. It is both interdisciplinary and empirically informed in its approach, addressing philosophical issues that arise from recent scientific findings in biological research on human and non-human animal behavior. Accordingly, it includes papers by professional philosophers and philosophers of science, as well as practicing scientists. Much of the work in this volume builds on presentations given at the international conference, "Biological Explanations of Behavior: Philosophical Perspectives", held in 2008 at the Leibniz Universität Hannover in Germany. The volume is intended to be of interest to a broad range of audiences, which includes philosophers (e.g., philosophers of mind, philosophers of biology, and metaethicists), as well as practicing scientists, such as biologists or

psychologists whose interests relate to biological explanations of behavior.

Philosophy of Biology-Brian Garvey 2014-12-05 This major new series in the philosophy of science aims to provide a new generation of textbooks for the subject. The series will not only offer fresh treatments of core topics in the theory and methodology of scientific knowledge, but also introductions to newer areas of the discipline. Furthermore, the series will cover topics in current science that raise significant foundational issues both for scientific theory and for philosophy more generally. Biology raises distinct questions of its own not only for philosophy of science, but for metaphysics, epistemology and ethics. This comprehensive new textbook for a rapidly growing field of study provides students new to the subject with an up-to-date presentation of the key philosophical issues. Care is taken throughout to keep the technicalities accessible to the non-biologist but without sacrificing the philosophical subtleties. The first part of the book covers the philosophical challenges posed by evolution and evolutionary biology, beginning with Darwin's central argument in the Origin of the Species. Individual chapters cover natural selection, the selfish gene, alternative units of selection, developmental systems theory, adaptionism and issues in macroevolution. The second part of the book examines philosophical questions arising in connection with biological traits, function, nature and nurture, and biological kinds. The third part of the book examines metaphysical questions, biology's relation with the traditional concerns of philosophy of science, and how evolution has been introduced into epistemological debates. The final part considers the relevance of biology to questions about ethics, religion and human nature.

Philosophy Of Biology-Elliott Sober 1993-04-19 The philosophy of biology has recently seen some of the most dramatic activity among the philosophies of the “special” sciences. In this new textbook, Elliott Sober introduces the reader to the most important of these developments.Sober engages both the higher level of theory and the direct implications for such controversial issues as creationism, teleology, nature versus nurture, and sociobiology. Above all, the reader will gain from this book a firm grasp of the structure of evolutionary theory, the evidence for it, and the scope of its explanatory significance.

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Philosophy of Science-Samir Okasha 2016 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.

Biological Autonomy-Alvaro Moreno 2015-05-04 Since Darwin, Biology has been framed on the idea of evolution by natural selection, which has profoundly influenced the scientific and philosophical comprehension of biological phenomena and of our place in Nature. This book argues that contemporary biology should progress towards and revolve around an even more fundamental idea, that of autonomy. Biological autonomy describes living organisms as organised systems, which are able to self-produce and self-maintain as integrated entities, to establish their own goals and norms, and to promote the conditions of their existence through their interactions with the environment. Topics covered in this book include organisation and biological emergence, organisms, agency, levels of autonomy, cognition, and a look at the historical dimension of autonomy. The current development of scientific investigations on autonomous organisation calls for a theoretical and philosophical analysis. This can contribute to the elaboration of an original understanding of life - including human life - on Earth, opening new perspectives and enabling fecund interactions with other existing theories and approaches. This book takes up the challenge.

History And Philosophy Of Biology-Robert H Kretsinger 2015-04-29 History and Philosophy of Biology summarizes the major philosophical ideas that have attended the development of science in general and of biology in particular. The book then explores how the techniques and the concepts of the physical sciences have impacted biology. A reductionist approach to biology — anatomy, physiology, genetics — complements the study of evolution by natural selection and an ecological perspective. The final section of the book explores several examples of the influence of science on society, and of society on science.Each of 46 chapters of History and Philosophy of Biology has been or could be the topic of a major tome. The book is unique in that it explores the web of interactions among issues of philosophy, techniques and concepts of the physical sciences, fields of biology, and the diverse relationships between society and science.The book should appeal to readers of Scientific American or the New York Review of Books even if they are not trained biologists. It is a good text, or additional reading, for an advanced undergraduate course treating history and/or philosophy of biology or of science in general.

Biological Individuality-Scott Lidgard 2017-05-24 Individuals are things that everybody knows—or thinks they do. Yet even scholars who practice or analyze the biological sciences often cannot agree on what an individual is and why. One reason for this disagreement is that the many important biological individuality concepts serve very different purposes—defining, classifying, or explaining living structure, function, interaction, persistence, or evolution. Indeed, as the contributors to Biological Individuality reveal, nature is too messy for simple definitions of this concept, organisms too quirky in the diverse ways they reproduce, function, and interact, and human ideas about individuality too fraught with philosophical and historical meaning. Bringing together biologists, historians, and philosophers, this book provides a multifaceted exploration of biological individuality that identifies leading and less familiar perceptions of individuality both past and present, what they are good for, and in what contexts. Biological practice and theory recognize individuals at myriad levels of organization, from genes to organisms to symbiotic systems. We depend on these notions of individuality to address theoretical questions about multilevel natural selection and Darwinian fitness; to illuminate empirical questions about development, function, and ecology; to ground philosophical questions about the nature of organisms and causation; and to probe historical and cultural circumstances that resonate with parallel questions about the nature of society. Charting an interdisciplinary research agenda that broadens the frameworks in which biological individuality is discussed, this book makes clear that in the realm of the individual, there is not and should not be a direct path from biological paradigms based on model organisms through to philosophical generalization and historical reification.

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