Teaching About Evolution and the Nature of Science

The animals of Manor Farm have revolted and taken over. Upon the death of Old Major, pigs Snowball and Napoleon lead a revolt against Mr. Jones, driving him from the farm. The animals embrace the Seven Commandments of Animalism and life carries on, but they learn that a farm ruled by animals looks more human than ever. Intended as a critique of Stalinist-era Russia, Orwell's satirical novel Animal Farm is one of his greatest literary achievements. Animal Farm was chosen as one of Time magazine's 100 best English-language novels, and won a Retrospective Hugo Award in 1996. HarperPerennialClassics brings great works of literature to life in digital format, upholding the highest standards in ebook production and celebrating reading in all its forms. Look for more titles in the HarperPerennial Classics collection to build your digital library.

Climate Change 2013: The Physical Science Basis

The Listeners

This popular text has been updated to ensure that it continues to provide a current and comprehensive overview of the main Christian theologies of the twentieth and twenty-first centuries. Each chapter is written by a leading theologian and gives a clear picture of a particular movement, topic or individual. New and updated treatments of topics covered in earlier editions, with over half the chapters new to this edition or revised by new authors. New section singling out six classic theologians of the twentieth century. Expanded treatment of the natural sciences, gender, Roman Catholic theology since Vatican II, and African, Asian and Evangelical theologies. Completely new chapters on spirituality, pastoral theology, philosophical theology, postcolonial biblical interpretation, Pentecostal theology, Islam and Christian theology, Buddhist and Christian theology, and theology and film. As in previous editions, the text opens with a full introduction to modern theology. Epilogue discussing the present situation and prospects of Christian theology in the twenty-first century.

Swimming Against the Tide

This work of intellectual and cultural history seeks to understand the recurring connection of teaching with contradiction in some major texts of the European Middle Ages. It moves comfortably between patristic and monastic exegesis, the Paris schools of the twelfth and thirteenth centuries, and late medieval Spain; between Latin and vernacular, between religious and secular. It assimilates the methodologies of religious and erotic texts, thereby displaying the investment of each in the sensuality and analytical power of language. The book begins by exploring Christian exegesis, in which biblical contradiction is the textual incarnation of a Truth that is at once and paradoxically singular and multiple. Exegesis teaches us of the possibility of maintaining the truth in one biblical proposition and, equally and simultaneously, in its apparent opposite. Under the aegis of dialectic and the Aristotelian rule of non-contradiction, however, we are next taught to read either/or, and to resolve contradiction not through suspension and multiplicity, as in exegesis, but rather through a judgment that favors either one proposition or the other. The writers studied here are John of Salisbury, whose Metalogicon is an ostensibly moderate critique of the intellectual extremism of the School of Paris logicians, and Peter Abelard, in whose life and writing the forces of contradiction work with naming and illuminating violence. The book then considers the teaching-textuality of two great secular works of the Middle Ages, formed under the double instruction of the master disciplines of monastic exegesis and dialectic and under the tutelage of Ovid. Calling simultaneously on the both-and of exegesis and the either/or of dialectic, the teaching of these two texts is both biblical and worldly-impossibly, both at once, always in motion. The De Amore of Andreas Capellanus teaches two opposite propositions and commands that either one or the other must be chosen, yet in practice shows each proposition to be deeply embedded in the other. The concluding chapter turns from the Latin to the vernacular tradition to study one of the lesser-known examples of contradictory teaching, the fourteenth-century Libro de Buen Amor of Juan Ruiz, whose titular “good love” conflates the contrary things of spiritual and carnal love, while reminding readers that the difference between the two is urgently consequential.

Government Gazette

Medical Physics and Biomedical Engineering provides broad coverage appropriate for senior undergraduates and graduates in medical physics and biomedical engineering. Divided into two parts, the first part presents the underlying physics, electronics, anatomy, and physiology and the second part addresses practical applications. The structured approach means that later chapters build and broaden the material introduced in the opening chapters; for example, students can read chapters covering the introductory science of an area and then study the practical application of the topic. Coverage includes biophysics; imaging and noninvasive radiation and measurements; image formation techniques, processing, and analysis; safety issues; biomedical devices; mathematical and statistical techniques; physiological signals and responses; and respiratory and cardiovascular function and measurement. Where necessary, the authors provide references to the mathematical background and keep detailed derivations to a minimum. They give comprehensive references to junior undergraduate texts in physics, electronics, and life sciences in the bibliographies at the end of each chapter.

Émilie Du Châtelet and the Foundations of Physical Science

Medicine and Morality

This book takes a novel look at the topics of school mathematics--arithmetic, geometry, algebra, and calculus. In this stroll on the mathematical seashore we hope to find, quoting Newton, 'a smoother pebble or a prettier shell than ordinary' This book assembles a collection of mathematical pebbles that are important as well as beautiful.
The Value of Philosophy

I. The Greek school philosophy, with reference to physical science. II. The physical sciences in ancient Greece. III. Greek astronomy. IV. Physical science in the middle ages. V. Formal astronomy after the stationary period. VI. Mechanics, including fluid mechanics. VII. Physical astronomy. Additions to the 3rd ed

A central work in the history of physics, documenting experiments which led to the discovery of the electron.

Resources in Education

Contrary Things

The Fifth Assessment Report of the IPCC is the standard scientific reference on climate change for students, researchers and policy makers.

Medical Physics and Biomedical Engineering

Nature, Design, and Science

The Church Eclectic

Science Teaching Reconsidered

Following African American women who “swim against the tide” in the white male science education system.

The School Laboratory of Physical Science

Explaining the implications of quantum physics for the nature of reality, Shimon Malin traces strands of idealist thought from Plato and Plotinus through Whitehead to modern particle physics.

Notes on Recent Researches in Electricity and Magnetism

Goal Focused Positive Psychotherapy (GFPP) is the first comprehensive approach to strength-oriented therapy that fully incorporates positive psychology principles. This book provides instruction for therapists and students wishing to learn a strength-oriented mindset and the necessary skills. GFPP consists of four hallmarks: (1) formation of approach goals; (2) identification and use of client strengths; (3) promotion of positive emotions and experiences; and (4) building hope. Unique to psychotherapy, the theory of change uses Frederickson's Broaden-and-Build Theory of positive emotions. A three-year study is presented that provides evidence of GFPP's outcome effectiveness and GFPP's superiority in supporting therapists building therapeutic alliances with clients. The book describes the therapeutic techniques and positive psychology interventions including positive empathy, capitalization, best possible self, success-finding, encouragement, self-affirmation, mindfulness, miracle and scaling questions, and self-compassion. The primary emphasis of GFPP is to promote happiness, health, and well-being in clients, in contrast to the emphasis of traditional therapy approaches on problem symptom alleviation. The assumption is that clients who benefit by increasing their well-being will be equipped to address problems in their life that inevitably arise. Training and supervision methods are suggested and a supervision model is provided. The information is integrated and illustrated with a chapter of case examples from four GFPP therapists. Readers learn that client problems are not ignored but balanced with an emphasis on positive issues that use the client's strengths and enhance the client's hope. GFPP will appeal to counseling, clinical, and school psychologists, as well as counselors, marriage and family therapists, social workers, life coaches, and students in all these fields.

The Enlightenment Project in the Analytic Conversation

Science and Magic in the Modern World is a unique text that explores the role of magical thinking in everyday life. It provides an excellent psychological look at the subconscious belief in magic in both popular culture and society, as well as experimental research that considers human consciousness as a derivative of belief in the supernatural, thus showing that our feelings, emotions, attitudes and other psychological processes follow the laws of magic. This book synthesizes the science of 'natural' phenomena and the magic of the 'supernatural' to present an interesting look at the juxtaposition of the inner and outer selves. Fusing research into psychological disorders, subconscious feelings, as well as the rising presence of artificial intelligence, this book demonstrates how an engagement with magical thinking can enhance one's creativity and cognitive skills. Science and Magic in the Modern World is an invaluable resource for those studying consciousness, as well as those looking at the effect of magical thinking on religion, politics, science and society.

Nature Loves to Hide

Explores the question of whether or not concepts and principles involving supernatural intelligent design can occupy any legitimate place within science.

The School Laboratory of Physical Science
A Smoother Pebble

Reading Science

Uncommon Sense

Lord of the Flies

The centerpiece of Émilie Du Châtelet's philosophy of science is her Foundations of Physics, first published in 1748. The Foundations contains epistemology, metaphysics, methodology, mechanics, and physics, including such pressing issues of the time as whether there are atoms, the appropriate roles of God and of hypotheses in scientific theorizing, how (if at all) bodies are capable of acting on one another, and whether gravity is an action-at-a-distance force. Du Châtelet sought to resolve these issues within a single philosophical framework that builds on her critique and appraisal of all the leading alternatives (Cartesian, Newtonian, Leibnizian, and so forth) of the period. The text is remarkable for being the first to attempt such a synthetic project, and even more so for the accessibility and clarity of the writing. This book argues that Du Châtelet put her finger on the central problems that lay at the intersection of physics and metaphysics at the time, and tackled them drawing on the most up-to-date resources available. It will be a useful source for students and scholars interested in the history and philosophy of science, and in the impact of women philosophers in the early modern period.

Holt Science and Technology

Roy R. Manstan's new book documents the rise of German submarines in World War I and the Allies' successful response of tracking them with innovative listening devices—precursors to modern sonar. The Listeners: U-boat Hunters During the Great War details the struggle to find a solution to the unanticipated efficiency of the German U-boat as an underwater predator. Success or failure was in the hands and minds of the scientists at the Naval Experimental Station in New London, Connecticut. Through the use of archival materials, personal papers, and memoirs The Listeners takes readers into the world of the civilian scientists and engineers and naval personnel who were directly involved with the development and use of submarine detection technology during the war.

Plan B 3.0: Mobilizing to Save Civilization

Effective science teaching requires creativity, imagination, and innovation. In light of concerns about American science literacy, scientists and educators have struggled to teach this discipline more effectively. Science Teaching Reconsidered provides undergraduate science educators with a path to understanding students, accommodating their individual differences, and helping them grasp the methods—and the wonder—of science. What impact does teaching style have? How do I plan a course curriculum? How do I make lectures, classes, and laboratories more effective? How can I tell what students are thinking? Why don't they understand? This handbook provides productive approaches to these and other questions. Written by scientists who are also educators, the handbook offers suggestions for having a greater impact in the classroom and provides resources for further research.

Introduction to Probability

Developed from celebrated Harvard statistics lectures, Introduction to Probability provides essential language and tools for understanding statistics, randomness, and uncertainty. The book explores a wide variety of applications and examples, ranging from coincidences and paradoxes to Google PageRank and Markov chain Monte Carlo (MCMC). Additional

The China Review, Or, Notes and Queries on the Far East

Golding's iconic 1954 novel, now with a new foreword by Lois Lowry, remains one of the greatest books ever written for young adults and an unforgettable classic for readers of any age. This edition includes a new Suggestions for Further Reading by Jennifer Buehler. At the dawn of the next world war, a plane crashes on an uncharted island, stranding a group of schoolboys. At first, with no adult supervision, their freedom is something to celebrate. This far from civilization they can do anything they want. Anything. But as order collapses, as strange howls echo in the night, as terror begins its reign, the hope of adventure seems as far removed from reality as the hope of being rescued.

Science and Magic in the Modern World

John Houghton's market-leading textbook is now in full colour and includes the latest IPCC findings, making it the definitive guide to climate change. Written for students across a wide range of disciplines, its simple, logical flow of ideas gives an invaluable grounding in the science and impacts of climate change and highlights the need for action on global warming. Is there evidence for climate changing due to human activities? How do we account for recent extremes of weather and climate? Can global electricity provision and transport ever be carbon free? Written by a leading figure at the forefront of action to confront humanity's most serious environmental problem, this undergraduate textbook comprehensively explores these and other issues, allowing students to think through the problem, assess the data and draw conclusions on the action that should be taken, by governments, by industry and by each and every one of us.

Weather by the Numbers

Most people believe that science arose as a natural end-product of our innate intelligence and curiosity, as an inevitable stage in human intellectual development. But physicist and educator Alan Cromer disputes this belief. Cromer argues that science is not the natural unfolding of human potential, but the invention of a particular culture, Greece, in a particular historical period. Indeed, far from being natural, scientific thinking goes so far against the grain of conventional human thought that if it hadn't been discovered in Greece, it might not have been discovered at all. In Uncommon Sense, Alan Cromer develops the argument that science represents a radically new and different way of thinking. Using Piaget's stages of intellectual development, he shows that conventional thinking remains mired in subjective, "egocentric" ways of looking at the world--most people even today still believe in astrology, ESP, UFOs, ghosts and other paranormal phenomena--a mode of thought that science has outgrown. He provides a fascinating explanation of why science began in Greece, contrasting the Greek practice of debate to the Judaic reliance on prophets for acquiring knowledge. Other factors, such as a maritime economy and wandering scholars (both of which prevented parochialism) and an essentially literary religion not dominated by priests, also promoted in Greece an objective, analytical way of thinking not found elsewhere in the ancient world. He examines India and China and explains why science could not develop in either country. In India, for instance, astronomy served only the state, and the private study of astronomy was forbidden. Cromer also provides a perceptive account of science in Renaissance Europe and of figures such as Copernicus, Galileo, and Newton. Along the way, Cromer touches on many intriguing
topics, arguing, for instance, that much of science is essential complete; there are no new elements yet to be discovered. He debunks the vaunted SETI (Search for Extraterrestrial Intelligence) project, which costs taxpayers millions each year, showing that physical limits--such as the melting point of metal--put an absolute limit on the speed of space travel, making trips to even the nearest star all but impossible. Finally, Cromer discusses the deplorable state of science education in America and suggests several provocative innovations to improve high school education, including a radical proposal to give all students an intensive eighth and ninth year program, eliminating the last two years of high school. Uncommon Sense is an illuminating look at science, filled with provocative observations. Whether challenging Thomas Kuhn's theory of scientific revolutions, or extolling the virtues of Euclid's Elements, Alan Cromer is always insightful, outspoken, and refreshingly original.

The Relevance of Natural Science to Theology

Animal Farm

In March 2014, Eric Larsen and Ryan Waters set out to traverse nearly 500 miles across the melting Arctic Ocean, unsupported, from Northern Ellesmere Island to the geographic North Pole. Despite being one of the most cold and hostile environments on the planet, the Arctic Ocean has seen a steady and significant reduction of sea ice over the past seven years due to climate change. Because of this, Larsen's and Waters' trip--dubbed the "Last North Expedition"--is expected to be the last human-powered trek to the North Pole ever. Filled with stunning, full-color photos and GPS maps plotting his progress, On Thin Ice is Larsen's first-person account of this historic oceanic expedition. Traveling across the retreating sea ice on skis, snowshoes, and even swimming through semi-frozen arctic slush, Larsen and Waters each pulled over 320 pounds of gear behind them on sleds through temperatures that plummeted to nearly 70 degrees below zero. At times, they covered little over a mile a day. They were stalked by polar bears and ran out of food. It was, in Larsen's words, "easily one of the most difficult expeditions in the world." More than just a heart-stopping adventure narrative, however, On Thin Ice offers an intimate and haunting look at the rapidly changing face of the Arctic due to global climate change.

Goethe and the Development of Science 1750-1900

Addison-Wesley Introduction to Physical Science

"The Value of Philosophy" is one of the most important chapters of Bertrand's Russell's magnum Opus, The Problems of Philosophy. As a whole, Russell focuses on problems he believes will provoke positive and constructive discussion. Russell concentrates on knowledge rather than metaphysics: If it is uncertain that external objects exist, how can we then have knowledge of them but by probability. There is no reason to doubt the existence of external objects simply because of sense data.

Science & Engineering Indicators

The Modern Theologians

Today many school students are shielded from one of the most important concepts in modern science: evolution. In engaging and conversational style, Teaching About Evolution and the Nature of Science provides a well-structured framework for understanding and teaching evolution. Written for teachers, parents, and community officials as well as scientists and educators, this book describes how evolution reveals both the great diversity and similarity among the Earth's organisms; it explores how scientists approach the question of evolution; and it illustrates the nature of science as a way of knowing about the natural world. In addition, the book provides answers to frequently asked questions to help readers understand many of the issues and misconceptions about evolution. The book includes sample activities for teaching about evolution and the nature of science. For example, the book includes activities that investigate fossil footprints and population growth that teachers of science can use to introduce principles of evolution. Background information, materials, and step-by-step presentations are provided for each activity. In addition, this volume: Presents the evidence for evolution, including how evolution can be observed today. Explains the nature of science through a variety of examples. Describes how science differs from other human endeavors and why evolution is one of the best avenues for helping students understand this distinction. Answers frequently asked questions about evolution. Teaching About Evolution and the Nature of Science builds on the 1996 National Science Education Standards released by the National Research Council--and offers detailed guidance on how to evaluate and choose instructional materials that support the standards. Comprehensive and practical, this book brings one of today's educational challenges into focus in a balanced and reasoned discussion. It will be of special interest to teachers of science, school administrators, and interested members of the community.

Goal-Focused Positive Psychotherapy

Analytic philosophy has been a dominant intellectual movement in the 20th century and a reflection of the cultural pre-eminence of science. In response to analytic philosophy's peculiar reticence (and inability to discuss itself), this book provides its first comprehensive history and critique. The central element in the analytic conversation has been the Enlightenment Project: the appeal to an autonomous human reason, freed of any higher authority and channeling itself through science as its privileged tool. This centrality is demonstrated by systematically examining its presence and development in the philosophy of science, metaphysics, epistemology, language, psychology, social philosophy, ethics, political philosophy, and the history of philosophy. This journey highlights the internal logical disintegration of that project. Post-modern relativism is its natural offspring and not a viable alternative. The Enlightenment Project's conception of physical science is defective; this defective conception of physical science renders the analytic conception of social science, philosophical psychology, and epistemology defective; and that defective conception of the human condition leads to defective conceptions of both moral and political philosophy, specifically the idea of social engineering or social technology. Throughout the book, an alternative conception of philosophy is presented as a way out of the abyss of analysis, an alternative that reconnects philosophy with the mainstream of Western civilization and initiates the process of providing a coherent cultural narrative. This book will be of particular interest to any sophisticated reader concerned about the lack of a coherent cultural narrative.

Global Warming

The history of the growth and professionalization of American meteorology and its transformation into a physics- and mathematics-based scientific discipline. For much of the first half of the twentieth century, meteorology was more art than science, dependent on an individual forecaster's lifetime of local experience. In Weather by the Numbers, Kristine Harper tells the story of the transformation of meteorology from a "guessing science" into a sophisticated scientific discipline based on physics and mathematics. What made this possible was the development of the electronic digital computer; earlier attempts at weather prediction were frustrated by the human inability to solve nonlinear equations quickly enough for timely forecasting. After World War II, the combination of an expanded observation network developed for military purposes, newly trained meteorologists, savvy about math and physics, and the nascent digital computer created a new way of approaching atmospheric theory and weather forecasting. This transformation of a discipline, Harper writes, was the most important intellectual achievement of twentieth-century meteorology, and paved the way for the growth of computer-assisted modeling in all the sciences.
The School Laboratory of Physical Science

Reading Science looks at the distinctive language of science and technology and the role it plays in building up scientific understandings of the world. It brings together discourse analysis and critical theory for the first time in a single volume. This edited collection examines science discourse from a number of perspectives, drawing on new rhetoric, functional linguistics and critical theory. It explores this language in research and industrial contexts as well as in educational settings and in popular science writing and science fiction. The papers also include consideration of the role of images (tables and figures) in science writing and the importance of reading science discourse as multi-modal text. The internationally renowned contributors include M. A. K. Halliday, Charles Bazerman and Jay Lemke.

On Thin Ice

Medical professionals are expected to act in the interest of patients, the public, and the pursuit of medical knowledge. But what happens when doctors' supposed impartiality comes under fire? Helen Kang examines three moments in the history of the medical profession in Canada, spanning more than 150 years, when doctors' moral and scientific authority was questioned. She shows that the profession was compelled to re-examine its priorities, strategize in order to regain credibility, and redefine what it means to be a good doctor. Medicine and Morality reveals that the moral and scientific standards in medicine are determined in direct relation to, not in spite of, conflict of interest.

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