

Ignorance And Uncertainty Emerging Paradigms

Environmental Systems is a component of Encyclopedia of Environmental and Ecological Sciences, Engineering and Technology Resources in the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. Environmental Systems is something about data handling, modeling and decision making in the field of environmental systems. It includes related basic knowledge on measurement techniques, modeling techniques and models and their applications for decisions making. Environmental engineering / research are based on measurement techniques and related knowledge of natural and life sciences. Developed mathematical and numerical simulation models are tools and strictly purpose oriented, that means suitable for decision making. The three volumes on Environmental Systems are aimed at the following five major target audiences: University and College students Educators, Professional practitioners, Research personnel and Policy analysts, managers, and decision makers and NGOs.

This book is a compendium of pragmatism in the social sciences. While addressing several distinct spheres, it carries a common message: the future of the social sciences depends on a shared understanding of society based on the knowledge of various disciplines and transcending the currently forbidding borders between scientific knowledge and the other forms of knowledge. Looking back at the social science traditions this is nothing new. To ensure a fruitful future for the social sciences a paradigm shift is unavoidable. The consequence of the increase of knowledge in the last two centuries was the specialization of the sciences. The nineteenth century saw the separation of humanities and social sciences; the twentieth century is even characterized by specialization within the disciplines and the occurrence of competing schools of thought. This book tries to overcome the barriers that are built between and within the disciplines, and to counteract the unnecessary barriers created by the emergence of "schools of thoughts" that distrust each other and the social sciences as a whole. This book was originally published as a special issue of Innovation: The European Journal of Social Science Research.

This work explores scientific uncertainty and media coverage of science in such major public issues as AIDS, biotechnology, dioxin, global warming, and nature vs nurture.

In 1996, the National Science Foundation (NSF) released a report about ways to improve undergraduate science, mathematics, engineering, and technology (SME&T) education. One recommendation called for establishing a digital library, similar to those that are being constructed for many research communities, that would make available electronically a wide variety of materials for improving teaching and learning of SME&T. The NSF asked the National Research Council to examine the feasibility of and issues associated with establishing such a digital national library. In response, an NRC steering committee commissioned a series of papers and convened a workshop to consider these issues. This resulting book delineates the issues that should be considered and provides recommendations to resolve them prior to committing funds.

Grappling with uncertainties is at the heart of investigating serious crime. At a time when such crime is becoming more complex and resources are increasingly stretched, this book draws together research and practice perspectives to review fruitful approaches to uncertainties and to chart the way forward. Scene setting chapters describe the consequences of globalisation and the spread of sophisticated information technologies (Sue Wilkinson), as well as advances in understanding and managing uncertainty (Michael Smithson). Ways of enhancing responses from statistics (Robyn Attewell), risk analysis (Richard Jarrett and Mark Westcott) and the psychology of decision making (Mark Kebbell, Damon Muller and Kirsty Martin) follow. These are complemented by insights from law (the Hon. Tim Carmody SC), politics (the Hon. Carmen Lawrence) and business (Neil Fargher), which all have significant intersections with policing. Synthesis is provided by the four final chapters which present the outlooks of the investigating officer and investigation manager (Peter Martin), the provider of policing higher education (Tracey Green and Greg Linsdell), the capacity-building consultant (Steve Longford), and the leader of a law enforcement agency (Alastair Milroy).

This volume explores the well-documented phenomena of memory distortion in a variety of settings, as well as how it can be ameliorated or prevented altogether. The editors have recruited some of the very best researchers in the applied cognitive field to address these issues. These authors examine distortion from several angles: fuzzy trace theory, face identification, memory deficits with age, collaborative influences on distortion, sociocultural influences on memory, retention of procedural and declarative information, and ignorance of medical and other information. The final chapter addresses the issue of cognitive technology, in general. Because of the surge of interest in applied cognitive psychology and in the memory distortion issue in particular, this book will be valuable to many applied and basic researchers.

Lebanon hosts the highest number of refugees per capita worldwide and is central to European policies of outsourcing migration management. Hybrid Political Order and the Politics of Uncertainty is the first book to critically and comprehensively explore the parallels between the country's engagement with the recent Syrian refugee influx and the more protracted Palestinian presence. Drawing on fieldwork, qualitative case-studies, and critical policy analysis, it questions the dominant idea that the haphazardness, inconsistency, and fragmentation of refugee governance are only the result of forced displacement or host state fragility and the related capacity problems. It demonstrates that the endemic ambiguity that determines refugee governance also results from a lack of political will to create coherent and comprehensive rules of engagement to address refugee 'crises.' Building on emerging literatures in the fields of critical refugee studies, hybrid governance, and ignorance studies, it proposes an innovative conceptual framework to capture the spatial, temporal, and procedural dimensions of the uncertainty that refugees face and to tease out the strategic components of the reproduction and extension of such informality, liminality, and exceptionalism. In developing the notion of a 'politics of uncertainty,' ambiguity is explored as a component of a governmentality that enables the control, exploitation, and expulsion of refugees.

The increasing complexity of emerging business models and a growing societal concern with the integrity of financial reporting now leads to new emphases on accountability within large, publicly traded energy corporations. Managing Enterprise Risk: What the Electric Industry Experience Implies for Contemporary Business emphasizes the implications these issues have in the electric industry, a traditional infrastructure that underlies the digital society and now faces extraordinary environmental, regulatory, and technological uncertainties. Informs professionals in a variety of fields of the best current thinking on business risk—how it can be understood, how it can be managed, and how it can be communicated to diverse constituencies

This handbook provides the latest thinking, methodologies and cases in the rapidly growing area of collaborative management research. What makes collaborative management research different is its emphasis on creating a close partnership between scholars and practitioners in the search for knowledge concerning organizations and complex systems. In the ideal situation, scholars and their managerial partners would work together to define the research focus, develop the methods to be used for data collection, participate equally in the analysis of data, and work together in the application and dissemination of knowledge. The handbook contains insightful reflections on the state of the art as well as detailed descriptions of the collaborative efforts of an international group of leading edge academics and their practitioner counterparts. The applications of collaborative research methods included in this volume include those aimed at

individual development, organizational development, regional development efforts and economic policy. The insights from the cases suggest that collaborative management research has been a highly effective means of getting at issues that other research methods and intervention techniques have failed to address. The rationale for conducting this highly engaging type of research is explored in the first section of the handbook, followed by sections that offer new methodologies, descriptive cases, views from those directly involved, and issues and enablers about the use of this approach in advancing knowledge and practice. The handbook does appeal to scholarly practitioners as well as practical scholars.

This report is one of 21 Synthesis and Assessment Products commissioned by the U.S. Climate Change Science Program as part of an effort to integrate fed. research on climate change and to facilitate a nat. understanding of the critical elements of climate change. Most of these reports are focused on specific substantive issues in climate science, impacts and related topics. In contrast, the focus of this report is methodological. This report provides a tutorial to the climate analysis and decision-making communities on current best practice in describing and analyzing uncertainty in climate-related problems. While the language is semi-technical, much of it should also be accessible to non-expert readers who are comfortable with the treatment of technical topics. Illus.

A Companion to Environmental Geography is the first book to comprehensively and systematically map the research frontier of 'human-environment geography' in an accessible and comprehensive way. Cross-cuts several areas of a discipline which has traditionally been seen as divided; presenting work by human and physical geographers in the same volume Presents both the current 'state of the art' research and charts future possibilities for the discipline Extends the term 'environmental geography' beyond its 'traditional' meanings to include new work on nature and environment by human and physical geographers - not just hazards, resources, and conservation geographers Contains essays from an outstanding group of international contributors from among established scholars and rising stars in geography

Interdisciplinary approaches to identifying, understanding, and remediating people's reliance on inaccurate information that they should know to be wrong. Our lives revolve around the acquisition of information. Sometimes the information we acquire—from other people, from books, or from the media—is wrong. Studies show that people rely on such misinformation, sometimes even when they are aware that the information is inaccurate or invalid. And yet investigations of learning and knowledge acquisition largely ignore encounters with this sort of problematic material. This volume fills the gap, offering theoretical and empirical perspectives on the processing of misinformation and its consequences. The contributors, from cognitive science and education science, provide analyses that represent a variety of methodologies, theoretical orientations, and fields of expertise. The chapters describe the behavioral consequences of relying on misinformation and outline possible remediations; discuss the cognitive activities that underlie encounters with inaccuracies, investigating why reliance occurs so readily; present theoretical and philosophical considerations of the nature of inaccuracies; and offer formal, empirically driven frameworks that detail when and how inaccuracies will lead to comprehension difficulties. Contributors Peter Afflerbach, Patricia A. Alexander, Jessica J. Andrews, Peter Baggetta, Jason L. G. Braasch, Ivar Bråten, M. Anne Britt, Rainer Bromme, Luke A. Buckland, Clark A. Chinn, Byeong-Young Cho, Sidney K. D'Mello, Andrea A. diSessa, Ullrich K. H. Ecker, Arthur C. Graesser, Douglas J. Hacker, Brenda Hannon, Xiangen Hu, Maj-Britt Isberner, Koto Ishiwa, Matthew E. Jacobina, Panayiota Kendeou, Jong-Yun Kim, Stephan Lewandowsky, Elizabeth J. Marsh, Ruth Mayo, Keith K. Millis, Edward J. O'Brien, Herre van Oostendorp, José Otero, David N. Rapp, Tobias Richter, Ronald W. Rinehart, Yaacov Schul, Colleen M. Seifert, Marc Stadtler, Brent Steffens, Helge I. Strømsø, Briony Swire, Sharda Umanath

The Internet of Things (IoT) and Big Data are hot topics in the world of intelligence operations and information gathering. This first-of-its-kind volume reveals the benefits of addressing these topics with the integration of Fusion of Information and Analytics Technologies (FIAT). The book explains how FIAT is materialized into decision support systems that are capable of supporting the prognosis, diagnosis, and prescriptive tasks within complex systems and organizations. This unique resource offers keen insight into how complex systems emerge from the interrelation of social and cognitive information, cyber and physical worlds, and the various models of decision-making and situational awareness. Practitioners also discover the central notions of analytics and information fusion. Moreover the book introduces propos such as integration through a FIAT computational model and applications at the systems level. This book concludes with a list of prospective research activities that can contribute towards the required FIAT integration for critical application domains such as: energy, health, transport and defense and security.

"introduces the topic of medical uncertainty and discusses its importance in human life. It argues that medical uncertainty is a critically important but historically neglected experience of both clinicians and patients, and that COVID-19 pandemic and other recent events have raised the need to better understand and manage it. The chapter makes the case for the value of a conceptual framework in helping clinicians and patients to better understand, manage, and ultimately tolerate the uncertainties they experience, and provides an overview of the book"--

Examining the role of shareholders in modern companies, this timely book argues that more should be expected of shareholders, both morally and legally. It explores the privileged position of shareholders within the corporate law system and the unique rights and duties awarded to them in contrast to other corporate actors. Introducing the concept of shareholders as responsible agents whose actions and inactions should be judged on that basis, Stephen Bottomley unites a number of distinct corporate governance discussions including stewardship, activism and shareholder liability.

This open access volume raises awareness of the histories, geographies, and practices of universities and analyzes their role as key actors in today's global knowledge economy. Universities are centers of research, teaching, and expertise with significant economic, social, and cultural impacts at different geographical scales. Scholars from a variety of disciplines and countries offer original analyses and discussions along five main themes: historical perspectives on the university as a site of knowledge production, cultural encounter, and political interest; institutional perspectives on university governance and the creation of innovative environments; relationships between universities and the city; the impact of universities on national and regional economies and cultures; and the processes of internationalization through student mobility, the creation of education hubs, and global regionalism in higher education.

Fuzzy Logic has gained increasing acceptance as a way to deal with complexity and uncertainty in many areas of science and engineering. This book is the first to address its practical applications to chemical systems. Ten distinguished authors discuss the role of fuzzy logic in the characterization of a variety of chemical concepts, including chirality, quantum systems,

molecular engineering and design, and hierarchical classification methods. Fuzzy Logic in Chemistry will appeal to both students and professionals who are seeking to learn more about theory and applications in an area of growing importance to the physical sciences. The first book on the applications of fuzzy logic in chemistry Covers a topic relevant to many disciplines, including molecular design Discusses applications of fuzzy logic to the physical sciences, a rapidly growing area Features chapters from highly distinguished authors in the physical sciences

The phenomenon of fire in the Australian landscape traverses many interests and disciplines. At a national level, there is an urgent need for the integration of both the natural and social sciences in the formulation of public policy. With contributions from 30 leading experts, Australia Burning draws together these issues, under the themes: *Ecology and the environment *Fire behaviour and fire regime science *People and property *Policy, institutional arrangements and the legal framework *Indigenous land and fire management The book examines some of the key questions that relate to the ecology, prediction and management of fire, urban planning, law, insurance, and community issues, including indigenous and non-indigenous concerns. It looks at what we need to know to inform public policy, given the present risks and uncertainty, and explores the avenues for closer integration between science, policy and the community.

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Socio-Historical Examination of Religion and Ministry (SHERM journal) is a biannual, not-for-profit, free peer-reviewed academic journal that publishes the latest social-scientific, historiographic, and ecclesiastic research on religious institutions and their ministerial practices. SHERM is dedicated to the critical and scholarly inquiry of historical and contemporary religious phenomena, both from within particular religious traditions and across cultural boundaries, so as to inform the broader socio-historical analysis of religion and its related fields of study. The purpose of SHERM is to provide a scholarly medium for the social-scientific study of religion where specialists can publish advanced studies on religious trends, theologies, rituals, philosophies, socio-political influences, or experimental and applied ministry research in the hopes of generating enthusiasm for the vocational and academic study of religion while fostering collegiality among religious specialists. Its mission is to provide academics, professionals, and nonspecialists with critical reflections and evidence-based insights into the socio-historical study of religion and, where appropriate, its implications for ministry and expressions of religiosity.

Ignorance and Uncertainty overviews a variety of approaches to the problem of indeterminacies in human thought and behavior. This book examines, in depth, trends in the psychology of judgment and decision-making under uncertainty or ignorance. Research from the fields of cognitive psychology, social psychology, organizational studies, sociology, and social anthropology are reviewed here in anticipation of what Dr. Smithson characterizes as the beginning of a "creative dialogue between these researchers". Ignorance and Uncertainty offers the conceptual framework for understanding the paradigms associated with current research. It discusses the ways in which attitudes toward ignorance and uncertainty are changing, and addresses issues previously ignored.

Over a period of several centuries, the academic study of risk has evolved as a distinct body of thought, which continues to influence conceptual developments in fields such as economics, management, politics and sociology. However, few scholarly works have given a chronological account of cultural and intellectual trends relating to the understanding and analysis of risks. Risk: A Study of its Origins, History and Politics aims to fill this gap by providing a detailed study of key turning points in the evolution of society's understanding of risk. Using a wide range of primary and secondary materials, Matthias Beck and Beth Kewell map the political origins and moral reach of some of the most influential ideas associated with risk and uncertainty at specific periods of time. The historical focus of the book makes it an excellent introduction for readers who wish to go beyond specific risk management techniques and their theoretical underpinnings, to gain an understanding of the history and politics of risk.

Do people with high testosterone levels make decisions the same way as people with lower testosterone? Do men change their behavior when a pretty woman enters the office? Do women change their behavior when a handsome man enters the office? Do men and women affect each other within the firm to the detriment or the benefit of the firm? In some ways, the questions this edited volume addresses are questions that we are all familiar with and have asked for many years. It suggests looking for answers in places that that we have never thought of before. Some of the chapters will surprise you with their ingenious, simple answers and propositions; some will perhaps make you feel awkward with their straight-forward way of presenting what we all suspected but felt uncomfortable to talk about. From the foreword by David B. Audretsch This volume brings together leading researchers from a variety of fields to investigate the concept of the firm from new perspectives arising from neuroeconomics. The traditional theory of the firm has focused on the strategic, operational and resource management objectives of the firm as an organization. This timely and informative book explores new horizons in the biology of human decision-making and behavior, including uncertainty, entrepreneurship and ethics as it affects the functioning of the organization. The fascinating chapters cover a wide range of research fields, drawing on both the conscious and the unconscious mind, and how common hormonal cycles in the female and testosterone variations in the male affect each other in the workplace and its affect on the firm as an organization. The topics of entrepreneurship and the recent global financial crisis are discussed from the perspective of hormonal forces and the implications of those forces in the future. It is an enlightening selection of articles that scholars, students, business leaders, and managers will find a valuable read. Vernon L. Smith, 2002 Nobel Laureate in Economics The ideal firm has been studied over several centuries, yet little is known about what makes one successful and another fail. This pioneering book brings together leading researchers investigating the concept of the firm from a neuroscientific perspective. From the viewpoint of economics, the firm's purpose is to maximize shareholders' wealth; resources are commodities, each with its particular supply and demand curve that can be manipulated by the firm to its own benefit. Traditionally, the firm is focused on the strategic, operational and resource management objectives. The editors instead suggest that the objective of the firm is equal to the objectives of its workers. The definition and function of risk in decision-making, ethics, trust and the global financial crisis are all discussed. They are analyzed from the perspective of human bio-physiology, using scanning and hormonal analysis tools, with a focus on the implications for the bottom line of the firm. With experimental as well as theoretical and applied contributions, this book will benefit scholars and students of economics, business management, finance, organizational behavior, entrepreneurship, psychology, neuroscience and law. Practitioners of management, entrepreneurship and law firms will also find this book to be a captivating read.

From climate change to GM foods, we are increasingly confronted with complex, interconnected social and environmental problems that span disciplines, knowledge bases and value systems.

This book offers a transdisciplinary, open approach for those working towards resolving these 'wicked' problems and highlights the crucial role of this 'transdisciplinary imagination' in addressing the shift to sustainable futures. Tackling Wicked Problems provides readers with a framework that will guide the design and conduct of their own open-ended enquiries. In this approach, academic disciplines are combined with personal, local and strategic understanding and researchers are required to recognise multiple knowledge cultures, accept the inevitability of uncertainty, and clarify their own and others' ethical positions. The authors then comment on fifteen case studies which provide real life examples of how researchers have engaged with the opportunities and challenges of conducting transdisciplinary inquiries. The book gives those who are grappling with complex problems innovative methods of inquiry that will allow them to work collaboratively towards long-term solutions.

"This encyclopedia, magnificently edited by Byron Kaldis, will become a valuable source both of reference and inspiration for all those who are interested in the interrelation between philosophy and the many facets of the social sciences. A must read for every student of the humanities." Wulf Gaertner, University of Osnabrueck, Germany "Like all good works of reference this Encyclopedia of Philosophy and the Social Sciences is not to be treated passively: it provides clear and sometimes controversial material for constructive confrontation. It is a rich resource for critical engagement. The Encyclopedia conceived and edited by Byron Kaldis is a work of impressive scope and I am delighted to have it on my bookshelf." David Bloor, Edinburgh University "This splendid and possibly unique work steers a skilful course between narrower conceptions of philosophy and the social sciences. It will be an invaluable resource for students and researchers in either or both fields, and to anyone working on the interrelations between them." William Outhwaite, Newcastle University The Encyclopedia of Philosophy and the Social Sciences is the first of its kind in bringing the subjects of philosophy and the social sciences together. It is not only about the philosophy of the social sciences but, going beyond that, it is also about the relationship between philosophy and the social sciences. The subject of the Encyclopedia is purposefully multi- and inter-disciplinary. Knowledge boundaries are both delineated and crossed over. The goal is to convey a clear sense of how philosophy looks at the social sciences and to mark out a detailed picture of how the two are interrelated: interwoven at certain times but also differentiated and contrasted at others. The Entries cover topics of central significance but also those that are both controversial and on the cutting-edge, underlining the unique mark of this Encyclopedia: the interrelationship between philosophy and the social sciences, especially as it is found in fresh ideas and unprecedented hybrid disciplinary areas. The Encyclopedia serves a further dual purpose: it contributes to the renewal of the philosophy of the social sciences and helps to promote novel modes of thinking about some of its classic problems.

Making Sense of Messages, now in its second edition, retains the apprenticeship approach which facilitates effectively learning the complex content and skills of rhetorical theory and criticism. A new chapter on "The Rhetoric of Ignorance" provides needed theory and examples that help students deal with the new rhetorical landscape marked by such discursive complexities as "fake news," "whataboutism," and denial of science that creates rather than reduces uncertainty in public argument. A new chapter, "Curating and Analyzing Multimodal Mediated Rhetoric," deals with problems of media criticism in the digital age. It provides theory, models of application, and commentary that help novice critics understand and mindfully practice criticism that leads to insight, not mere opinion. Throughout the book, extended and updated examples and commentaries are designed to promote "novice-to-expert" agency in students. This textbook is ideal for introductory courses in contemporary rhetoric, rhetorical criticism, and critical analysis of mass media.

High levels of uncertainty are a trademark of geological investigations, such as the search for oil, diamonds, and uranium. So business ventures related to geology, such as mineral exploration and mining, are naturally associated with higher risks than more traditional entrepreneurial ventures in industry and economy. There are also a number of dangerous natural hazards, e.g. earthquakes, volcanic activities, and inundations, that are the direct result of geological processes. It is of paramount interest to study them all, to describe them, to understand their origin and - if possible - to predict them. While uncertainties, geological risks and natural hazards are often mentioned in geological textbooks, conferences papers, and articles, no comprehensive and systematic evaluation has so far been attempted. This book, written at an appropriately sophisticated level to deal with complexity of these problems, presents a detailed evaluation of the entire problem, discussing it from both, the geological and the mathematical aspects. This accessible book introduces the story of 'social science', with coverage of history, politics, economics, sociology, psychology, anthropology, and geography. Key questions include: How and why did the social sciences originate and differentiate? How are they related to older traditions that have defined Western civilization? What is the unique perspective or 'way of knowing' of each social science? What are the challenges—and alternatives—to the social sciences as they stand in the twenty-first century? Eller explains the origin, evolution, methods, and the main figures, literature, concepts, and theories in each discipline. The chapters also feature a range of contemporary examples, with consideration given to how the disciplines address present-day issues.

In spite of decades of research on toxicants, along with the growing role of scientific expertise in public policy and the unprecedented rise in the number of national and international institutions dealing with environmental health issues, problems surrounding contaminants and their effects on health have never appeared so important, sometimes to the point of appearing insurmountable. This calls for a reconsideration of the roles of scientific knowledge and expertise in the definition and management of toxic issues, which this book seeks to do. It looks at complex historical, social, and political dynamics, made up of public controversies, environmental and health crises, economic interests, and political responses, and demonstrates how and to what extent scientific knowledge about toxicants has been caught between scientific, economic, and political imperatives.

The information context of the modern organization is rapidly evolving in the face of intense global competition. Information technologies, including databases, new telecommunications systems, and software for synthesizing information, make a vast array of information available to an ever expanding number of organizational members. Management's exclusive control over knowledge is steadily declining, in part because of the downsizing of organizations and the decline of the number of layers in an organizational hierarchy. These trends, as well as issues surrounding the Web 2.0 and social networking, mean that it is increasingly important that we understand how informal knowledge networks impact the generation, capturing, storing, dissemination, and application of knowledge. This innovative book provides a thorough analysis of knowledge networks, focusing on how relationships contribute to the creation of knowledge, its distribution within organizations, how it is diffused and transferred, and how people find it and share it collaboratively.

The world's dependence on fossil fuels is widely acknowledged to be a major cause of rising levels of carbon dioxide in the atmosphere. Thus there is an urgent need to develop energy sources with lower environmental impact, with attention focusing on renewable energy sources. Concise, authoritative, up-to-date and readable, this book reviews various energy technologies, as well as taking a critical look at the political, social and economic aspects. Throughout, the emphasis is on renewable energy sources (wind, wave, solar, biomass, etc), but a discussion of fossil fuels and nuclear power is also presented. This timely book, written by recognised experts, will be welcomed by those in the energy industries as well as by policy-makers, consultants and engineers. Students and lecturers will also find the material invaluable.

In this book experts in the environment, theology and science argue that the challenge posed to society by biotechnology lies not only in terms of risk/benefit analysis of individual genetic technologies and

interventions, but also has implications for the way we think about human identity and our relationship to the natural world. Such a profound--they would suggest religious--challenge requires a response that is genuinely interdisciplinary in nature, a conversation that draws as much on expertise in theology and philosophy as on the natural sciences and risk assessment techniques. They argue that an adequate response must also be sociologically informed in at least two ways. First it must draw on contemporary sociological insights about contemporary cultural change, the complex role of expert knowledge in modern complex society and the specific social dynamics of contemporary technological risks. Secondly, it must endeavour to pay sensitive attention to the voice of the lay public in the current controversy over the new genetics. This book attempts to realise such an aim, as a contribution not just to academic scholarship, but also to the public debate about biotechnology and its regulation. Thus the collection includes contributions from scholars in a range of intellectual domains (indeed, many of the chapters themselves draw on more than one discipline in new and challenging ways). The book invites the reader to enter into this conversation in a creative way and come to appreciate more fully the many-sided nature of the debate.

A broad and comprehensive exploration of the role of the ecological sciences in sustainability for undergraduates. The urgent quest for more sustainable patterns of development has placed new and difficult demands on both scientists and policy makers as they seek to establish more informed and effective policy processes and management regimes in the face of pervasive uncertainty. Written by an international group of authors from a range of disciplines - ecology, geography, law, policy analysis and others - the chapters explore issues of scientific legitimacy, public participation, non-governmental organisations, inter-sectoral communication and pragmatic public policy across a wide range of ecosystem management contexts.

Andrew Bennett argues in this fascinating book that ignorance is part of the narrative and poetic force of literature and is an important aspect of its thematic focus: ignorance is what literary texts are about. He sees that the dominant conception of literature since the Romantic period involves an often unacknowledged engagement with the experience of not knowing. From Wordsworth and Keats to George Eliot and Charles Dickens, from Henry James to Joseph Conrad, from Elizabeth Bowen to Philip Roth and Seamus Heaney, writers have been fascinated and compelled by the question of ignorance, including their own. Bennett argues that there is a politics and ethics as well as a poetics of ignorance: literature's agnology, its acknowledgement of the limits of what we know both of ourselves and of others, engages with the possibility of democracy and the ethical, and allows us to begin to conceive of what it might mean to be human. This exciting approach to literary theory will be of interest to lecturers and students of literary theory and criticism.

This volume brings together selected papers from an interdisciplinary conference focused on effective and appropriate communication of science in the often-heated controversies characteristic of contemporary democracies. The forty essays represent cutting-edge work from rhetorical and communication theorists studying the practices and norms of public discourse and science communication, philosophers interested in the informal logic of everyday reasoning and in the theory of deliberative democracy, and science studies scholars examining the intersections between the social worlds of scientists and citizens. Topics include the theory and practice of public participation exercises involving experts and lay publics, communication techniques for conveying uncertainty, complexity and scale, pseudocontroversy and "manufactured doubt" about science, and the maintenance of trust between scientists and citizens.

This is a major, and deeply thoughtful, contribution to understanding uncertainty and risk. Our world and its unprecedented challenges need such ways of thinking! Much more than a set of contributions from different disciplines, this book leads you to explore your own way of perceiving your own area of work. An outstanding contribution that will stay on my shelves for many years. Dr Neil T. M. Hamilton, Director, WWF International Arctic Programme This collection of essays provides a unique and fascinating overview of perspectives on uncertainty and risk across a wide variety of disciplines. It is a valuable and accessible sourcebook for specialists and laypeople alike. Professor Renate Schubert, Head of the Institute for Environmental Decisions and Chair of Economics at the Swiss Federal Institute of Technology This comprehensive collection of disciplinary perspectives on uncertainty is a definitive guide to contemporary insights into this Achilles heel of modernity and the endemic hubris of institutional science in its role as public authority. It gives firm foundations to the fundamental historic shift now underway in the world, towards normalizing acceptance of the immanent condition of ignorance and of its practical corollaries: contingency, uncontrol, and respect for difference. Brian Wynne, Professor of Science Studies, Lancaster University Bammer and Smithson have assembled a fascinating, important collection of papers on uncertainty and its management. The integrative nature of Uncertainty and Risk makes it a landmark in the intellectual history of this vital cross-disciplinary concept. George Cvetkovich, Director, Center for Cross-Cultural Research, Western Washington University Uncertainty governs our lives. From the unknowns of living with the risks of terrorism to developing policies on genetically modified foods, or disaster planning for catastrophic climate change, how we conceptualize, evaluate and cope with uncertainty drives our actions and deployment of resources, decisions and priorities. In this thorough and wide-ranging volume, theoretical perspectives are drawn from art history, complexity science, economics, futures, history, law, philosophy, physics, psychology, statistics and theology. On a practical level, uncertainty is examined in emergency management, intelligence, law enforcement, music, policy and politics. Key problems that are a subject of focus are environmental management, communicable diseases and illicit drugs. Opening and closing sections of the book provide major conceptual strands in uncertainty thinking and develop an integrated view of the nature of uncertainty, uncertainty as a motivating or de-motivating force, and strategies for coping and managing under uncertainty.

Ignorance is typically thought of as the absence or opposite of knowledge. In global societies that equate knowledge with power, ignorance is seen as a liability that can and should be overcome through increased education and access to information. In recent years, scholars from the social sciences, natural sciences and humanities have challenged this assumption, and have explored the ways in which ignorance can serve as a vital resource – perhaps the most vital resource – in social and political life. In this seminal volume, leading theorists of ignorance from anthropology, sociology and legal studies explore the productive role of ignorance in maintaining and destabilizing political regimes, entrenching corporate power, and shaping policy developments in climate science, global health, and global economic governance. From debates over death tolls during the war in Iraq, to the root causes of the global financial crisis, to poverty reduction strategies at the World Bank, contributors shed light on the unexpected ways that ignorance is actively harnessed by both the powerful and the marginalized in order to achieve different objectives. This eye-opening volume suggests that to understand power today, we must enrich our understanding of ignorance. This book was originally published as a special issue of *Economy and Society*.

Harris weaves together a unique story of the complexity of global and regional sustainability.

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