

canvas, with the emphasis on the evolution of governance. The book's detailed analysis of five strategic sectors (economy, environment, health, information and security) points to an intricate and rapidly evolving interplay of geopolitical, cultural an.

The present volume brings together current interdisciplinary research which adds up to an evolutionary theory of human knowledge, Le. evolutionary epistemology. It comprises ten papers, dealing with the basic concepts, approaches and data in evolutionary epistemology and discussing some of their most important consequences. Because I am convinced that criticism, if not confused with mere polemics, is apt to stimulate the maturation of a scientific or philosophical theory, I invited Reinhard Low to present his critical view of evolutionary epistemology and to indicate some limits of our evolutionary conceptions. The main purpose of this book is to meet the urgent need of both science and philosophy for a comprehensive up-to-date approach to the problem of knowledge, going beyond the traditional disciplinary boundaries of scientific and philosophical thought. Evolutionary epistemology has emerged as a naturalistic and science-oriented view of knowledge taking cognizance of, and compatible with, results of biological, psychological, anthropological and linguistic inquiries concerning the structure and development of man's cognitive apparatus. Thus, evolutionary epistemology serves as a frame work for many contemporary discussions of the age-old problem of human knowledge.

This book provides the fullest philosophical examination of theories of evolutionary epistemology now available. Here for the first time are found major statements of new theories, new applications, and many new critical explorations. The book is divided into four parts: Part I introduces several new approaches to evolutionary epistemology; Part II attempts to widen the scope of evolutionary epistemology, either by tackling more traditional epistemological issues, or by applying evolutionary models to new areas of inquiry such as the evolution of culture or of intentionality; Part III critically discusses specific problems in evolutionary epistemology; and Part IV deals with the relationship of evolutionary epistemology to the philosophy of mind. Because of its intellectual depth and its breadth of coverage, Issues in Evolutionary Epistemology will be an important text in the field for many years to come.

Evolutionary Epistemology, Language and CultureA Non-Adaptationist, Systems Theoretical ApproachSpringer Science & Business Media

Darwin Machines and the Nature of Knowledge

The Natural Foundations of Meaning and Symbolism

Music, Language, and Human Evolution

Sex, Race, Religion, and Other Matters

Open Questions in Quantum Physics

Our Knowledge of the Growth of Knowledge (Routledge Revivals)

A Non-Adaptationist, Systems Theoretical Approach

"Bartley and Radnitzky have done the philosophy of knowledge a tremendous service. Scholars now have a superb and up-to-date presentation of the fundamental ideas of evolutionary epistemology." --Philosophical Books

An anthology of essential writings that cover some of the most influential ideas about the philosophical implications of Darwinism, since the publication of "On the Origin of Species".

The first international volume on the topic of biosemiotics and linguistics. It aims to establish a new relationship between linguistics and biology as based on shared semiotic foundation.

Interdisciplinary perspectives on cultural evolution that reject meme theory in favor of a complex understanding of dynamic change over time How do cultures change? In recent decades, the concept of the meme, posited as a basic unit of culture analogous to the gene, has been central to debates about cultural transformation. Despite the appeal of meme theory, its simplification of complex interactions and other inadequacies as an explanatory framework raise more questions about cultural evolution than it answers. In Beyond the Meme, William C. Wimsatt and Alan C. Love assemble interdisciplinary perspectives on cultural evolution, providing a nuanced understanding of it as a process in which dynamic structures interact on different scales of size and time. By focusing on the full range of evolutionary processes across distinct contexts, from rice farming to scientific reasoning, this volume demonstrates how a thick understanding of change in culture emerges from multiple disciplinary vantage points, each of which is required to understand cultural evolution in all its complexity. The editors provide an extensive introductory essay to contextualize the volume, and Wimsatt contributes a separate chapter that systematically organizes the conceptual geography of cultural processes and phenomena. Any adequate account of the transmission, elaboration, and evolution of culture must, this volume argues, recognize the central roles that cognitive and social development play in cultural change and the complex interplay of technological, organizational, and institutional structures needed to enable and coordinate these processes. Contributors: Marshall Abrams, U of Alabama at Birmingham; Claes Andersson, Chalmers U of Technology; Mark A. Bedau, Reed College; James A. Evans, U of Chicago; Jacob G. Foster, U of California, Los Angeles; Michel Janssen, U of Minnesota; Sabina Leonelli, U of Exeter; Massimo Maiocchi, U of Chicago; Joseph D. Martin, U of Cambridge; Salikoko S. Mufwene, U of Chicago; Nancy J. Nersessian, Georgia Institute of Technology and Harvard U; Paul E. Smaldino, U of California, Merced; Anton Törnberg, U of Gothenburg; Petter Törnberg, U of Amsterdam; Gilbert B. Tostevin, U of Minnesota.

A Systems View

Exploring the Foundations of Science, Thought and Reality

an interdisciplinary perspective

Development and Structure in Cultural Evolution

Evolving Governance Across a Stressed Planet

Sociobiology of Communication

A Multiparadigm Program

Berwick and Chomsky draw on recent developments in linguistic theory to offer an evolutionary account of language and humans' remarkable, species-specific ability to acquire it. “ A loosely connected collection of four essays that will fascinate anyone interested in the extraordinary phenomenon of language. ” —New York Review of Books We are born crying, but those cries signal the first stirring of language. Within a year or so, infants master the sound system of their language; a few years after that, they are engaging in conversations. This remarkable, species-specific ability to acquire any human language— “ the language faculty ” —raises important biological questions about language, including how it has evolved. This book by two distinguished scholars—a computer scientist and a linguist—addresses the enduring question of the evolution of language. Robert Berwick and Noam Chomsky explain that until recently the evolutionary question could not be properly posed, because we did not have a clear idea of how to define “ language ” and therefore what it was that had evolved. But since the Minimalist Program, developed by Chomsky and others, we know the key ingredients of language and can put together an account of the evolution of human language and what distinguishes us from all other animals. Berwick and Chomsky discuss the biolinguistic perspective on language, which views language as a particular object of the biological world; the computational efficiency of language as a system of thought and understanding; the tension between Darwin's idea of gradual change and our contemporary understanding about evolutionary change and language; and evidence from nonhuman animals, in particular vocal learning in songbirds.

Edited by Kris Rutten, Stefaan Blancke, and Ronald Soetaert, Perspectives on Science and Culture explores the intersection between scientific understanding and cultural representation from an interdisciplinary perspective. Contributors to the volume analyze representations of science and scientific discourse from the perspectives of rhetorical criticism, comparative cultural studies, narratology, educational studies, discourse analysis, naturalized epistemology, and the cognitive sciences. The main objective of the volume is to explore how particular cognitive predispositions and cultural representations both shape and distort the public debate about scientific controversies, the teaching and learning of science, and the development of science itself. The theoretical background of the articles in the volume integrates C. P. Snow's concept of the two cultures (science and the humanities) and Jerome Bruner's confrontation between narrative and logico-scientific modes of thinking (i.e., the cognitive and the evolutionary approaches to human cognition).

This book examines the potential role of musicality in human evolution and its consequences for human culture. Drawing on a growing research in archaeology, anthropology, psychology, and musicology, it illustrates the inter-disciplinary necessity of accounting for the phenomenon of human music-making.

This volume presents essays by pioneering thinkers including Tyler Burge, Gregory Chaitin, Daniel Dennett, Barry Mazur, Nicholas Humphrey, John Searle and Ian Stewart. Together they illuminate the Map/Territory Distinction that underlies at the foundation of the scientific method, thought and the very reality itself. It is imperative to distinguish Map from the Territory while analyzing any subject but we often mistake map for the territory. Meaning for the Reference. Computational tool for what it computes. Representations are handy and tempting that we often end up committing the category error of over-marrying the representation with what is represented, so much so that the distinction between the former and the latter is lost. This error that has its roots in the pedagogy often generates a plethora of paradoxes/confusions which hinder the proper understanding of the subject. What are wave functions? Fields? Forces? Numbers? Sets? Classes? Operators? Functions? Alphabets and Sentences? Are they a part of our map (theory/representation)? Or do they actually belong to the territory (Reality)? Researcher, like a cartographer, clothes (or creates?) the reality by stitching multitudes of maps that simultaneously co-exist. A simple apple, for example, can be analyzed from several viewpoints beginning with evolution and biology, all the way down its microscopic quantum mechanical components. Is there a reality (or a real apple) out there apart from these maps? How do these various maps interact/intermingle with each other to produce a coherent reality that we interact with? Or do they not? Does our brain uses its own internal maps to facilitate “ physicist/mathematician ” in us to construct the maps about the external territories in turn? If so, what is the nature of these internal maps? Are there meta-maps? Evolution definitely fences our perception and thereby our ability to construct maps, revealing to us only those aspects beneficial for our survival. But the question is, to what extent? Is there a way out of the metaphorical Platonic cave erected around us by the nature? While “ Map is not the territory ” as Alfred Korzybski remarked, join us in this journey to know more, while we inquire on the nature and the reality of the maps which try to map the reality out there. The book also includes a foreword by Sir Roger Penrose and an afterword by Dagfinn Føllesdal.

Language and Social Cognition

Why Only Us

The Evolutionary Emergence of Language

The Routledge Handbook of Evolution and Philosophy

Concepts and Approaches in Evolutionary Epistemology

Historical Cognitive Linguistics

Towards an Evolutionary Theory of Knowledge

The book presents new and stimulating approaches to the study of language evolution and considers their implications for future research. Leading scholars from linguistics, primatology, anthroplogy, and cognitive science consider how language evolution can be understood by means of inference from the study of linked or analogous phenomena in language, animal behaviour, genetics, neurology, culture, and biology. In their introduction the editors show how these approaches can be interrelated and deployed together through their use of comparable forms of inference and the similar conditions they place on the use of evidence. The Evolutionary Emergence of Language will interest everyone concerned with this intriguing and important subject, including those in linguistics, biology, anthropology, archaeology, neurology, and cognitive science.

Communication is essential for all forms of social interaction, from parental care to mate choice and cooperation. This is evident for human societies but less obvious for bacterial biofilms, ant colonies or flocks of birds. The major disciplines of communication research have tried to identify common core principles, but syntheses have been few because historical barriers have limited interaction between different research fields. Sociobiology of Communication is a timely and novel synthesis. It bridges many of the gaps between proximate and ultimate levels of analysis, between empirical model systems, and between biology and the humanities. The book offers the complementary approaches of a distinguished group of authors spanning a large diversity of research programs, addressing, for example, the genetic basis of bacterial communication, dishonest communication in insect societies, sexual selection and network communication among colonial vertebrates. Other chapters explore the role of communication in genomic conflict and self-organisation, and how linguistics, psychology and philosophy may ultimately contribute to a biological understanding of human mate choice and the evolution of human societies. This highly interdisciplinary book highlights key examples of modern research to explore the genetic, neurobiological, physiological, chemical and behavioural basis of social communication. It identifies where consensus on the general principles is emerging and where the major future challenges are to be found. The book is therefore suitable for both for graduate students and professionals in evolutionary biology and behavioural ecology seeking novel inspiration, and for a wider academic audience, including social and medical scientists who would like to explore what evolutionary approaches can offer to their fields.

The volume explores the ways in which language change is studied within the framework of Cognitive Linguistics, a semantics-based theory of language production and perception. The eleven chapters explore two kinds of changes: firstly, those which involve mental prototypes or 'best instances' of particular concepts and extensions of these prototypes, and secondly, those which relate to conceptual networks, for example via metaphor or metonymy. More specifically, the papers address syntactic and lexical change, as well as the evolution of language and changes in the expression - usually metaphoric - of emotions. In presenting a wide range of current work of this kind, the volume demonstrates the value of cross-fertilization between historical and cognitive linguistics, and is intended to open the way for further related research. The included papers are of particular relevance to those working in metaphor theory and syntactic / semantic change within Cognitive Linguistics, but will also be of interest to other historical linguists and those studying cognitive semantics and metaphor from a synchronic viewpoint.

Due to its extraordinary predictive power and the great generality of its mathematical structure, quantum theory is able, at least in principle, to describe all the microscopic and macroscopic properties of the physical world, from the subatomic to the cosmological level. Nevertheless, ever since the Copen hagen and Gottingen schools in 1927 gave it the definitive formu lation, now commonly known as the orthodox interpretation, the theory has suffered from very serious logical and epistemologi cal problems. These shortcomings were immediately pointed out by some of the principal founders themselves of quantum theory, to wit, Planck, Einstein, Ehrenfest, Schrodinger, and de Broglie, and by the philosopher Karl Popper, who assumed a position of radical criticism with regard to the standard formulation of the theory. The aim of the participants in the workshop on Open Questions in Quantum Physics, which was held in Bari (Italy), in the Department of Physics of the University, during May 1983 and whose Proceedings are collected in the present volume, accord ingly was to discuss the formal, the physical and the epistemo logical difficulties of quantum theory in the light of recent crucial developments and to propose some possible resolutions of three basic conceptual dilemmas, which are posed respectively ~: (a) the physical developments of the Einstein-Podolsky-Rosen argument and Bell's theorem, i. e.

Biosemiotic Perspectives on Language and Linguistics

Popper or Wittgenstein?

Evolution and the Big Questions

Conceptual Challenges

Information and Meaning in Evolutionary Processes

Perspectives on Science and Culture

This book is intended to help transform epistemology - the traditional study of knowledge - into a rigorous discipline by removing conceptual roadblocks and developing formal tools required for a fully naturalized epistemology. The evolutionary approach which Harms favours begins with the common observation that if our senses and reasoning were not reliable, then natural selection would have eliminated them long ago. The challenge for some time has been how to transform these informal musings about evolutionary epistemology into a rigorous theoretical discipline capable of complementing current scientific studies of the evolution of cognition with a philosophically defensible account of meaning and justification.

This books aims to outline the scientific (biological) foundations of evolutionary epistemology, and to discuss its implications for humankind. Wuketits covers all aspects of evolutionary epistemology, including its empirical foundations and its philosophical and anthropological consequences, providng an accessible introduction with a minimum of jargon.

This title exposes and evaluates a set of conceptual disputes concerning what we might mean by culture, and how we should go about accounting for it. Its particular focus is a set of evolutionary approaches to the genesis of the human capacity for culture, to subsequent cultural change, and to the ways in which genetic and cultural change interact, or 'co-evolve'. The book as a whole argues that there is little realistic hope that the social sciences might become unified around an evolutionary synthesis. Instead the defence of evolutionary approaches to culture must be more modest in scope

Sverker Johansson has written an unusual book on language origins, with its emphasis on empirical evidence rather than theory-building. This is a book for the student or researcher who prefers solid data and well-supported conclusions, over speculative scenarios. Much that has been written on the origins of language is characterized by hypothesizing largely unconstrained by evidence. But empirical data do exist, and the purpose of this book is to integrate and review the available evidence from all relevant disciplines, not only linguistics but also, e.g., neurology, primatology, paleoanthropology, and evolutionary biology. The evidence is then used to constrain the multitude of scenarios for language origins, demonstrating that many popular hypotheses are untenable. Among the issues covered: (1) Human evolutionary history, (2) Anatomical prerequisites for language, (3) Animal communication and ape "language", (4) Mind and language, (5) The role of gesture, (6) Innateness, (7)

Selective advantage of language, (8) Proto-language.

Evolutionary Studies

Constraints on Hypotheses

Proceedings of the 6th International Conference (EVOLANG6) , Rome, Italy, 12-15 April 2006

Society, Technology, Language, and Religion

Evolutionary Epistemology, Rationality, and the Sociology of Knowledge

Evolutionary Epistemology and its Implications for Humankind

Beyond the Meme

Interdisciplinary perspectives on the evolutionary and biological roots of syntax, describing current research on syntax in fields ranging from linguistics to neurology. Syntax is arguably the most human-specific aspect of language. Despite the proto-linguistic capacities of some animals, syntax appears to be the last major evolutionary transition in humans that has some genetic

basis. Yet what are the elements to a scenario that can explain such a transition? In this book, experts from linguistics, neurology and neurobiology, cognitive psychology, ecology and evolutionary biology, and computer modeling address this question. Unlike most previous work on the evolution of language, Biological Foundations and Origin of Syntax follows through on a growing consensus among researchers that language can be profitably separated into a number of related and interacting but largely autonomous functions, each of which may have a distinguishable evolutionary history and neurological base. The contributors argue that syntax is such a function. The book describes the current state of research on syntax in different fields, with special emphasis on areas in which the findings of particular disciplines might shed light on problems faced by other disciplines. It defines areas where consensus has been established with regard to the nature, infrastructure, and evolution of the syntax of natural languages; summarizes and evaluates contrasting approaches in areas that remain controversial; and suggests lines for future research to resolve at least some of these disputed issues. Contributors Andrea Baronchelli, Derek Bickerton, Dorothy V. M. Bishop, Denis Bouchard, Robert Boyd, Jens Brauer, Ted Briscoe, David Caplan, Nick Chater, Morten H. Christiansen, Terrence W. Deacon, Francesco d'Errico, Anna Fedor, Julia Fischer, Angela D. Friederici, Tom Givón, Thomas Griffiths, Balázs Gulyás, Peter Hagoort, Austin Hilliard, James R. Hurford, Péter Ittész, Gerhard Jäger, Herbert Jäger, Edith Kaan, Simon Kirby, Natalia L. Komarova, Tatjana Nazir, Frederick Newmeyer, Kazuo Okanoya, Csaba Pléh, Peter J. Richerson, Luigi Rizzi, Wolf Singer, Mark Steedman, Luc Steels, Szabolcs Számadó, Eörs Szathmáry, Maggie Tallerman, Jochen Triesch, Stephanie Ann White

Is human nature something that the natural and social sciences aim to describe, or is it a pernicious fiction? What role, if any, does 'human nature' play in directing and informing scientific work? Can we talk about human nature without invoking-either implicitly or explicitly-a contrast with human culture? It might be tempting to think that the respectability of 'human nature' is an issue that divides natural and social scientists along disciplinary boundaries, but the truth is more complex. The contributors to this collection take very different stances with regard to the idea of human nature. They come from the fields of psychology, the philosophy of science, social and biological anthropology, evolutionary theory, and the study of animal cognition. Some of them are 'human nature' enthusiasts, some are sceptics, and some say that human nature is a concept with many faces, each of which plays a role in its own investigative niche. Some want to eliminate the notion altogether, some think it unproblematic, others want to retain it with reforming modifications. Some say that human nature is a target for investigation that the human sciences cannot do without, others argue that the term does far more harm than good. The diverse perspectives articulated in this book help to explain why we disagree about human nature, and what, if anything, might resolve that disagreement.

Anthony O'Hear takes a stand against the fashion for explaining human behaviour in terms of evolution. He maintains, controversially, that while the theory of evolution is successful in explaining the development of the natural world in general, it is of limited value when applied to the human world. Because of our reflectiveness and our rationality we take on goals and ideals which cannot be justified in terms of survival-promotion or reproductive advantage. O'Hear examines the nature of human self-consciousness, and argues that evolutionary theory cannot give a satisfactory account of such distinctive facets of human life as the quest for knowledge, moral sense, and the appreciation of beauty; in these we transcend our biological origins. It is our rationality that allows each of us to go beyond not only our biological but also our cultural inheritance: as the author says in the Preface, 'we are prisoners neither of our genes nor of the ideas we encounter as we each make our personal and individual way through life'.

Based on a comprehensive review of human and societal evolution the book develops an approach to conscious, self-guided evolution. In the course of the evolutionary journey of our species, there have been three seminal events. The first happened some seven million yeas ago, when our humanoid ancestors entered on the evolutionary scene. Their journey toward the second crucial event lasted over six million years when - as the greatest event of our evolutionary history - homo sapiens sapiens, started the revolutionary process of cultural evolution. Today, we have arrived at the threshold of the third major event, 'the revolution of conscious evolution,' when it becomes our responsibility to enter into the evolutionary design space and guide the evolutionary journey of our species. The book tells the story of the first six million years of the journey in just enough detail to understand how evolution had worked in times when it was primarily biological, driven by natural selection. With the human revolution some fifty thousand years ago, with the emergence of self-reflective consciousness, the evolutionary process transformed from biological into cultural. From this point on, the book follows the journey with detailed attention, in order to learn how cultural evolution works. The book is organized in three parts. Part One commences with an exposition of a brief history of the evolutionary idea through time with a focus on a review of the science of general evolution and specifically social and societal evolution. Next, the book unfolds the 'evolutionary story' of our species from the time when the first humanoids entered the evolutionary scene to our current era. Part Two develops a systems view of evolution, explores the ways and means of how evolution works, characterizes evolutionary consciousness and develops the idea of conscious evolution. Part Three builds upon the knowledge developed in the first two parts and sets forth the key conditions of conscious, self-guided evolution, elaborating the core condition, which is the acquisition of evolutionary competence through evolutionary learning. The focus of this part is on an approach to the design of evolutionary guidance systems that our families, neighborhoods, communities, organizations, social and societal systems can use to design the future they aspire to attain. The work is set aside from other statements in three important ways. It provides: (1) a comprehensive review of how evolution has worked with a focus on socio-cultural evolution, (2) an explanation of evolutionary consciousness and the conditions of engaging in conscious evolution, and (3) most significantly, it develops a detailed approach and a methodology to the design of evolutionary guidance systems.