

Evolutionary Epistemology Language And Culture A Non Adaptationist Systems Theoretical Approach Theory And Decision Library A

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.

In recent years, the relation between contemporary academic philosophy and evolutionary theory has become ever more active, multifaceted, and productive.

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The connection is a bustling two-way street. In one direction, philosophers of biology make significant contributions to theoretical discussions about the nature of evolution (such as "What is a species?"; "What is reproductive fitness?"; "Does selection operate primarily on genes?"; and "What is an evolutionary function?"). In the other direction, a broader group of philosophers appeal to Darwinian selection in an attempt to illuminate traditional philosophical puzzles (such as "How could a brain-state have representational content?"; "Are moral judgments justified?"; "Why do we enjoy fiction?"; and "Are humans invariably selfish?"). In grappling with these questions, this interdisciplinary collection includes cutting-edge examples from both directions of traffic. The thirty contributions, written exclusively for this volume, are divided into six sections: The Nature of Selection; Evolution and Information; Human Nature; Evolution and Mind; Evolution and Ethics; and Evolution, Aesthetics, and Art. Many of the contributing philosophers and psychologists are international leaders in their fields.

This is the first book to collect research on game-theoretic tools in the analysis of language with particular reference to semantics and pragmatics. Games are significant, because they pertain equally to pragmatics and semantics of natural language. The book provides an overview of the variety of ways in which game theory is used in the analysis of linguistic meaning and shows how games arise

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in pragmatic as well as semantic investigations.

Confucianism, Chinese History and Society is a collection of essays authored by world renowned scholars on Chinese studies, including Professor Ho Peng Yoke (Needham Research Institute), Professor Leo Ou-fan Lee (Harvard University), Professor Philip Y S Leung (Chinese University of Hong Kong), Professor Liu Ts'un-Yan (Australian National University), Professor Tu Wei-Ming (Harvard University), Professor Wang Gungwu (National University of Singapore) and Professor Yue Daiyun (Peking University). The volume covers many important themes and topics in Chinese Studies, including the Confucian perspective on human rights, Nationalism and Confucianism, Confucianism and the development of Science in China, crisis and innovation in contemporary Chinese cultures, plurality of cultures in the context of globalization, and comparative study of the city cultures in modern China. These essays were originally delivered at the Professor Wu Teh Yao Memorial Lectures. Wu Teh Yao (1917–1994) was an educator, political scientist, specialist in Confucianism and original drafter of the United Nation's Universal Declaration of Human Rights. "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

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The ability to communicate through language is such a fundamental part of human existence that we often take it for granted, rarely considering how sophisticated the process is by which we understand and make ourselves understood. In *The Extended Mind*, acclaimed author Robert K. Logan examines the origin, emergence, and co-evolution of language, the human mind, and culture. Building on his previous study, *The Sixth Language* (2000) and making use of emergence theory, Logan seeks to explain how language emerged to deal with the complexity of hominid existence brought about by tool-making, control of fire, social intelligence, coordinated hunting and gathering, and mimetic communication. The resulting emergence of language, he argues, signifies a fundamental change in the functioning of the human mind - a shift from percept-based thought to concept-based thought. From the perspective of the Extended Mind model, Logan provides an alternative to and critique of Noam Chomsky's approach to the origin of language. He argues that language can be treated as an organism that evolved to be easily acquired, obviating the need for the hard-wiring of Chomsky's Language Acquisition Device. In addition Logan shows how, according to this model, culture itself can be treated as an organism that has evolved to be easily attained, revealing the universality of human culture as well as providing an insight as to how altruism might have originated. Bringing timely

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insights to a fascinating field of inquiry, *The Extended Mind* will be sure to find a wide readership.

The present volume brings together current interdisciplinary research which adds up to an evolutionary theory of human knowledge, i.e. 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.

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This book is divided in two parts, the first of which shows how, beyond paleontology and systematics, macroevolutionary theories apply key insights from ecology and biogeography, developmental biology, biophysics, molecular phylogenetics and even the sociocultural sciences to explain evolution in deep time. In the second part, the phenomenon of macroevolution is examined with the help of real life-history case studies on the evolution of eukaryotic sex, the formation of anatomical form and body-plans, extinction and speciation events of marine invertebrates, hominin evolution and species conservation ethics. The book brings together leading experts, who explain pivotal concepts such as Punctuated Equilibria, Stasis, Developmental Constraints, Adaptive Radiations, Habitat Tracking, Turnovers, (Mass) Extinctions, Species Sorting, Major Transitions, Trends and Hierarchies – key premises that allow macroevolutionary epistemic frameworks to transcend microevolutionary theories that focus on genetic variation, selection, migration and fitness. Along the way, the contributing authors review ongoing debates and current scientific challenges; detail new and fascinating scientific tools and techniques that allow us to cross the classic borders between disciplines; demonstrate how their theories make it possible to extend the Modern Synthesis; present guidelines on how the macroevolutionary field could be further developed; and provide a rich view of just how it was that

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life evolved across time and space. In short, this book is a must-read for active scholars and because the technical aspects are fully explained, it is also accessible for non-specialists. Understanding evolution requires a solid grasp of above-population phenomena. Species are real biological individuals and abiotic factors impact the future course of evolution. Beyond observation, when the explanation of macroevolution is the goal, we need both evidence and theory that enable us to explain and interpret how life evolves at the grand scale.

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

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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.

One of the most distinguishing abilities that human beings display is the ability of turning almost everything into a clue to make a problem affordable in relation to what one knows and, most of all, to what one does not know. That is what characterizes humans as chance seekers. A poor pattern of reasoning and even our ignorance may help us make a decision, and eventually solve a problem. This is the rationale of biased rationality. However, not everything leads us always to a good decision. Some people are not satisfied with weak arguments or it-is-just-so strategies. They want something better. This second attitude points to a different form of rationality that takes advantage of the idea of distributed cognition. Basically, human beings improve their survival strategies by building cognitive niches capable of delivering potentially ever more symptomatic information. It is through various manipulations of the environment that we gain new and more reliable chances which can be used to de-bias our rationality.

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Through the laborious activity of cognitive niche construction, we come up with situations in which we are better afforded by our environment, and thus biases or fallacies cease to be appealing.

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

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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 use 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.

This volume comprises refereed papers and abstracts from the 6th International Conference on the Evolution of Language (EVLANG6). The biennial EVLANG conference focuses on the origins and evolution of human language, and brings together researchers from many disciplines including anthropology, archaeology,

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artificial life, biology, cognitive science, computer science, ethology, genetics, linguistics, neuroscience, palaeontology, primatology, and psychology. The collection presents the latest theoretical, experimental and modeling research on language evolution, and includes contributions from the leading scientists in the field, including T Fitch, V Gallese, S Mithen, D Parisi, A Piazza & L Cavali Sforza, R Seyfarth & D Cheney, L Steels, L Talmy and M Tomasello.

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

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linguists and those studying cognitive semantics and metaphor from a synchronic viewpoint.

This anthology is a compilation of the best contributions from Symbolic Species Conferences I, II (which took place in 2006, 2007). In 1997 the American anthropologist Terrence Deacon published *The Symbolic Species: The Coevolution of Language and the Brain*. The book is widely considered a seminal work in the subject of evolutionary cognition. However, Deacon's book was the first step – further steps have had to be taken. The proposed anthology is such an important associate. The contributions are written by a wide variety of scholars each with a unique view on evolutionary cognition and the questions raised by Terrence Deacon - emergence in evolution, the origin of language, the semiotic 'missing link', Peirce's semiotics in evolution and biology, biosemiotics, evolutionary cognition, Baldwinian evolution, the neuroscience of linguistic capacities as well as phylogeny of the homo species, primatology, embodied cognition and knowledge types.

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 Copenhagen

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and Gottingen schools in 1927 gave it the definitive formulation, now commonly known as the orthodox interpretation, the theory has suffered from very serious logical and epistemological 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, accordingly was to discuss the formal, the physical and the epistemological 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.

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This book attempts to address an interrelated set of issues about the emergence of linguistic abilities in the child. The various chapters intend to shed light on a

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particular and critical period in language development: the first three years of life. It is generally assumed in the field of the ontogeny of language that the child's first years of life are particularly crucial. This period is even sometimes considered as predictive at least in the short term, of the later abilities to communicate. During these first three years, gestures, phonetico-phonological, lexical and morpho-syntactic skills chronologically emerge. The main goal of this book is to address the issue of continuity between the developments of the different language components, by the means of recent findings of experts in each domain. Furthermore, the originality of this selection of chapters is to broaden the scope of the discussion by including papers dealing with related phenomena but from different perspectives such as phylogeny, pathology and animal communication. This book primarily concerns graduate students and researchers in the field of language acquisition but the audience can also include scholars from evolution of language, language pathology, animal communication, ontogeny/phylogeny research fields.

"This book presents recent research efforts in Artificial Intelligence about building artificial systems capable of performing cognitive tasks. A fundamental issue addressed in this book is if these cognitive processes can have any meaningfulness to the artificial system being built"--Provided by publisher.

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How did human minds become so different from those of other animals? What accounts for our capacity to understand the way the physical world works, to think ourselves into the minds of others, to gossip, read, tell stories about the past, and imagine the future? These questions are not new: they have been debated by philosophers, psychologists, anthropologists, evolutionists, and neurobiologists over the course of centuries. One explanation widely accepted today is that humans have special cognitive instincts. Unlike other living animal species, we are born with complicated mechanisms for reasoning about causation, reading the minds of others, copying behaviors, and using language. Cecilia Heyes agrees that adult humans have impressive pieces of cognitive equipment. In her framing, however, these cognitive gadgets are not instincts programmed in the genes but are constructed in the course of childhood through social interaction. Cognitive gadgets are products of cultural evolution, rather than genetic evolution. At birth, the minds of human babies are only subtly different from the minds of newborn chimpanzees. We are friendlier, our attention is drawn to different things, and we have a capacity to learn and remember that outstrips the abilities of newborn chimpanzees. Yet when these subtle differences are exposed to culture-soaked human environments, they have enormous effects. They enable us to upload distinctively human ways of thinking from the social world around us. As Cognitive Gadgets makes clear, from birth our malleable human minds can learn through culture not only what to think but how to think it.

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This book is a state-of-the-art review on the Physics of Emergence. The challenge of complexity is to focus on the description levels of the observer in context-dependent situations. Emergence is not only an heuristic approach to complexity, but it also urges us to face a much deeper question -- what do we think is fundamental in the physical world? This volume provides significant and pioneering contributions based on rigorous physical and mathematical approaches -- with particular reference to the syntax of Quantum Physics and Quantum Field Theory -- dealing with the bridge-laws and their limitations between Physics and Biology, without failing to discuss the involved epistemological features. Physics of Emergence and Organization is an interdisciplinary source of reference for students and experts whose interests cross over to complexity issues.

We are living through a unique moment of transition, marked by a frenetic cycle of invention, construction, consumption and destruction. However, there is more to this transition than globalization, argue the authors of this unique and penetrating study. In their highly innovative approach, they set this transition against a broader evolutionary 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.

Nowadays, philosophy and methodology of science appear as a combination of novelty and continuity. This blend is clear both in the general approaches to science (those

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thought of as any science) and in the specific perspectives on every science, either formal or empirical. There are new topics for philosophical reflection, such as key issues in philosophy of medicine and central problems raised by neuroscience. Thus, new contents have brought attention to aspects that previously went almost unnoticed. In addition, there are new angles for philosophical study, such as the repercussion of society on scientific activity (in aims, processes, and results). But the background of the main philosophical and methodological trends of the twentieth century is, in many ways, still in place.

This interdisciplinary volume provides a novel perspective on social aspects of language. It views ways of how the acquisition and management of knowledge of ourselves and others is reflected in language. Hence, by combining the two disciplines social cognition and linguistics, it proceeds beyond cognitive linguistics by examining language from a wider perspective including cultural issues.

This book offers a Buddhist perspective on the conflict between religion and science in contemporary western society. Examining Buddhist history, authors Francisca Cho and Richard K. Squier offer a comparative analysis of Buddhist and western scientific epistemologies that transcends the limitations of non-Buddhist approaches to the subject of religion and science. The book is appropriate for undergraduates, graduate students, and researchers interested in comparative religion or in the intersection of religion and science and Buddhist Studies.

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This volume contains pedagogical and elementary introductions to genetics for mathematicians and physicists as well as to mathematical models and techniques of population dynamics. It also offers a physicist's perspective on modeling biological processes. Each chapter starts with an overview followed by the recent results obtained by authors. Lectures are self-contained and are devoted to various phenomena such as the evolution of the genetic code and genomes, age-structured populations, demography, sympatric speciation, the Penna model, Lotka-Volterra and other predator-prey models, evolutionary models of ecosystems, extinctions of species, and the origin and development of language. Authors analyze their models from the computational and mathematical points of view.

Science is a dynamic process in which the assimilation of new phenomena, perspectives, and hypotheses into the scientific corpus takes place slowly. The apparent disunity of the sciences is the unavoidable consequence of this gradual integration process. Some thinkers label this dynamical circumstance a 'crisis'. However, a retrospective view of the practical results of the scientific enterprise and of science itself, grants us a clear view of the unity of the human knowledge seeking enterprise. This book provides many arguments, case studies and examples in favor of the unity of science. These contributions touch upon various scientific perspectives and disciplines such as: Physics, Computer Science, Biology, Neuroscience, Cognitive Psychology, and Economics.

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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.

This volume has its already distant origin in an international conference on Evolutionary Epistemology the editors organized at the University of Ghent in November 1984. This conference aimed to follow up the endeavor started at the ERISS (Epistemologically Relevant Internalist Sociology of Science) conference organized by Don Campbell and Alex Rosenberg at Cazenovia Lake, New York, in June 1981, whilst injecting the gist of certain current continental intellectual developments into a debate whose focus, we thought, was in danger of being

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narrowed too much, considering the still underdeveloped state of affairs in the field. Broadly speaking, evolutionary epistemology today consists of two interrelated, yet qualitatively distinct investigative efforts. Both are drawing on Darwinian concepts, which may explain why many people have failed to discriminate them. One is the study of the evolution of the cognitive apparatus of living organisms, which is first and foremost the province of biologists and psychologists (H. C. Plotkin, Ed. , Learning, Development, and Culture: Essays in Evolutionary Epistemology, New York, Wiley, 1984), although quite a few philosophers - professional or vocational - have also felt the need to express themselves on this vast subject (F. M. Wuketits, Ed. , Concepts and Approaches in Evolutionary Epistemology, Dordrecht Boston, Reidel, 1984). The other approach deals with the evolution of science, and has been dominated hitherto by (allegedly) 'naturalized' philosophers; no book-length survey of this literature is available at present.

This book 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, providing an accessible introduction with a minimum of jargon.

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Learn and survive. Behind this simple equation lies a revolution in the study of knowledge, which has left the halls of philosophy for the labs of science. This book offers a cogent account of what such a move does to our understanding of the nature of learning, rationality, and intelligence. Bringing together evolutionary biology, psychology, and philosophy, Henry Plotkin presents a new science of knowledge, one that traces an unbreakable link between instinct and our ability to know. Contrary to the modern liberal idea that knowledge is something derived from experience, this science shows us that what we know is what our nature allows us to know, what our instincts tell us we must know. Since our ability to know our world depends primarily on what we call intelligence, intelligence must be understood as an extension of instinct. Drawing on contemporary evolutionary theory, especially notions of hierarchical structure and universal Darwinism, Plotkin tells us that the capacity for knowledge, which is what makes us human, is deeply rooted in our biology and, in a special sense, is shared by all living things. This leads to a discussion of animal and human intelligence as well as an appraisal of what an instinct-based capacity for knowledge might mean to our understanding of language, reasoning, emotion, and culture. The result is nothing less than a three-dimensional theory of our nature, in which all knowledge is adaptation and all adaptation is a specific form of knowledge.

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This cross-disciplinary volume provides an overview of how complexity theory and the tools of statistical mechanics can be applied to linguistic problems to help reveal language groups, and to model the evolution and competition of languages in space and time. Illustrated with a series of case studies and worked examples, it presents an interdisciplinary framework to enable researchers from the mathematical, physical and social sciences to collaborate on linguistic problems. It demonstrates the complexity of linguistic databases and provides a mathematical toolkit for analyzing and extracting useful information from them - helping to conceptualize empirical facts better than a mere ethnographic view. Providing an important bridge to facilitate collaboration between linguists and mathematical modelers, this book will stimulate new ideas and avenues for research, and will form a valuable resource for advanced students and academics working across complex systems, sociolinguistics, and language dynamics.

There is a paradox when it comes to Darwinian ideas within the academy. On one hand, Darwin's theories have famously changed the foundational ideas related to the origins of life, shaping entire disciplines in the biological sciences. On the other hand, people in educated societies across the globe today are famously misinformed and uneducated about Darwinian principles and ideas.

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Applications of evolutionary theory outside the traditional areas of biology have been slow to progress, and scholars doing such work regularly run into all kinds of political backlash. However, a slow but steady push to advance the teaching of evolution across academic disciplines has been under way for more than a decade. This book serves to integrate the vast literature in the interdisciplinary field of Evolutionary Studies (EvoS), providing clear examples of how evolutionary concepts relate to all facets of life. Further, this book provides chapters dedicated to the processes associated with an EvoS education, including examples of how an interdisciplinary approach to evolutionary theory has been implemented successfully at various colleges, universities, and degree programs. This book also offers chapters outlining a variety of applications to an evolution education, including improved sustainable development, medical practices, and creative and critical thinking skills. Exploring controversies surrounding evolution education, this volume provides a roadmap to asking and answering Darwinian questions across all areas of intellectual inquiry.

Includes papers, which introduce and elaborate upon the concept of sociocultural situatedness, understood as the way in which minds and cognitive processes are shaped, both individually and collectively, and by their interaction with culturally contextualized structures and practices.

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This book offers a comprehensive philosophical investigation of ignorance. Using a set of cognitive tools and models, it discusses features that can describe a state of ignorance if linked to a particular type of cognition affecting the agent's social behavior, belief system, and inferential capacity. The author defines ignorance as a cognitive condition that can be either passively (and unconsciously) borne by an agent or actively nurtured by him or her, and a condition that entails epistemic limitations (which can be any lack of knowledge, belief, information or data) that affect the agent's behavior, belief system, and inferential capacity. The author subsequently describes the ephemeral nature of ignorance, its tenacity in the development of human inferential and cognitive performance, and the possibility of sharing ignorance among human agents within the social dimension. By combining previous frameworks such as the naturalization of logic, the eco-cognitive perspective in philosophy and concepts from Peircean epistemology, and adding original ideas derived from the author's own research and reflections, the book develops a new cognitive framework to help understand the nature of ignorance and its influence on the human condition.

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

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shared semiotic foundation.

This volume tackles crucial questions about the puzzle of human origins and human distinctiveness related to the evolution of human wisdom. In doing so it offers a novel methodological approach to the dialogue between theology and evolutionary science.

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

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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.

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,

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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).

For the first time in history, scholars working on language and culture from within an evolutionary epistemological framework, and thereby emphasizing complementary or deviating theories of the Modern Synthesis, were brought together. Of course there have been excellent conferences on Evolutionary Epistemology in the past, as well as numerous conferences on the topics of Language and Culture. However, until now these disciplines had not been brought together into one all-encompassing conference. Moreover, previously there never had been such stress on alternative and complementary theories of the Modern Synthesis. Today we know that natural selection and evolution are far from synonymous and that they do not explain isomorphic phenomena in the world. 'Taking Darwin seriously' is the way to go, but today the time has come to take alternative and complementary theories that developed after the Modern Synthesis, equally seriously, and, furthermore, to examine how language and culture can merit from these diverse disciplines. As this volume will make clear, a specific inter- and transdisciplinary approach is one of the next crucial steps that needs to be taken, if we ever want to unravel the secrets of phenomena such as language and

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culture.

The decreasing capacity to govern complex social processes results in negative trends that breach system thresholds in all main social domains with extreme economic stratification of society. Independent studies steadily report that a strong majority of the world's population, between 60% and 80%, already feels excluded and no longer represented by their governments. The two prevailing concepts of complexity seem to overlook the central importance of mesoscopic complexity. Socially complex conditions call for a new kind of social thought specifically developed for a blinded generation that must be as different from modern and postmodern thoughts, as they were different from their middle-age precedents. 'Complex Society: In the Middle of a Middle World', addresses the concerns of the excluded majority by explaining how present complex social conditions work in favor of generational aspirations to achieve a more positive future. In the geometry of thinking, a complex matter is not comprehensible objectively, but only by evaluating overlaps between complexity domains on their periphery, which is in the area of their inconsistencies. The book first develops an evaluative methodology for studying complex social matters and then tests it with three case studies that reflect some of the most pressing problems in contemporary societies: aggregation problem, integration problem, and organization problem. The obtained findings give grounds for the depiction of an outline for the 'anti-postmodern' ordering of contemporary societies. This ground-breaking text will be of particular interest for

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graduate and post-graduate level of social sciences, evaluators of project, program and policy impact evaluation, evaluators of philosophy of science, as well as methodologists of social research and public governance.

Written for non-experts, this volume introduces the mechanisms that underlie reticulate evolution. Chapters are either accompanied with glossaries that explain new terminology or timelines that position pioneering scholars and their major discoveries in their historical contexts. The contributing authors outline the history and original context of discovery of symbiosis, symbiogenesis, lateral gene transfer, hybridization or divergence with gene flow and infectious heredity. By applying key insights from the areas of molecular (phylo)genetics, microbiology, virology, ecology, systematics, immunology, epidemiology and computational science, they demonstrate how reticulate evolution impacts successful survival, fitness and speciation. Reticulate evolution brings forth a challenge to the standard Neo-Darwinian framework, which defines life as the outcome of bifurcation and ramification patterns brought forth by the vertical mechanism of natural selection. Reticulate evolution puts forward a pattern in the tree of life that is characterized by horizontal mergings and lineage crossings induced by symbiosis, symbiogenesis, lateral gene transfer, hybridization or divergence with gene flow and infective heredity, making the “tree of life” look more like a “web of life.” On an epistemological level, the various means by which hereditary material can be transferred horizontally challenges our classic notions of units and levels of evolution,

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fitness, modes of transmission, linearity, communities and biological individuality. The case studies presented examine topics including the origin of the eukaryotic cell and its organelles through symbiogenesis; the origin of algae through primary and secondary symbiosis and dinoflagellates through tertiary symbiosis; the superorganism and holobiont as units of evolution; how endosymbiosis induces speciation in multicellular life forms; transferrable and non-transferrable plasmids and how they symbiotically interact with their host; the means by which pro- and eukaryotic organisms transfer genes laterally (bacterial transformation, transduction and conjugation as well as transposons and other mobile genetic elements); hybridization and divergence with gene flow in sexually-reproducing individuals; current (human) microbiome and virome studies that impact our knowledge concerning the evolution of organismal health and acquired immunity; and how symbiosis and symbiogenesis can be modelled in computational evolution.

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