

# Cognitive Gadgets The Cultural Evolution Of Thinking

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*Social Learning* William Hoppitt 2013-07-21 Many animals, including humans, acquire valuable skills and knowledge by copying others. Scientists refer to this as social learning. It is one of the most exciting and rapidly developing areas of behavioral research and sits at the interface of many academic disciplines, including biology, experimental psychology, economics, and cognitive neuroscience. Social Learning provides a comprehensive, practical guide to the research methods of this important emerging field. William Hoppitt and Kevin Laland define the mechanisms thought to underlie social learning and demonstrate how to distinguish them experimentally in the laboratory. They present techniques for detecting and quantifying social learning in nature, including statistical modeling of the spatial distribution of behavior traits. They also describe the latest theory and empirical findings on social learning strategies, and introduce readers to mathematical methods and models used in the study of cultural evolution. This book is an indispensable tool for researchers and an essential primer for students. Provides a comprehensive, practical guide to social learning research Combines theoretical and empirical approaches Describes techniques for the laboratory and the field Covers social learning mechanisms and strategies, statistical modeling techniques for field data, mathematical modeling of cultural evolution, and more

*In the Light of Evolution* National Academy of Sciences 2017-01-01 Biodiversity-the genetic variety of life-is an exuberant product of the evolutionary past, a vast human-supportive resource (aesthetic, intellectual, and material) of the present, and a rich legacy to cherish and preserve for the future. Two urgent challenges, and opportunities, for 21st-century science are to gain deeper insights into the evolutionary processes that foster biotic diversity, and to translate that understanding into workable solutions for the regional and global crises that biodiversity currently faces. A grasp of evolutionary principles and processes is important in other societal arenas as well, such as education, medicine, sociology, and other applied fields including agriculture, pharmacology, and biotechnology. The ramifications of evolutionary thought also extend into learned realms traditionally reserved for philosophy and religion. The central goal of the In the Light of Evolution (ILE) series is to promote the evolutionary sciences through state-of-the-art colloquia-in the series of Arthur M. Sackler colloquia sponsored by the National Academy of Sciences-and their published proceedings. Each installment explores evolutionary perspectives on a particular biological topic that is scientifically intriguing but also has special relevance to contemporary societal issues or challenges. This tenth and final edition of the In the Light of Evolution series focuses on recent developments in phylogeographic research and their relevance to past accomplishments and future research directions.

**Becoming Human** Michael Tomasello 2019-01-07 Winner of the William James Book Award "Magisterial...Makes an impressive argument that most distinctly human traits are established early in childhood and that the general chronology in which these traits appear can at least—and at last—be identified." —Wall Street Journal "Theoretically daring and experimentally ingenious, *Becoming Human* squarely tackles the abiding question of what makes us human." —Susan Gelman, University of Michigan Virtually all theories of how humans have become such a distinctive species focus on evolution. *Becoming Human* proposes a complementary theory of human uniqueness, focused on development. Building on the seminal ideas of Vygotsky, it explains how those things that make us most human are constructed during the first years of a child's life. In this groundbreaking work, Michael Tomasello draws from three decades of

experimental research with chimpanzees, bonobos, and children to propose a new framework for psychological growth between birth and seven years of age. He identifies eight pathways that differentiate humans from their primate relatives: social cognition, communication, cultural learning, cooperative thinking, collaboration, prosociality, social norms, and moral identity. In each of these, great apes possess rudimentary abilities, but the maturation of humans' evolved capacities for shared intentionality transform these abilities into uniquely human cognition and sociality.

**Big Gods** Ara Norenzayan 2015-08-25 Examines how the belief in gods has led to cooperation and sometimes conflict between groups. The author also looks at how some cooperative societies have developed without belief in gods.

**Human Evolution Beyond Biology and Culture** Jeroen C. J. M. van den Bergh 2018-10-18 A complete account of evolutionary thought in the social, environmental and policy sciences, creating bridges with biology.

**Culture, Mind, and Brain** Laurence J. Kirmayer 2020-09-24 Recent neuroscience research makes it clear that human biology is cultural biology - we develop and live our lives in socially constructed worlds that vary widely in their structure values, and institutions. This integrative volume brings together interdisciplinary perspectives from the human, social, and biological sciences to explore culture, mind, and brain interactions and their impact on personal and societal issues. Contributors provide a fresh look at emerging concepts, models, and applications of the co-constitution of culture, mind, and brain. Chapters survey the latest theoretical and methodological insights alongside the challenges in this area, and describe how these new ideas are being applied in the sciences, humanities, arts, mental health, and everyday life. Readers will gain new appreciation of the ways in which our unique biology and cultural diversity shape behavior and experience, and our ongoing adaptation to a constantly changing world.

**Metazoa** Peter Godfrey-Smith 2020-11-10 "Enthralling . . . breathtaking . . . *Metazoa* brings an extraordinary and astute look at our own mind's essential link to the animal world." —The New York Times Book Review (Editors' Choice) "A great book . . . [Godfrey-Smith is] brilliant at describing just what he sees, the patterns of behaviour of the animals he observes." —Nigel Warburton, Five Books The scuba-diving philosopher who wrote *Other Minds* explores the origins of animal consciousness Dip below the ocean's surface and you are soon confronted by forms of life that could not seem more foreign to our own: sea sponges, soft corals, and serpulid worms, whose rooted bodies, intricate geometry, and flower-like appendages are more reminiscent of plant life or even architecture than anything recognizably animal. Yet these creatures are our cousins. As fellow members of the animal kingdom—the Metazoa—they can teach us much about the evolutionary origins of not only our bodies, but also our minds. In his acclaimed 2016 book, *Other Minds*, the philosopher and scuba diver Peter Godfrey-Smith explored the mind of the octopus—the closest thing to an intelligent alien on Earth. In *Metazoa*, Godfrey-Smith expands his inquiry to animals at large, investigating the evolution of subjective experience with the assistance of far-flung species. As he delves into what it feels like to perceive and interact with the world as other life-forms do, Godfrey-Smith shows that the appearance of the animal body well over half a billion years ago was a profound innovation that set life upon a new path. In accessible, riveting prose, he charts the ways that subsequent evolutionary developments—eyes that track, for example, and bodies that move through and manipulate the environment—shaped the subjective lives of

animals. Following the evolutionary paths of a glass sponge, soft coral, banded shrimp, octopus, and fish, then moving onto land and the world of insects, birds, and primates like ourselves, Metazoa gathers their stories together in a way that bridges the gap between mind and matter, addressing one of the most vexing philosophical problems: that of consciousness. Combining vivid animal encounters with philosophical reflections and the latest news from biology, Metazoa reveals that even in our high-tech, AI-driven times, there is no understanding our minds without understanding nerves, muscles, and active bodies. The story that results is as rich and vibrant as life itself.

**Introduction to Graphic Design** Aaris Sherin 2017-11-02 For a great foundation as a graphic design student, look no further than Aaris Sherin's Introduction to Graphic Design. Sherin will introduce you to the formal structure of graphic design, so you can understand and utilise the main techniques of your chosen profession, and learn how they apply to print and screen-based projects. Whether you need to conceptualise a new poster, develop an exciting advertisement, structure an app or create eye-catching signage, chapters can be read in any order you choose, depending on which area you wish to concentrate. Whatever your approach, you'll be encouraged to use critical thinking, visual exploration and understand the special relationship graphic designers have to creative problem solving. There are also chapters devoted to imagery, color, and typography, using a thematic approach to creative problem-solving. With over 500 images showing examples from international designers, helpful diagrams, highlighted key terms and concepts, Design in Action case studies, exercises and chapter-by-chapter Dos and Don'ts, Introduction to Graphic Design will give newcomers to graphic design the confidence to give visual form to concepts and ideas.

Speaking Our Minds Thom Scott-Phillips 2014-11-03 Language is an essential part of what makes us human. Where did it come from? How did it develop into the complex system we know today? And what can an evolutionary perspective tell us about the nature of language and communication? Drawing on a range of disciplines including cognitive science, linguistics, anthropology and evolutionary biology, Speaking Our Minds explains how language evolved and why we are the only species to communicate in this way. Written by a rising star in the field, this groundbreaking book is required reading for anyone interested in understanding the origins and evolution of human communication and language.

*Perception, Causation, and Objectivity* Johannes Roessler 2011-07-14 Leading philosophers and psychologists offer a rigorous assessment of the commonsense view that perceptual experience is an immediate awareness of mind-independent objects. They examine the nature of perception, its role in the acquisition of knowledge, the role of causation in perception, and how perceptual understanding develops in humans.

*Sociocognitive Foundations of Educational Measurement* Robert J. Mislevy 2018-04-09 Several key developments challenge the field of educational measurement today: demands for tests at larger scales with higher stakes, an improved understanding of how people develop capabilities, and new technologies for interactive digital assessments. Sociocognitive Foundations of Educational Measurement integrates new developments in educational measurement and educational psychology in order to provide researchers, testing professionals, and students with an innovative sociocognitive perspective on assessment. This comprehensive volume begins with a broad explanation of the sociocognitive perspective and the foundations of assessment, then provides a series of focused applications to major topics such as assessment arguments, validity, fairness, interactive assessment, and a conception of "measurement" in educational assessment. Classical test theory, item response theory, categorical models, mixture models, cognitive diagnosis models, and Bayesian networks are explored from the resulting perspective. Ideal for specialists in these areas, graduate students, developers, and scholars in both educational measurement and fields that contribute to a sociocognitive perspective, this book consolidates nearly a decade of research into a fresh perspective on educational measurement.

Philosophy and Memory Traces John Sutton 1998-03-05 Philosophy and Memory Traces defends two theories of autobiographical memory. One is a bewildering historical view of memories as dynamic patterns in fleeting animal spirits, nervous fluids which rummaged through the pores of brain and body. The other is new connectionism, in which memories are 'stored' only superpositionally, and reconstructed rather than reproduced. Both models, argues John Sutton, depart from static archival metaphors by employing distributed representation, which brings interference and confusion between memory traces. Both raise urgent issues about control of the personal past, and about relations between self and body. Sutton

demonstrates the role of bizarre body fluids in moral physiology, as philosophers from Descartes and Locke to Coleridge struggled to control their own innards and impose cognitive discipline on 'the phantasmal chaos of association'. Going on to defend connectionism against Fodor and critics of passive mental representations, he shows how problems of the self are implicated in cognitive science.

The Evolved Apprentice Kim Sterelny 2014-08-29 A new theory of the evolution of human cognition and human social life that emphasizes the role of information sharing across generations. Over the last three million years or so, our lineage has diverged sharply from those of our great ape relatives. Change has been rapid (in evolutionary terms) and pervasive. Morphology, life history, social life, sexual behavior, and foraging patterns have all shifted sharply away from those of the other great apes. In The Evolved Apprentice, Kim Sterelny argues that the divergence stems from the fact that humans gradually came to enrich the learning environment of the next generation. Humans came to cooperate in sharing information, and to cooperate ecologically and reproductively as well, and these changes initiated positive feedback loops that drove us further from other great apes. Sterelny develops a new theory of the evolution of human cognition and human social life that emphasizes the gradual evolution of information-sharing practices across generations and how these practices transformed human minds and social lives. Sterelny proposes that humans developed a new form of ecological interaction with their environment, cooperative foraging. The ability to cope with the immense variety of human ancestral environments and social forms, he argues, depended not just on adapted minds but also on adapted developmental environments.

**Sense and Nonsense** Kevin N. Laland 2011-04-07 This book asks whether evolution can help us to understand human behaviour and explores diverse evolutionary methods and arguments. It provides a short, readable introduction to the science behind the works of Dawkins, Dennett, Wilson and Pinker. It is widely used in undergraduate courses around the world.

**Connected** Nicholas A. Christakis 2009-09-28 Celebrated scientists Nicholas Christakis and James Fowler explain the amazing power of social networks and our profound influence on one another's lives. Your colleague's husband's sister can make you fat, even if you don't know her. A happy neighbor has more impact on your happiness than a happy spouse. These startling revelations of how much we truly influence one another are revealed in the studies of Dr. Christakis and Fowler, which have repeatedly made front-page news nationwide. In Connected, the authors explain why emotions are contagious, how health behaviors spread, why the rich get richer, even how we find and choose our partners. Intriguing and entertaining, Connected overturns the notion of the individual and provides a revolutionary paradigm-that social networks influence our ideas, emotions, health, relationships, behavior, politics, and much more. It will change the way we think about every aspect of our lives.

**Don't Believe a Word: The Surprising Truth About Language** David Shariatmadari 2020-01-07 A linguist's entertaining and highly informed guide to what languages are and how they function. Think you know language? Think again. There are languages that change when your mother-in-law is present. The language you speak could make you more prone to accidents. Swear words are produced in a special part of your brain. Over the past few decades, we have reached new frontiers of linguistic knowledge. Linguists can now explain how and why language changes, describe its structures, and map its activity in the brain. But despite these advances, much of what people believe about language is based on folklore, instinct, or hearsay. We imagine a word's origin is its "true" meaning, that foreign languages are full of "untranslatable" words, or that grammatical mistakes undermine English. In Don't Believe A Word, linguist David Shariatmadari takes us on a mind-boggling journey through the science of language, urging us to abandon our prejudices in a bid to uncover the (far more interesting) truth about what we do with words. Exploding nine widely held myths about language while introducing us to some of the fundamental insights of modern linguistics, Shariatmadari is an energetic guide to the beauty and quirkiness of humanity's greatest achievement.

The Emotional Mind Stephen T. Asma 2019-04-15 For 200 million years before humans developed a capacity to reason, the emotional centers of the brain were hard at work. Stephen Asma and Rami Gabriel help us understand the evolution of the mind by exploring this more primal capability that we share with other animals: the power to feel, which is the root of so much that makes us uniquely human.

*Cooperation and Its Evolution* Kim Sterelny 2013-02-22 Essays from a range of disciplinary perspectives show

the central role that cooperation plays in structuring our world. This collection reports on the latest research on an increasingly pivotal issue for evolutionary biology: cooperation. The chapters are written from a variety of disciplinary perspectives and utilize research tools that range from empirical survey to conceptual modeling, reflecting the rich diversity of work in the field. They explore a wide taxonomic range, concentrating on bacteria, social insects, and, especially, humans. Part I ("Agents and Environments") investigates the connections of social cooperation in social organizations to the conditions that make cooperation profitable and stable, focusing on the interactions of agent, population, and environment. Part II ("Agents and Mechanisms") focuses on how proximate mechanisms emerge and operate in the evolutionary process and how they shape evolutionary trajectories. Throughout the book, certain themes emerge that demonstrate the ubiquity of questions regarding cooperation in evolutionary biology: the generation and division of the profits of cooperation; transitions in individuality; levels of selection, from gene to organism; and the "human cooperation explosion" that makes our own social behavior particularly puzzling from an evolutionary perspective.

**Cultural Evolution** Peter J. Richerson 2013-11-01 Leading scholars report on current research that demonstrates the central role of cultural evolution in explaining human behavior. Over the past few decades, a growing body of research has emerged from a variety of disciplines to highlight the importance of cultural evolution in understanding human behavior. Wider application of these insights, however, has been hampered by traditional disciplinary boundaries. To remedy this, in this volume leading researchers from theoretical biology, developmental and cognitive psychology, linguistics, anthropology, sociology, religious studies, history, and economics come together to explore the central role of cultural evolution in different aspects of human endeavor. The contributors take as their guiding principle the idea that cultural evolution can provide an important integrating function across the various disciplines of the human sciences, as organic evolution does for biology. The benefits of adopting a cultural evolutionary perspective are demonstrated by contributions on social systems, technology, language, and religion. Topics covered include enforcement of norms in human groups, the neuroscience of technology, language diversity, and prosociality and religion. The contributors evaluate current research on cultural evolution and consider its broader theoretical and practical implications, synthesizing past and ongoing work and sketching a roadmap for future cross-disciplinary efforts. Contributors Quentin D. Atkinson, Andrea Baronchelli, Robert Boyd, Briggs Buchanan, Joseph Bulbulia, Morten H. Christiansen, Emma Cohen, William Croft, Michael Cysouw, Dan Dediu, Nicholas Evans, Emma Flynn, Pieter François, Simon Garrod, Armin W. Geertz, Herbert Gintis, Russell D. Gray, Simon J. Greenhill, Daniel B. M. Haun, Joseph Henrich, Daniel J. Hruschka, Marco A. Janssen, Fiona M. Jordan, Anne Kandler, James A. Kitts, Kevin N. Laland, Laurent Lehmann, Stephen C. Levinson, Elena Lieven, Sarah Mathew, Robert N. McCauley, Alex Mesoudi, Ara Norenzayan, Harriet Over, Jürgen Renn, Victoria Reyes-García, Peter J. Richerson, Stephen Shennan, Edward G. Slingerland, Dietrich Stout, Claudio Tennie, Peter Turchin, Carel van Schaik, Matthijs Van Veelen, Harvey Whitehouse, Thomas Widlok, Polly Wiessner, David Sloan Wilson

**From Signal to Symbol** Ronald Planer 2021-10-12 A novel account of the evolution of language and the cognitive capacities on which language depends. In *From Signal to Symbol*, Ronald Planer and Kim Sterelny propose a novel theory of language: that modern language is the product of a long series of increasingly rich protolanguages evolving over the last two million years. Arguing that language and cognition coevolved, they give a central role to archaeological evidence and attempt to infer cognitive capacities on the basis of that evidence, which they link in turn to communicative capacities. Countering other accounts, which move directly from archaeological traces to language, Planer and Sterelny show that rudimentary forms of many of the elements on which language depends can be found in the great apes and were part of the equipment of the earliest species in our lineage. After outlining the constraints a theory of the evolution of language should satisfy and filling in the details of their model, they take up the evolution of words, composite utterances, and hierarchical structure. They consider the transition from a predominantly gestural to a predominantly vocal form of language and discuss the economic and social factors that led to language. Finally, they evaluate their theory in terms of the constraints previously laid out.

**Dark Persuasion** Joel E. Dimsdale 2021-08-10 A harrowing account of brainwashing's pervasive role in the twentieth and twenty-first centuries This gripping book traces the evolution of brainwashing from its

beginnings in torture and religious conversion into the age of neuroscience and social media. When Pavlov introduced scientific approaches, his research was enthusiastically supported by Lenin and Stalin, setting the stage for major breakthroughs in tools for social, political, and religious control. Tracing these developments through many of the past century's major conflagrations, Dimsdale narrates how when World War II erupted, governments secretly raced to develop drugs for interrogation. Brainwashing returned to the spotlight during the Cold War in the hands of the North Koreans and Chinese. In response, a huge Manhattan Project of the Mind was established to study memory obliteration, indoctrination during sleep, and hallucinogens. Cults used the techniques as well. Nobel laureates, university academics, intelligence operatives, criminals, and clerics all populate this shattering and dark story—one that hasn't yet ended.

**The Ape that Understood the Universe** Steve Stewart-Williams 2019-11-21 The Ape that Understood the Universe is the story of the strangest animal in the world: the human animal. It opens with a question: How would an alien scientist view our species? What would it make of our sex differences, our sexual behavior, our altruistic tendencies, and our culture? The book tackles these issues by drawing on two major schools of thought: evolutionary psychology and cultural evolutionary theory. The guiding assumption is that humans are animals, and that like all animals, we evolved to pass on our genes. At some point, however, we also evolved the capacity for culture - and from that moment, culture began evolving in its own right. This transformed us from a mere ape into an ape capable of reshaping the planet, travelling to other worlds, and understanding the vast universe of which we're but a tiny, fleeting fragment. Featuring a new foreword by Michael Shermer.

**A Different Kind of Animal** Robert Boyd 2019-11-19 "Human beings are a very different kind of animal. We have evolved to become the most dominant species on Earth. We have a larger geographical range and process more energy than any other creature alive. This astonishing transformation is usually explained in terms of cognitive ability--people are just smarter than all the rest. But in this compelling book, Robert Boyd argues that culture--our ability to learn from each other--has been the essential ingredient of our remarkable success. A Different Kind of Animal demonstrates that while people are smart, we are not nearly smart enough to have solved the vast array of problems that confronted our species as it spread across the globe. Over the past two million years, culture has evolved to enable human populations to accumulate superb local adaptations that no individual could ever have invented on their own. It has also made possible the evolution of social norms that allow humans to make common cause with large groups of unrelated individuals, a kind of society not seen anywhere else in nature. This unique combination of cultural adaptation and large-scale cooperation has transformed our species and assured our survival--making us the different kind of animal we are today. Based on the Tanner Lectures delivered at Princeton University, A Different Kind of Animal features challenging responses by biologist H. Allen Orr, philosopher Kim Sterelny, economist Paul Seabright, and evolutionary anthropologist Ruth Mace, as well as an introduction by Stephen Macedo."--

**The Dialogical Roots of Deduction** Catarina Dutilh Novaes 2020-12-17 The first comprehensive account of the concept and practices of deduction covering philosophy, history, cognition and mathematical practice.

**The True Creator of Everything** Miguel Nicolelis 2020-01-07 A radically new cosmological view from a groundbreaking neuroscientist who places the human brain at the center of humanity's universe Renowned neuroscientist Miguel Nicolelis introduces a revolutionary new theory of how the human brain evolved to become an organic computer without rival in the known universe. He undertakes the first attempt to explain the entirety of human history, culture, and civilization based on a series of recently uncovered key principles of brain function. This new cosmology is centered around three fundamental properties of the human brain: its insurmountable malleability to adapt and learn; its exquisite ability to allow multiple individuals to synchronize their minds around a task, goal, or belief; and its incomparable capacity for abstraction. Combining insights from such diverse fields as neuroscience, mathematics, evolution, computer science, physics, history, art, and philosophy, Nicolelis presents a neurobiologically based manifesto for the uniqueness of the human mind and a cautionary tale of the threats that technology poses to present and future generations.

**Darwin's Unfinished Symphony** Kevin N. Laland 2018-09-11 Humans possess an extraordinary capacity for culture, from the arts and language to science and technology. But how did the human mind—and the uniquely human ability to devise and transmit culture—evolve from its roots in animal behavior? Darwin's

Unfinished Symphony presents a captivating new theory of human cognitive evolution. This compelling and accessible book reveals how culture is not just the magnificent end product of an evolutionary process that produced a species unlike all others—it is also the key driving force behind that process. Kevin Laland tells the story of the painstaking fieldwork, the key experiments, the false leads, and the stunning scientific breakthroughs that led to this new understanding of how culture transformed human evolution. It is the story of how Darwin's intellectual descendants picked up where he left off and took up the challenge of providing a scientific account of the evolution of the human mind.

**Strategy, Evolution, and War** Kenneth Payne 2018 The evolution of strategists -- Defining strategy as psychology -- Evolutionary strategy -- Strategic heuristics and biases -- Culture meets evolved strategy -- The pen and the sword in ancient Greece -- Clausewitz explores the psychology of strategy -- Nuclear weapons are not psychologically revolutionary -- AI and strategy -- Tactical artificial intelligence arrives -- Artificial general intelligence does strategy -- Conclusion: strategy evolves beyond AI

**Squeezing Minds From Stones** Karenleigh A. Overmann 2019-04-04 Cognitive archaeology is a relatively new interdisciplinary science that uses cognitive and psychological models to explain archeological artifacts like stone tools, figurines, and art. Squeezing Minds From Stones is a collection of essays from early pioneers in the field, like archaeologists Thomas Wynn and Iain Davidson, and evolutionary primatologist William McGrew, to 'up and coming' newcomers like Shelby Putt, Ceri Shipton, Mark Moore, James Cole, Natalie Uomini, and Lana Ruck. Their essays address a wide variety of cognitive archaeology topics, including the value of experimental archaeology, primate archaeology, the intent of ancient tool makers, and how they may have lived and thought.

**The Philosophy of Affordances** Manuel Heras-Escribano 2019-01-17 This book is the first monograph fully devoted to analyzing the philosophical aspects of affordances. The concept of affordance, coined and developed in the field of ecological psychology, describes the possibilities for action available in the environment. This work offers a systematic approach to the key philosophical features of affordances, such as their ontological characterization, their relation to normative practices, and the idea of agency that follows from viewing affordances as key objects of perception, while also proposing an innovative philosophical characterization of affordances as dispositional properties. The Philosophy of Affordances analyzes the implications that a proper understanding of affordances has for the philosophy of mind and the cognitive sciences, and aims to intensify the dialogue between philosophy and ecological psychology in which each discipline benefits from the tools and insights of the other.

**Representation in Cognitive Science** Nicholas Shea 2018-10-04 Our thoughts are meaningful. We think about things in the outside world; how can that be so? This is one of the deepest questions in contemporary philosophy. Ever since the 'cognitive revolution', states with meaning-mental representations-have been the key explanatory construct of the cognitive sciences. But there is still no widely accepted theory of how mental representations get their meaning. Powerful new methods in cognitive neuroscience can now reveal information processing in the brain in unprecedented detail. They show how the brain performs complex calculations on neural representations. Drawing on this cutting-edge research, Nicholas Shea uses a series of case studies from the cognitive sciences to develop a naturalistic account of the nature of mental representation. His approach is distinctive in focusing firmly on the 'subpersonal' representations that pervade so much of cognitive science. The diversity and depth of the case studies, illustrated by numerous figures, make this book unlike any previous treatment. It is important reading for philosophers of psychology and philosophers of mind, and of considerable interest to researchers throughout the cognitive sciences.

**Success Through Failure** Henry Petroski 2018-05-29 Examines many of the failed designs and inventions that led to greater improvements citing as examples the 1940 collapse of the Tacoma Narrows Bridge and the space shuttle disasters.

**How Traditions Live and Die** Olivier Morin 2016 Of all the things we do and say, most will never be repeated or reproduced. Once in a while, however, an idea or a practice generates a chain of transmission that covers more distance through space and time than any individual person ever could. What makes such transmission chains possible? For two centuries, the dominant view (from psychology to anthropology) was that humans owe their cultural prosperity to their powers of imitation. In this view, modern cultures exist because the people who carry them are gifted at remembering, storing and reproducing information. How

Traditions Live and Die proposes an alternative to this standard view. What makes traditions live is not a general-purpose imitation capacity. Cultural transmission is partial, selective, often unfaithful. Some traditions live on in spite of this, because they tap into widespread and basic cognitive preferences. These attractive traditions spread, not by being better retained or more accurately transferred, but because they are transmitted over and over. This theory is used to shed light on various puzzles of cultural change (from the distribution of bird songs to the staying power of children's rhymes) and to explain the special relation that links the human species to its cultures. Morin combines recent work in cognitive anthropology with new advances in quantitative cultural history, to map and predict the diffusion of traditions. This book is both an introduction and an accessible alternative to contemporary theories of cultural evolution.

**The Evolution of Cognition** Cecilia M. Heyes 2000 In the last decade, "evolutionary psychology" has come to refer exclusively to research on human mentality and behavior, motivated by a nativist interpretation of how evolution operates. This book encompasses the behavior and mentality of nonhuman as well as human animals and a full range of evolutionary approaches. Rather than a collection by and for the like-minded, it is a debate about how evolutionary processes have shaped cognition. The debate is divided into five sections: Orientations, on the phylogenetic, ecological, and psychological/comparative approaches to the evolution of cognition; Categorization, on how various animals parse their environments, how they represent objects and events and the relations among them; Causality, on whether and in what ways nonhuman animals represent cause and effect relationships; Consciousness, on whether it makes sense to talk about the evolution of consciousness and whether the phenomenon can be investigated empirically in nonhuman animals; and Culture, on the cognitive requirements for nongenetic transmission of information and the evolutionary consequences of such cultural exchange. Contributors Bernard Balleine, Patrick Bateson, Michael J. Beran, M. E. Bitterman, Robert Boyd, Nicola Clayton, Juan Delius, Anthony Dickinson, Robin Dunbar, D.P. Griffiths, Bernd Heinrich, Cecilia Heyes, William A. Hillix, Ludwig Huber, Nicholas Humphrey, Masako Jitsumori, Louis Lefebvre, Nicholas Mackintosh, Euan M. Macphail, Peter Richerson, Duane M. Rumbaugh, Sara Shettleworth, Martina Siemann, Kim Sterelny, Michael Tomasello, Laura Weiser, Alexandra Wells, Carolyn Wilczynski, David Sloan Wilson

**The Secret of Our Success** Joseph Henrich 2017-10-17 How our collective intelligence has helped us to evolve and prosper Humans are a puzzling species. On the one hand, we struggle to survive on our own in the wild, often failing to overcome even basic challenges, like obtaining food, building shelters, or avoiding predators. On the other hand, human groups have produced ingenious technologies, sophisticated languages, and complex institutions that have permitted us to successfully expand into a vast range of diverse environments. What has enabled us to dominate the globe, more than any other species, while remaining virtually helpless as lone individuals? This book shows that the secret of our success lies not in our innate intelligence, but in our collective brains—on the ability of human groups to socially interconnect and learn from one another over generations. Drawing insights from lost European explorers, clever chimpanzees, mobile hunter-gatherers, neuroscientific findings, ancient bones, and the human genome, Joseph Henrich demonstrates how our collective brains have propelled our species' genetic evolution and shaped our biology. Our early capacities for learning from others produced many cultural innovations, such as fire, cooking, water containers, plant knowledge, and projectile weapons, which in turn drove the expansion of our brains and altered our physiology, anatomy, and psychology in crucial ways. Later on, some collective brains generated and recombined powerful concepts, such as the lever, wheel, screw, and writing, while also creating the institutions that continue to alter our motivations and perceptions. Henrich shows how our genetics and biology are inextricably interwoven with cultural evolution, and how culture-gene interactions launched our species on an extraordinary evolutionary trajectory. Tracking clues from our ancient past to the present, The Secret of Our Success explores how the evolution of both our cultural and social natures produce a collective intelligence that explains both our species' immense success and the origins of human uniqueness.

**The Psychology of Strategy** Kenneth Payne 2015 How do strategists decide what they wish to achieve through war, and how they might accomplish it? And why does their understanding of violence regularly turn out to be wrong? In seeking answers to these questions Kenneth Payne draws on the study of psychology to examine strategic behaviour during the Vietnam War. He explores the ways in which cognitive biases distort

our sense of our own agency and our decision-making, arguing that much of the latter is emotional, shaped by unconscious processing and driven by a prickly concern for social esteem. The Nixon and Johnson administrations both proved susceptible to the processes that are familiar to students of modern neuroscience and psychology, but perhaps less appreciated within strategic studies. US strategists in the Vietnam era miscalculated in ways that would surprise rational theorists, but not evolutionary psychologists: they exaggerated the stakes, embraced risky and overly optimistic solutions, and failed to appreciate the limits of force to shatter the enemy's resolve. Their concern for reputation led to escalation, based on a flawed conception of what such escalation could achieve. The Vietnam conflict provides an excellent illustration that war is an inherently psychological phenomenon. This challenges abstract notions of rationality in strategic affairs, suggesting that the strategists -- much like the rest of us -- are strangers to themselves.

*Idealization and the Aims of Science* Angela Potochnik 2020-09-23 Science is the study of our world, as it is in its messy reality. Nonetheless, science requires idealization to function—if we are to attempt to understand the world, we have to find ways to reduce its complexity. *Idealization and the Aims of Science* shows just how crucial idealization is to science and why it matters. Beginning with the acknowledgment of our status as limited human agents trying to make sense of an exceedingly complex world, Angela Potochnik moves on to explain how science aims to depict and make use of causal patterns—a project that makes essential use of idealization. She offers case studies from a number of branches of science to demonstrate the ubiquity of idealization, shows how causal patterns are used to develop scientific explanations, and describes how the necessarily imperfect connection between science and truth leads to researchers' values influencing their findings. The resulting book is a tour de force, a synthesis of the study of idealization that also offers countless new insights and avenues for future exploration.

**Cognitive Gadgets** Cecilia Heyes 2018-04-16 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.

*Metapatterns* Tyler Volk 1996-06-29 In the interdisciplinary tradition of Buckminster Fuller's work, Gregory Bateson's *Mind and Nature*, and Fritjof Capra's *Tao of Physics*, *Metapatterns* embraces both nature and culture, seeking out the grand-scale patterns that help explain the functioning of our universe.

**Cognitive Science and the Social** Stephen P. Turner 2018-03-09 The rise of cognitive neuroscience is the most important scientific and intellectual development of the last thirty years. Findings pour forth, and major initiatives for brain research continue. The social sciences have responded to this development slowly—for good reasons. The implications of particular controversial findings, such as the discovery of mirror neurons, have been ambiguous, controversial within neuroscience itself, and difficult to integrate with conventional social science. Yet many of these findings, such as those of experimental neuro-economics, pose very direct challenges to standard social science. At the same time, however, the known facts of social science, for example about linguistic and moral diversity, pose a significant challenge to standard neuroscience approaches, which tend to focus on "universal" aspects of human and animal cognition. A serious encounter between cognitive neuroscience and social science is likely to be challenging, and transformative, for both parties. Although a literature has developed on proposals to integrate neuroscience and social science, these proposals go in divergent directions. None of them has a developed conception of social life. This book surveys these issues, introduces the basic alternative conceptions both of the mental world and the social world, and show how, with sufficient modification, they can be fit together in plausible ways. The book is not a "new theory" of anything, but rather an exploration of the critical issues that relate to the social aspects of cognition which expands the topic from the social neuroscience of immediate interpersonal interaction to the whole range of places where social variation interacts with the cognitive. The focus is on the conceptual problems produced by any attempt to take these issues seriously, and also on the new resources and considerations relevant to doing so. But it is also on the need for a revision of social theoretical concepts in order to utilize these resources. The book points to some conclusions, especially about how the process of what was known as socialization needs to be understood in cognitive science friendly terms. But there is no attempt to resolve the underlying issues within cognitive science, which will doubtless persist.

*Religion Explained* Pascal Boyer 2007-03-21 Many of our questions about religion, says renowned anthropologist Pascal Boyer, are no longer mysteries. We are beginning to know how to answer questions such as "Why do people have religion?" Using findings from anthropology, cognitive science, linguistics, and evolutionary biology, *Religion Explained* shows how this aspect of human consciousness is increasingly admissible to coherent, naturalistic explanation. This brilliant and controversial book gives readers the first scientific explanation for what religious feeling is really about, what it consists of, and where it comes from.