

## Cognitive Gadgets The Cultural Evolution Of Thinking

An examination of our language instinct. Steven Mithen draws on a huge range of sources, from neurological case studies, through child psychology and the communication systems of non-human primates to the latest paleoarchaeological evidence. 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, modern militaries, and ancient bones, 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. Examines many of the failed designs and inventions that led to greater improvements siting as examples the 1940 collapse of the Tacoma Narrows Bridge and the space shuttle disasters. 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. 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 and underestimated the enemy's capacity for 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.

### The Evolution of the Sensitive Soul

#### A Primer

#### Cognitive Archaeology and the Evolution of the Human Mind

#### Introduction to Graphic Design

#### Not By Genes Alone

#### Learning and the Origins of Consciousness

#### Access to Language and Cognitive Development

#### Emerging Concepts, Models, and Applications

"Enlightenment is a fragment of 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 your 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 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. A work that reveals the evolution, according to Godfrey-Smith, and proposes a new integrative framework for the language sciences. Language is a hallmark of the human species; the flexibility and unbounded expressivity of our linguistic abilities is unique in the biological world. In this book, Morten Christiansen and Nick Chater argue that to understand this astonishing phenomenon, we must consider how language is created: moment by moment, in the generation and understanding of individual utterances; year by year, as new language learners acquire language skills; and generation by generation, as language change, split, and fuse through the processes of cultural evolution. Christiansen and Chater propose a revolutionary new framework for understanding the evolution, acquisition, and processing of language, offering an integrated theory of how language creation is intertwined across these multiple timescales. Christiansen and Chater argue that mainstream generative approaches to language do not provide compelling accounts of language evolution, acquisition, and processing. Their own account draws on important developments from across the language sciences, including statistical natural language processing, learnability theory, computational modeling, and psycholinguistic experiments with children and adults. Christiansen and Chater also consider some of the major implications of their theoretical approach for our understanding of how language works, offering alternative accounts of specific aspects of language, including the structure of the vocabulary, the importance of experience in language processing, and the nature of recursive linguistic structure.

"This volume is a gem of an argument of the fragility of most works of culture in the digital age. In response, Dene Grigar and Stuart Murnighan have been working to document and preserve electronic literature, work that has culminated in the Pathfinders project and its series of "Traversals"—video and audio recordings of demonstrations performed on a brain trying to grapple with a complex environment. Along the way they develop new and intriguing insights into the nature of evolution, science and humanity.

Why we don't live in a post-truth society but rather a myside society: what science tells us about the bias that poisons our politics. In The Bias That Divides Us, psychologist Keith Stanovich argues provocatively that we don't live in a post-truth society, as has been claimed, but rather a myside society. Our problem is not that we are unable to value and respect truth and facts, but that we are unable to agree on commonly accepted truth and facts. We believe that our side knows the truth. Post-truth? That describes the other side. The inevitable result is political polarization. Stanovich shows what science can tell us about myside bias: how common it is, how to avoid it, and what purposes it serves. Stanovich explains that although myside bias is ubiquitous, it is an outlier among cognitive biases. It is unpredictable. Intelligence does not inoculate against it, and myside bias in one domain is not a good indicator of bias shown in any other domain. Stanovich argues that because of its outlier status, myside bias creates a true blind spot among the cognitive elite—those who are high in intelligence, executive functioning, or other valued psychological dispositions. They may consider themselves unbiased and purely rational in their thinking, but in fact they are just as biased as everyone else. Stanovich investigates how this bias blind spot contributes to our current ideologically polarized politics, connecting it to another recent trend: the decline of trust in university research as a disinterested arbiter.

"The Origins of a Uniquely Human Capacity Strategy, Evolution, and War The Affective Roots of Culture and Cognition Evolutionary Perspectives on Human Behaviour Evolutionary Social, Environmental and Policy Sciences Cultural Evolution The Bias That Divides Us The Origins of Music, Language, Mind, and Body An exercise in reclaiming electronic literary works on inaccessible platforms, examining four works as both artifacts and operations. Many pioneering works of electronic literature are now largely inaccessible because of changes in hardware, software, and platforms. The virtual disappearance of these works—created on floppy disks, in Apple's defunct HyperCard, and on other early systems and platforms—has not only puts important electronic literary work out of reach but also signals the fragility of most works of culture in the digital age. In response, Dene Grigar and Stuart Murnighan have been working to document and preserve electronic literature, work that has culminated in the Pathfinders project and its series of "Traversals"—video and audio recordings of demonstrations performed on historically appropriate platforms, with participation and commentary by the authors of the works. In Traversals, Moulthrop and Grigar mine this material to examine four influential early works: Judy Malloy's Uncle Roger (1986), John McDiad's Uncle Buddy's Phantom Funhouse (1993), Shelley Jackson's Patchwork Girl (1995) and Bill Bly's We Descend (1997), offering "deep readings" that consider the works as both literary artifacts and computational constructs. For each work, Moulthrop and Grigar explore the interplay between the text's material circumstances and the patterns of meaning it engages and creates, paying attention both to specificities of media and purposes of expression.

Culture and cultural evolution are uniquely significant phenomena in evolutionary biology: they are products of biological evolution, yet they supplement genetic transmission with social transmission, thus achieving a certain independence from natural selection. However, cultural evolution nevertheless expresses key Darwinian processes itself and also interacts with genetic evolution. Just how culture fits into the grander framework of evolution is a big issue though, yet one that has received relatively little scientific attention compared to, for example, genetic evolution. Culture Evolves is the outcome of a major interdisciplinary meeting held by The Royal Society and the British Academy which explored new discoveries and controversies regarding cultural evolution - from the roots of culture in the animal kingdom to investigations of the cognitive adaptations shaping our special cultural nature. The book contains papers written by leading experts from the fields of ethology, behavioural ecology, primatology, comparative psychology, archaeology, anthropology, evolutionary biology and developmental psychology.

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.

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 the multiple ways in which the human brain's unique ability to functionally connect to its multiple environments 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.

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 utilize 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.

Society, Technology, Language, and Religion The Science and Politics of Myside Thinking A Theory of Ontogeny A Different Kind of Animal How Culture Made the Human Mind Culture Evolves The Evolution of Cognition The Philosophy of Affordances

To what extent, and in what ways, is a child's cognitive development influenced by their early experience of, and access to, language? What are the affects on development of impaired access to language? This book is the first to consider how possessing an enhanced or impaired access to language influences a child's development.

Virtually all theories of how humans have become a distinctive species focus on evolution. Here, Michael Tomasello proposes a complementary theory focused on ontogenetic processes. Built on the essential ideas of Vygotsky, his data-driven model explains how those things that make us most human are constructed during the first six years of life.

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 that cooperation is ubiquitous 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.

An enormous amount of scientific research compels two fundamental conclusions about the human mind: the mind is the product of evolution; and the mind is shaped by culture. These two perspectives on the human mind are not incompatible, but, until recently, their compatibility has resisted rigorous scholarly inquiry. Evolutionary psychology documents many ways in which genetic adaptations govern the operations of the human mind. But evolutionary inquiries only occasionally grapple seriously with questions about human culture and cross-cultural differences. By contrast, cultural psychology documents many ways in which thought and behavior are shaped by different cultural experiences. But cultural inquires rarely consider evolutionary processes. Even after decades of intensive research, these two perspectives on human psychology have remained largely divorced from each other. But that is now changing – and that is what this book is about. Evolution, Culture, and the Human Mind is the first scholarly book to integrate evolutionary and cultural perspectives on human psychology. The contributors include world-renowned evolutionary, cultural, social, and cognitive psychologists. These chapters reveal many novel insights linking human evolution to both human cognition and human culture – including the evolutionary origins of cross-cultural differences. The result is a stimulating introduction to an emerging integrative perspective on human nature.

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 phenomena where social variation interacts with the cognitive. The focus is in 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.

The Cultural Evolution of Thinking Sociocognitive Foundations of Educational Measurement From Apes to Artificial Intelligence The Secret of Our Success Animal Life and the Birth of the Mind Darwin's Unfinished Symphony Traversals

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 it's "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 quirksness of humanity's greatest achievement.

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 in 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.

Cognitive GadgetsThe Cultural Evolution of ThinkingHarvard University Press 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.

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 phylogenetic research and their relevance to past accomplishments and future research directions.

#### Squeezing Minds From Stones

#### The Evolved Apprentice

#### The Singing Neanderthals

#### A Guide to Thinking, Process & Style

#### Sense and Nonsense

#### The Paradox of Design

#### Culture, Mind, and Brain

#### Human Evolution Beyond Biology and Culture

To be a "commonsense realist" is to hold that perceptual experience is (in general) an immediate awareness of mind-independent objects, and a source of direct knowledge of what such objects are like. Over the past few centuries this view has faced formidable challenges from epistemology, metaphysics, and, more recently, cognitive science. However, in recent years there has been renewed interest in it, due to new work on perceptual consciousness, objectivity, and causal understanding. This volume collects nineteen original essays by leading philosophers and psychologists on these topics. Questions addressed include: What are the commitments of commonsense realism? Does it entail any particular view of the nature of perceptual experience, or any particular view of the epistemology of perceptual knowledge? Should we think of commonsense realism as a view that philosophers, or is it rather a sense in which we are practically committed to commonsense realism in virtue of the experience we enjoy or the explanations we give? Is commonsense realism defensible, and if so how, in the face of the formidable criticism it faces? Specific issues addressed in the philosophical essays include the status of causal requirements on perception, the causal role of perceptual experience, and the relation between objective perception and causal thinking. The scientific essays present a range of perspectives on the development, phylogenetic and ontogenetic, of the human adult conception of perception.

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.

Explores cruelty and violence in human behavior, tracing its roots in psychology, sociology, anthropology, criminology, and history 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. ContributorsBernard Balaine, 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. Hills, Ludwig Huber, Nicholas Humphrey, Masako Itsumori, Louis Lefebvre, Nicholas Mackintosh, Evan M. Macphail, Peter Richerson, Duane M. Rumbaugh, Sara Shettleworth, Martina Siemann, Kim Sterelny, Michael Tomasello, Laura Weiser, Alexandra Wells, Carolyn Wilczynski, David Sloan Wilson

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. Cognitive Science and the Social The Psychology of Strategy Creating Language Exploring Rationality in the Vietnam War The Evolutionary Origins of Religious Thought In the Light of Evolution Integrating Evolution, Acquisition, and Processing The Ape that Understood the Universe

A comprehensive account of the neurobiological basis of language, arguing that species-specific brain differences may be at the root of the human capacity for language. Language makes us human. It is an intrinsic part of us, although we seldom think about it. Language is also an extremely complex entity with subcomponents responsible for its phonological, syntactic, and semantic aspects. In this landmark work, Angela Friederici offers a comprehensive account of these subcomponents and how they are integrated. Tracing the neurobiological basis of language across brain regions in humans and other primate species, she argues that species-specific brain differences may be at the root of the human capacity for language. Friederici shows which brain regions support the different language processes and, more important, how these brain regions are connected structurally and functionally to make language processes that are essential to human existence. Drawing on work in the fields of anthropology, political science, sociology, and economics—and building on the case with such fascinating examples as karts, corporations, clever laws, and yams that require twelve men to carry them—Richerson and Boyd convincingly demonstrate that culture and biology are inextricably linked, and they show us how to think about their interaction in a way that yields a richer understanding of human nature. In abandoning the nature-versus-nurture debate as fundamentally misconceived, Not By Genes Alone is a truly original and groundbreaking theory of the role of culture in evolution and a singular tool to be reckoned with for generations to come. "I continue to be surprised by the number of educated people (many of them biologists) who think that I'm offering explanations for human behavior in terms of culture somehow disproves the suggestion that human beings are explained in Darwinian evolutionary terms. Fortunately, we now have a book to which they may be directed for enlightenment. . . . It is a book full of good sense and the kinds of intellectual rigor and clarity of writing that we have come to expect from the Boyd/Richerson stable."—Robin Dunbar, Nature "Not by Genes Alone is a valuable and very readable synthesis of a still embryonic but very important subject straddling the sciences and humanities."—E. O. Wilson, Harvard University

How the Mind and Culture Evolve Evolution, Culture, and the Human Mind Language in Our Brain How Culture Transformed Our Species How Evolution Made Humans Unique Cognitive Gadgets Cooperation and Its Evolution

"Evolutionary Mind" 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.

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 us 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 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, Susan Ballalua, Morten H. Christiansen, Emma Cohen, William Croft, Michael Cysouw, Dan Dediu, Nicholas Evans, Emma Flynn, Pieter François, Simon Gärrod, Armin W. Geertz, Herbert Gintis, Roy Ginyard, Steven Greif, Daniel R. M. Hean, 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 Lieber, Sarah Mathew, Robert N. McCauley, Alex Mesoudi, Ara Norenzayan, Harriet Over, Juergen Renn, Victoria Reyes-García, Peter J. Richerson, Stephen Shennan, Edward G. Slingerland, Dietrich Stout, Several key developments challenge the field of educational measurement today: demands for tests at lower levels with higher stakes, an improved understanding of how people develop capabilities, and new technologies for interactive digital assessments. Sociometric 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 sociometric perspective on assessment. This comprehensive volume begins with a broad exploration 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.

Decisions about war have always been made by humans, but now intelligent machines are on the cusp of changing things – with dramatic consequences for international affairs. This book explores the evolutionary origins of human strategy, and makes a provocative argument that Artificial Intelligence will radically transform the nature of war by changing the psychological basis of decision-making about violence. Strategy, Evolution, and War is a cautionary preview of how Artificial Intelligence (AI) will revolutionize strategy more than any development in the last three thousand years of military history. Kenneth Payne describes strategy as an evolved package of conscious and unconscious behaviors with roots in our primate ancestors. Our minds were shaped by the need to think about warfare—a constant threat for early humans. As a result, we developed a sophisticated and strategic intelligence. The implications of AI are profound because they depart radically from the biological basis of human intelligence. Rather than being just another tool of war, AI will dramatically speed up decision making and use very different cognitive processes, including when deciding to launch an attack, or escalate violence. AI will change the essence of strategy, the organization of armed forces, and the international order. This book is a fascinating examination of the psychology of strategy-making from prehistoric times, through the ancient world, and into the modern age.

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 M.Grew, to 'up and coming' newcomers like Shelby Patt, Ceri Shipton, and

Evil Moore, James Cole, Natalie Uomini, and Lama Rock. 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.

#### Perception, Causation, and Objectivity

#### Becoming Human

#### Inside Human Evolution and Cruelty

#### The True Creator of Everything

*The Evolution of the Curious Mind*

*How Culture Transformed Human Evolution*

How our ability to learn from each other has been the essential ingredient to our remarkable success as a species Human beings have evolved to become the most dominant species on Earth. This astonishing transformation is usually explained in terms of cognitive ability—people are just smarter than all the rest. But Robert Boyd argues that culture—our ability to learn from each other—has been the essential ingredient of our remarkable success. He shows how a 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.

*Success Through Failure*

*The Use of Preservation for Early Electronic Writing*

*Volume X: Comparative Phylogeography*

*Religion Explained*

*How Culture Is Driving Human Evolution, Domesticating Our Species, and Making Us Smarter*

*Metazoos*

*Don't Believe a Word: The Surprising Truth About Language*