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2. **Maintain it quick:** From Bacteria To Bach And Back Pdf Free recap is suggested to be a fast summary, so keep it concise. Stay with the most essential details and avoid entering into way too much deepness.
3. **Consist of the main personalities:** Ensure to include a brief summary of the main personalities, including their

names and any specifying attributes or features.

4. **Highlight the central styles:** Determine the central motifs of From Bacteria To Bach And Back Pdf Free and highlight them in your summary. This will certainly provide viewers a better concept of what guide is about and what they can anticipate to pick up from it.

By keeping these key elements in mind, you can compose an efficient and appealing publication recap that records the significance of From Bacteria To Bach And Back Pdf Free publication and leaves readers desiring a lot more.

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1. Online Operating systems

Among the easiest means to discover From Bacteria To Bach And Back Pdf Free recaps is with online platforms. Web sites like Blinkist, getAbstract, and Sumizeit offer a variety of recaps for different classifications and genres. You can likewise check out Amazon Kindle's "Brief Reads" section for fast, easy-to-digest summaries.

2. Schedule Testimonial Internet Sites

Reserve evaluation sites like Goodreads and BookPage usually feature summaries along with their testimonials. They can provide a deeper understanding of *From Bacteria To Bach And Back Pdf Free* plot and motifs while additionally offering understanding into the visitor's experience. You can likewise have a look at their "advised" web page to find new recaps.

3. Curated Collections

For viewers that like a much more tailored touch, curated collections are a great option. These collections are commonly produced by sector experts or lovers and provide a listing of must-read summaries for different categories. You can find them on blog sites, podcasts, and even social networks groups.

With these suggestions, you can find the ideal *From Bacteria To Bach And Back Pdf Free* book recaps for your interests and choices. Happy analysis!

From Bacteria to Bach and Back

The Evolution of Minds *Penguin Press*
What is human consciousness ? And how did it become possible for our minds to even ask this question ? This landmark work is Daniel C. Dennett's brilliant answer, drawing on decades of

philosophical and scientific insights to show our minds evolved and created the thinking tools that make us who we are.

From Bacteria to Bach and Back: The Evolution of Minds *W. W. Norton & Company*

"A supremely enjoyable, intoxicating work." —Nature How did we come to have minds? For centuries, poets, philosophers, psychologists, and physicists have wondered how the human mind developed its unrivaled abilities. Disciples of Darwin have explained how natural selection produced plants, but what about the human mind? In *From Bacteria to Bach and Back*, Daniel C. Dennett builds on recent discoveries from biology and computer science to show, step by step, how a comprehending mind could in fact have arisen from a mindless process of natural selection. A crucial shift occurred when humans developed the ability to share memes, or ways of doing things not based in genetic instinct. Competition among memes produced thinking tools powerful enough that our minds don't just perceive and react, they create and comprehend. An agenda-setting book for a new generation of philosophers and scientists, *From Bacteria to Bach and Back* will delight and entertain all those curious about how the mind works.

From Bacteria to Bach and Back

The Evolution of Minds *Penguin UK*
'Required reading for anyone remotely curious about how they came to be remotely curious' Observer 'Enthralling' Spectator What is human consciousness and how is it possible? These questions fascinate thinking people from poets and painters to physicists, psychologists, and

philosophers. This is Daniel C. Dennett's brilliant answer, extending perspectives from his earlier work in surprising directions, exploring the deep interactions of evolution, brains and human culture. Part philosophical whodunnit, part bold scientific conjecture, this landmark work enlarges themes that have sustained Dennett's career at the forefront of philosophical thought. In his inimitable style, laced with wit and thought experiments, Dennett shows how culture enables reflection by installing a profusion of thinking tools, or memes, in our brains, and how language turbocharges this process. The result: a mind that can comprehend the questions it poses, has emerged from a process of cultural evolution. An agenda-setting book for a new generation of philosophers and thinkers, *From Bacteria to Bach and Back* is essential for anyone who hopes to understand human creativity in all its applications.

From Bacteria to Bach and Back

The Evolution of Minds *Allen Lane*

'Required reading for anyone remotely curious about how they came to be remotely curious' Observer 'Enthralling' Spectator What is human consciousness and how is it possible? These questions fascinate thinking people from poets and painters to physicists, psychologists, and philosophers. This is Daniel C. Dennett's brilliant answer, extending perspectives from his earlier work in surprising directions, exploring the deep interactions of evolution, brains and human culture. Part philosophical whodunnit, part bold scientific conjecture, this landmark work enlarges themes that have sustained Dennett's career at the forefront of philosophical

thought. In his inimitable style, laced with wit and thought experiments, Dennett shows how culture enables reflection by installing a profusion of thinking tools, or memes, in our brains, and how language turbocharges this process. The result: a mind that can comprehend the questions it poses, has emerged from a process of cultural evolution. An agenda-setting book for a new generation of philosophers and thinkers, *From Bacteria to Bach and Back* is essential for anyone who hopes to understand human creativity in all its applications.

Consciousness Explained *Little, Brown*

"Brilliant...as audacious as its title....Mr. Dennett's exposition is nothing short of brilliant." --George Johnson, New York Times Book Review *Consciousness Explained* is a full-scale exploration of human consciousness. In this landmark book, Daniel Dennett refutes the traditional, commonsense theory of consciousness and presents a new model, based on a wealth of information from the fields of neuroscience, psychology, and artificial intelligence. Our current theories about conscious life-of people, animal, even robots--are transformed by the new perspectives found in this book.

Intuition Pumps And Other Tools for Thinking *W. W. Norton & Company*

The philosophy professor behind *Breaking the Spell* and *Consciousness Explained* offers exercises and tools to stretch the mind, offering new ways to consider, discuss and argue positions on dangerous subject matter including evolution, the meaning of life and free will.

Freedom Evolves *Penguin*

Can there be freedom and free will in a deterministic world? Renowned philosopher Daniel Dennett emphatically answers “yes!” Using an array of provocative formulations, Dennett sets out to show how we alone among the animals have evolved minds that give us free will and morality. Weaving a richly detailed narrative, Dennett explains in a series of strikingly original arguments—drawing upon evolutionary biology, cognitive neuroscience, economics, and philosophy—that far from being an enemy of traditional explorations of freedom, morality, and meaning, the evolutionary perspective can be an indispensable ally. In *Freedom Evolves*, Dennett seeks to place ethics on the foundation it deserves: a realistic, naturalistic, potentially unified vision of our place in nature.

Elbow Room, new edition

The Varieties of Free Will Worth Wanting *MIT Press*

A landmark book in the debate over free will that makes the case for compatibilism. In this landmark 1984 work on free will, Daniel Dennett makes a case for compatibilism. His aim, as he writes in the preface to this new edition, was a cleanup job, “saving everything that mattered about the everyday concept of free will, while jettisoning the impediments.” In *Elbow Room*, Dennett argues that the varieties of free will worth wanting—those that underwrite moral and artistic responsibility—are not threatened by advances in science but distinguished, explained, and justified in detail. Dennett tackles the question of free will in a highly original and witty manner, drawing on the theories and concepts of fields that range from physics and evolutionary biology to

engineering, automata theory, and artificial intelligence. He shows how the classical formulations of the problem in philosophy depend on misuses of imagination, and he disentangles the philosophical problems of real interest from the “family of anxieties” in which they are often enmeshed—imaginary agents and bogeymen, including the Peremptory Puppeteer, the Nefarious Neurosurgeon, and the Cosmic Child Whose Dolls We Are. Putting sociobiology in its rightful place, he concludes that we can have free will and science too. He explores reason, control and self-control, the meaning of “can” and “could have done otherwise,” responsibility and punishment, and why we would want free will in the first place. A fresh reading of Dennett's book shows how much it can still contribute to current discussions of free will. This edition includes as its afterword Dennett's 2012 Erasmus Prize essay.

Sweet Dreams

Philosophical Obstacles to a Science of Consciousness *MIT Press*

In the years since Daniel Dennett's influential *Consciousness Explained* was published in 1991, scientific research on consciousness has been a hotly contested battleground of rival theories—“so rambunctious,” Dennett observes, “that several people are writing books just about the tumult.” With *Sweet Dreams*, Dennett returns to the subject for “revision and renewal” of his theory of consciousness, taking into account major empirical advances in the field since 1991 as well as recent theoretical challenges. In *Consciousness Explained*, Dennett proposed to replace the ubiquitous but bankrupt Cartesian Theater model (which posits a privileged

place in the brain where "it all comes together" for the magic show of consciousness) with the Multiple Drafts Model. Drawing on psychology, cognitive neuroscience, and artificial intelligence, he asserted that human consciousness is essentially the mental software that reorganizes the functional architecture of the brain. In *Sweet Dreams*, he recasts the Multiple Drafts Model as the "fame in the brain" model, as a background against which to examine the philosophical issues that "continue to bedevil the field." With his usual clarity and brio, Dennett enlivens his arguments with a variety of vivid examples. He isolates the "Zombic Hunch" that distorts much of the theorizing of both philosophers and scientists, and defends heterophenomenology, his "third-person" approach to the science of consciousness, against persistent misinterpretations and objections. The old challenge of Frank Jackson's thought experiment about Mary the color scientist is given a new rebuttal in the form of "RoboMary," while his discussion of a famous card trick, "The Tuned Deck," is designed to show that David Chalmers's Hard Problem is probably just a figment of theorists' misexploited imagination. In the final essay, the "intrinsic" nature of "qualia" is compared with the naively imagined "intrinsic value" of a dollar in "Consciousness—How Much is That in Real Money?"

Breaking the Spell

Religion as a Natural Phenomenon *Penguin*

The New York Times bestseller – a "crystal-clear, constantly engaging" (Jared Diamond) exploration of the role

that religious belief plays in our lives and our interactions. For all the thousands of books that have been written about religion, few until this one have attempted to examine it scientifically: to ask why—and how—it has shaped so many lives so strongly. Is religion a product of blind evolutionary instinct or rational choice? Is it truly the best way to live a moral life? Ranging through biology, history, and psychology, Daniel C. Dennett charts religion's evolution from "wild" folk belief to "domesticated" dogma. Not an antireligious screed but an unblinking look beneath the veil of orthodoxy, *Breaking the Spell* will be read and debated by believers and skeptics alike.

Brainstorms

Philosophical Essays on Mind and Psychology *MIT Press*

This collection of 17 essays by the author offers a comprehensive theory of mind, encompassing traditional issues of consciousness and free will. Using careful arguments and ingenious thought-experiments, the author exposes familiar preconceptions and hobbling institutions. This collection of 17 essays by the author offers a comprehensive theory of mind, encompassing traditional issues of consciousness and free will. Using careful arguments and ingenious thought-experiments, the author exposes familiar preconceptions and hobbling institutions. The essays are grouped into four sections: Intentional Explanation and Attributions of Mentality; The Nature of Theory in Psychology; Objects of Consciousness and the Nature of Experience; and Free Will and Personhood.

Darwin's Dangerous Idea

Evolution and the Meaning of Life

Simon and Schuster

In a book that is both groundbreaking and accessible, Daniel C. Dennett, whom Chet Raymo of *The Boston Globe* calls "one of the most provocative thinkers on the planet," focuses his unerringly logical mind on the theory of natural selection, showing how Darwin's great idea transforms and illuminates our traditional view of humanity's place in the universe. Dennett vividly describes the theory itself and then extends Darwin's vision with impeccable arguments to their often surprising conclusions, challenging the views of some of the most famous scientists of our day.

Feeling Pain and Being in Pain *MIT Press*

An examination of the two most radical dissociation syndromes of the human pain experience—pain without painfulness and painfulness without pain—and what they reveal about the complex nature of pain and its sensory, cognitive, and behavioral components. In *Feeling Pain and Being in Pain*, Nikola Grahek examines two of the most radical dissociation syndromes to be found in human pain experience: pain without painfulness and painfulness without pain. Grahek shows that these two syndromes—the complete dissociation of the sensory dimension of pain from its affective, cognitive, and behavioral components, and its opposite, the dissociation of pain's affective components from its sensory-discriminative components (inconceivable to most of us but documented by ample clinical evidence)—have much to teach us about

the true nature and structure of human pain experience. Grahek explains the crucial distinction between feeling pain and being in pain, defending it on both conceptual and empirical grounds. He argues that the two dissociative syndromes reveal the complexity of the human pain experience: its major components, the role they play in overall pain experience, the way they work together, and the basic neural structures and mechanisms that subserve them. *Feeling Pain and Being in Pain* does not offer another philosophical theory of pain that conclusively supports or definitively refutes either subjectivist or objectivist assumptions in the philosophy of mind. Instead, Grahek calls for a less doctrinaire and more balanced approach to the study of mind-brain phenomena.

Just Deserts

Debating Free Will *John Wiley & Sons*

The concept of free will is profoundly important to our self-understanding, our interpersonal relationships, and our moral and legal practices. If it turns out that no one is ever free and morally responsible, what would that mean for society, morality, meaning, and the law? *Just Deserts* brings together two philosophers – Daniel C. Dennett and Gregg D. Caruso – to debate their respective views on free will, moral responsibility, and legal punishment. In three extended conversations, Dennett and Caruso present their arguments for and against the existence of free will and debate their implications. Dennett argues that the kind of free will required for moral responsibility is compatible with determinism – for him, self-control is key; we are not responsible for becoming responsible, but are responsible for staying responsible, for

keeping would-be puppeteers at bay. Caruso takes the opposite view, arguing that who we are and what we do is ultimately the result of factors beyond our control, and because of this we are never morally responsible for our actions in the sense that would make us truly deserving of blame and praise, punishment and reward. Just Deserts introduces the concepts central to the debate about free will and moral responsibility by way of an entertaining, rigorous, and sometimes heated philosophical dialogue between two leading thinkers.

Content and Consciousness *Routledge*

Content and Consciousness is an original and ground-breaking attempt to elucidate a problem integral to the history of Western philosophical thought: the relationship of the mind and body. In this formative work, Dennett sought to develop a theory of the human mind and consciousness based on new and challenging advances in the field that came to be known as cognitive science. This important and illuminating work is widely-regarded as the book from which all of Dennett's future ideas developed. It is his first explosive rebuttal of Cartesian dualism and one of the founding texts of philosophy of mind.

I Am a Strange Loop *Basic Books (AZ)*

An original, endlessly thought-provoking, and controversial look at the nature of consciousness and identity argues that the key to understanding selves and consciousness is the "strange loop," a special kind of abstract feedback loop inhabiting our brains.

The Mind's I

Fantasies and Reflections on Self and Soul

The Selfish Gene

40th Anniversary edition *Oxford University Press*

The million copy international bestseller, critically acclaimed and translated into over 25 languages. As influential today as when it was first published, *The Selfish Gene* has become a classic exposition of evolutionary thought. Professor Dawkins articulates a gene's eye view of evolution - a view giving centre stage to these persistent units of information, and in which organisms can be seen as vehicles for their replication. This imaginative, powerful, and stylistically brilliant work not only brought the insights of Neo-Darwinism to a wide audience, but galvanized the biology community, generating much debate and stimulating whole new areas of research. Forty years later, its insights remain as relevant today as on the day it was published. This 40th anniversary edition includes a new epilogue from the author discussing the continuing relevance of these ideas in evolutionary biology today, as well as the original prefaces and foreword, and extracts from early reviews. Oxford Landmark Science books are 'must-read' classics of modern science writing which have crystallized big ideas, and shaped the way we think.

Minds, Machines and Evolution *CUP Archive*

Original essays written by philosophers and scientists and dealing with philosophical questions arising from work in evolutionary biology and artificial intelligence.

Brainchildren

Essays on Designing Minds *MIT Press*

A new collection of wide-ranging essays from one of cognitive science's most distinguished figures. Minds are complex artifacts, partly biological and partly social; only a unified, multidisciplinary approach will yield a realistic theory of how they came into existence and how they work. One of the foremost workers in this multidisciplinary field is Daniel Dennett. This book brings together his essays on the philosophy of mind, artificial intelligence, and cognitive ethology that appeared in inaccessible journals from 1984 to 1996. Highlights include "Can Machines Think?," "The Unimagined Preposterousness of Zombies," "Artificial Life as Philosophy," and "Animal Consciousness: What Matters and Why." Collected in a single volume, the essays are now available to a wider audience.

How to Study Animal Minds

Cambridge University Press

Comparative psychology, the multidisciplinary study of animal behavior and psychology, confronts the challenge of how to study animals we find cute and easy to anthropomorphize, and animals we find odd and easy to objectify, without letting these biases negatively impact the science. In this Element, Kristin Andrews identifies and critically examines the principles of comparative psychology and shows how they can introduce other biases by objectifying animal subjects and encouraging scientists to remain detached. Andrews outlines the scientific benefits of treating animals as sentient research participants who come from their own social contexts and with whom we will be in relationship. With

discussions of science's quest for objectivity, worries about romantic and killjoy theories, and debates about chimpanzee cognition between primatologists who work in the field and those in the lab, Andrews shows how scientists can address the different biases through greater integration of the subdisciplines of comparative psychology.

The WEIRDest People in the World

How the West Became Psychologically Peculiar and Particularly Prosperous *Farrar, Straus and Giroux*

A New York Times Notable Book of 2020
A Bloomberg Best Non-Fiction Book of 2020
A Behavioral Scientist Notable Book of 2020
A Human Behavior & Evolution Society Must-Read Popular Evolution Book of 2020
A bold, epic account of how the co-evolution of psychology and culture created the peculiar Western mind that has profoundly shaped the modern world. Perhaps you are WEIRD: raised in a society that is Western, Educated, Industrialized, Rich, and Democratic. If so, you're rather psychologically peculiar. Unlike much of the world today, and most people who have ever lived, WEIRD people are highly individualistic, self-obsessed, control-oriented, nonconformist, and analytical. They focus on themselves—their attributes, accomplishments, and aspirations—over their relationships and social roles. How did WEIRD populations become so psychologically distinct? What role did these psychological differences play in the industrial revolution and the global expansion of Europe during the last few centuries? In *The WEIRDest People in the World*, Joseph Henrich draws on cutting-

edge research in anthropology, psychology, economics, and evolutionary biology to explore these questions and more. He illuminates the origins and evolution of family structures, marriage, and religion, and the profound impact these cultural transformations had on human psychology. Mapping these shifts through ancient history and late antiquity, Henrich reveals that the most fundamental institutions of kinship and marriage changed dramatically under pressure from the Roman Catholic Church. It was these changes that gave rise to the WEIRD psychology that would coevolve with impersonal markets, occupational specialization, and free competition—laying the foundation for the modern world. Provocative and engaging in both its broad scope and its surprising details, *The WEIRDest People in the World* explores how culture, institutions, and psychology shape one another, and explains what this means for both our most personal sense of who we are as individuals and also the large-scale social, political, and economic forces that drive human history. Includes black-and-white illustrations.

Why the World Doesn't Seem to Make Sense

An Inquiry Into Science, Philosophy, and Perception *Sentient Publications*

In this wise and original book, science writer and Zen priest Steve Hagen helps us to perceive the world as it is, not merely as we conceive it to be. This revised and updated edition includes new scientific understandings and clarifications of some of the more complex ideas. “Read this book: it will change how you look at things.” – Nick Herbert, Ph.D., author of *Quantum Reality*

Full House *Harvard University Press*

Gould shows why a more accurate way of understanding our world is to look at a given subject within its own context, to see it as a part of a spectrum of variation and then to reconceptualize trends as expansion or contraction of this “full house” of variation, and not as the progress or degeneration of an average value, or single thing.

Feeling & Knowing

Making Minds Conscious *Pantheon*

From one of the world's leading neuroscientists: a succinct, illuminating, wholly engaging investigation of how biology, neuroscience, psychology, and artificial intelligence have given us the tools to unlock the mysteries of human consciousness. In recent decades, many philosophers and cognitive scientists have declared the problem of consciousness unsolvable, but Antonio Damasio is convinced that recent findings across multiple scientific disciplines have given us a way to understand consciousness and its significance for human life. In the forty-eight brief chapters of *Feeling & Knowing*, and in writing that remains faithful to our intuitive sense of what feeling and experiencing are about, Damasio helps us understand why being conscious is not the same as sensing, why nervous systems are essential for the development of feelings, and why feeling opens the way to consciousness writ large. He combines the latest discoveries in various sciences with philosophy and discusses his original research, which has transformed our understanding of the brain and human behavior. Here is an indispensable guide to understanding how we experience the world within and around us and find our

place in the universe.

On Human Nature *Princeton University Press*

In this short book, acclaimed writer and philosopher Roger Scruton presents an original and radical defense of human uniqueness. Confronting the views of evolutionary psychologists, utilitarian moralists, and philosophical materialists such as Richard Dawkins and Daniel Dennett, Scruton argues that human beings cannot be understood simply as biological objects. We are not only human animals; we are also persons, in essential relation with other persons, and bound to them by obligations and rights. Scruton develops and defends his account of human nature by ranging widely across intellectual history, from Plato and Averroës to Darwin and Wittgenstein. The book begins with Kant's suggestion that we are distinguished by our ability to say "I"—by our sense of ourselves as the centers of self-conscious reflection. This fact is manifested in our emotions, interests, and relations. It is the foundation of the moral sense, as well as of the aesthetic and religious conceptions through which we shape the human world and endow it with meaning. And it lies outside the scope of modern materialist philosophy, even though it is a natural and not a supernatural fact. Ultimately, Scruton offers a new way of understanding how self-consciousness affects the question of how we should live. The result is a rich view of human nature that challenges some of today's most fashionable ideas about our species.

Inside Jokes

Using Humor to Reverse-Engineer

the Mind *MIT Press*

An evolutionary and cognitive account of the addictive mind candy that is humor. Some things are funny—jokes, puns, sitcoms, Charlie Chaplin, *The Far Side*, Malvolio with his yellow garters crossed—but why? Why does humor exist in the first place? Why do we spend so much of our time passing on amusing anecdotes, making wisecracks, watching *The Simpsons*? In *Inside Jokes*, Matthew Hurley, Daniel Dennett, and Reginald Adams offer an evolutionary and cognitive perspective. Humor, they propose, evolved out of a computational problem that arose when our long-ago ancestors were furnished with open-ended thinking. Mother Nature—aka natural selection—cannot just order the brain to find and fix all our time-pressured misleaps and near-misses. She has to bribe the brain with pleasure. So we find them funny. This wired-in source of pleasure has been tickled relentlessly by humorists over the centuries, and we have become addicted to the endogenous mind candy that is humor.

Kinds Of Minds

Toward An Understanding Of Consciousness *Basic Books*

Combining ideas from philosophy, artificial intelligence, and neurobiology, Daniel Dennett leads the reader on a fascinating journey of inquiry, exploring such intriguing possibilities as: Can any of us really know what is going on in someone else's mind? What distinguishes the human mind from the minds of animals, especially those capable of complex behavior? If such animals, for instance, were magically given the power of language, would their communities evolve an intelligence as

subtly discriminating as ours? Will robots, once they have been endowed with sensory systems like those that provide us with experience, ever exhibit the particular traits long thought to distinguish the human mind, including the ability to think about thinking? Dennett addresses these questions from an evolutionary perspective. Beginning with the macromolecules of DNA and RNA, the author shows how, step-by-step, animal life moved from the simple ability to respond to frequently recurring environmental conditions to much more powerful ways of beating the odds, ways of using patterns of past experience to predict the future in never-before-encountered situations. Whether talking about robots whose video-camera "eyes" give us the powerful illusion that "there is somebody in there" or asking us to consider whether spiders are just tiny robots mindlessly spinning their webs of elegant design, Dennett is a master at finding and posing questions sure to stimulate and even disturb.

Figments of Reality

The Evolution of the Curious Mind *Cambridge University Press*

Is the universe around us a figment of our imagination? Or are our minds figments of reality? In this refreshing new look at the evolution of mind and culture, bestselling authors Ian Stewart and Jack Cohen eloquently argue that our minds necessarily evolved inextricably within the context of culture and language. They go beyond conventional reductionist ideas to look at how the mind is the response of an evolving 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.

The Frontiers of Knowledge

What We Know About Science, History and The Mind *Penguin UK*

'Grayling brings satisfying order to daunting subjects' Steven Pinker
In very recent times humanity has learnt a vast amount about the universe, the past, and itself. But through our remarkable successes in acquiring knowledge we have learned how much we have yet to learn: the science we have, for example, addresses just 5 per cent of the universe; pre-history is still being revealed, with thousands of historical sites yet to be explored; and the new neurosciences of mind and brain are just beginning. What do we know, and how do we know it? What do we now know that we don't know? And what have we learnt about the obstacles to knowing more? In a time of deepening battles over what knowledge and truth mean, these questions matter more than ever. Bestselling polymath and philosopher A. C. Grayling seeks to answer them in three crucial areas at the frontiers of knowledge: science, history and psychology. A remarkable history of science, life on earth, and the human mind itself, this is a compelling and fascinating tour de force, written with verve, clarity and remarkable breadth of knowledge.

'Remarkable, readable and authoritative. How he has mastered so much, so thoroughly, is nothing short of amazing' Lawrence M. Krauss, author of *A Universe from Nothing* 'This book hums with the excitement of the great human project of discovery' Adam Zeman, author of *Aphantasia*

The Evolution of the Sensitive Soul

Learning and the Origins of Consciousness *MIT Press*

A new theory about the origins of consciousness that finds learning to be the driving force in the evolutionary transition to basic consciousness. What marked the evolutionary transition from organisms that lacked consciousness to those with consciousness—to minimal subjective experiencing, or, as Aristotle described it, “the sensitive soul”? In this book, Simona Ginsburg and Eva Jablonka propose a new theory about the origin of consciousness that finds learning to be the driving force in the transition to basic consciousness. Using a methodology similar to that used by scientists when they identified the transition from non-life to life, Ginsburg and Jablonka suggest a set of criteria, identify a marker for the transition to minimal consciousness, and explore the far-reaching biological, psychological, and philosophical implications. After presenting the historical, neurobiological, and philosophical foundations of their analysis, Ginsburg and Jablonka propose that the evolutionary marker of basic or minimal consciousness is a complex form of associative learning, which they term unlimited associative learning (UAL). UAL enables an organism to ascribe motivational value to a novel, compound, non-reflex-inducing stimulus or action, and use it as the basis for future learning. Associative learning, Ginsburg and Jablonka argue, drove the Cambrian explosion and its massive diversification of organisms. Finally, Ginsburg and Jablonka propose symbolic language as a similar type of marker for the evolutionary transition to human rationality—to Aristotle's “rational soul.”

Why Torture Doesn't Work

The Neuroscience of Interrogation *Harvard University Press*

Besides being cruel and inhumane, torture does not work the way torturers assume it does. As Shane O'Mara's account of the neuroscience of suffering reveals, extreme stress creates profound problems for memory, mood, and thinking, and sufferers predictably produce information that is deeply unreliable, or even counterproductive and dangerous.

On Philosophy and Philosophers

Unpublished Papers, 1960-2000 *Cambridge University Press*

"Philosophers suffer from a peculiar occupational hazard; people are always coming up and asking them just what it is that they do and how they do it. This is not the sort of question that biologists or economists or musicians get asked; people know, pretty well, what they do, and they may or may not be interested in the details. But a philosopher is different - it is very hard to imagine just what he does with his time"--

From Darwin to Derrida

Selfish Genes, Social Selves, and the Meanings of Life *MIT Press*

How the meaningless process of natural selection produces purposeful beings who find meaning in the world. In *From Darwin to Derrida*, evolutionary biologist David Haig explains how a physical world of matter in motion gave rise to a living world of purpose and meaning. Natural selection, a process without purpose, gives rise to purposeful beings who find meaning in the world. The key to this, Haig proposes, is the origin of mutable

"texts"—genes—that preserve a record of what has worked in the world. These texts become the specifications for the intricate mechanisms of living beings. Haig draws on a wide range of sources—from Laurence Sterne's *Tristram Shandy* to Immanuel Kant's *Critique of the Power of Judgment* to the work of Jacques Derrida to the latest findings on gene transmission, duplication, and expression—to make his argument. Genes and their effects, he explains, are like eggs and chickens. Eggs exist for the sake of becoming chickens and chickens for the sake of laying eggs. A gene's effects have a causal role in determining which genes are copied. A gene (considered as a lineage of material copies) persists if its lineage has been consistently associated with survival and reproduction. Organisms can be understood as interpreters that link information from the environment to meaningful action in the environment. Meaning, Haig argues, is the output of a process of interpretation; there is a continuum from the very simplest forms of interpretation, instantiated in single RNA molecules near the origins of life, to the most sophisticated. Life is interpretation—the use of information in choice.

Imaginary Magnitude *HarperCollins*

These wickedly authentic introductions to twenty-first-century books preface tomes on teaching English to bacteria, using animated X-rays to create "pornograms," and analyzing computer-generated literature through the science of "bitistics." "Lem, a science fiction Bach, plays in this book a googleplex of variations on his basic themes" (New York Times Book Review). Translated by Marc E. Heine. A Helen and Kurt Wolff Book

The Evolution of Everything

How New Ideas Emerge *HarperCollins*

The New York Times bestselling author of *The Rational Optimist* and *Genome* returns with a fascinating argument for evolution that definitively dispels a dangerous, widespread myth: that we can command and control our world. Human society evolves. Change in technology, language, morality, and society is incremental, inexorable, gradual, and spontaneous. It follows a narrative, going from one stage to the next; it creeps rather than jumps; it has its own spontaneous momentum rather than being driven from outside; it has no goal or end in mind; and it largely happens by trial and error—a version of natural selection. Much of the human world is the result of human action but not of human design: it emerges from the interactions of millions, not from the plans of a few. Drawing on fascinating evidence from science, economics, history, politics, and philosophy, Matt Ridley demolishes conventional assumptions that the great events and trends of our day are dictated by those on high, whether in government, business, academia, or organized religion. On the contrary, our most important achievements develop from the bottom up. Just as skeins of geese form Vs in the sky without meaning to and termites build mud cathedrals without architects, so brains take shape without brain-makers, learning happens without teaching, and morality changes for no reason other than the prevailing fashion. Although we neglect, defy, and ignore them, bottom-up trends shape the world. The Industrial Revolution, cell phones, the rise of Asia, and the Internet were never planned; they happened. Languages emerged and evolved by a

form of natural selection, as did common law. Torture, racism, slavery, and pedophilia—all once widely regarded as acceptable—are now seen as immoral despite the decline of religion in recent decades. In this wide-ranging and erudite book, Ridley brilliantly makes the case for evolution, rather than design, as the force that has shaped much of our culture, our technology, our minds, and that even now is shaping our future. As compelling as it is controversial, as authoritative as it is ambitious, Ridley's deeply thought-provoking book will change the way we think about the world and how it works.

Minds and Computers

An Introduction to the Philosophy of Artificial Intelligence *Edinburgh University Press*

Could a computer have a mind? What kind of machine would this be? Exactly what do we mean by 'mind' anyway? The notion of the 'intelligent' machine, whilst continuing to feature in numerous entertaining and frightening fictions, has also been the focus of a serious and dedicated research tradition. Reflecting on these fictions, and on the research tradition that pursues 'Artificial Intelligence', raises a number of vexing philosophical issues. *Minds and Computers* introduces readers to these issues by offering an engaging, coherent, and highly approachable interdisciplinary introduction to the Philosophy of Artificial Intelligence. Readers are presented with introductory material from each of the disciplines which constitute Cognitive Science: Philosophy, Neuroscience, Psychology, Computer Science, and Linguistics. Throughout, readers are encouraged to consider the implications

of this disparate and wide-ranging material for the possibility of developing machines with minds. And they can expect to de

The Meaning of Thought *John Wiley & Sons*

From populist propaganda attacking knowledge as 'fake news' to the latest advances in artificial intelligence, human thought is under unprecedented attack today. If computers can do what humans can do and they can do it much faster, what's so special about human thought? In this new book, bestselling philosopher Markus Gabriel steps back from the polemics to re-examine the very nature of human thought. He conceives of human thinking as a 'sixth sense', a kind of sense organ that is closely tied our biological reality as human beings. Our thinking is not a form of data processing but rather the linking together of images and imaginary ideas which we process in different sensory modalities. Our time frame expands far beyond the present moment, as our ideas and beliefs stretch far beyond the here and now. We are living beings and the whole of evolution is built into our life story. In contrast to some of the exaggerated claims made by proponents of AI, Gabriel argues that our thinking is a complex structure and organic process that is not easily replicated and very far from being superseded by computers. With his usual wit and intellectual verve, Gabriel combines philosophical insight with pop culture to set out a bold defence of the human and a plea for an enlightened humanism for the 21st century. This timely book will be of great value to anyone interested in the nature of human thought and the relations between human beings and machines in an age of rapid technological change.

Surfaces and Essences

Analogy as the Fuel and Fire of Thinking *Basic Books (AZ)*

Shows how analogy-making pervades human thought at all levels, influencing the choice of words and phrases in speech, providing guidance in unfamiliar situations, and giving rise to great acts of imagination.

Caught in the Pulpit

Leaving Belief Behind *Pitchstone Publishing (US&CA)*

What is it like to be a preacher or rabbi who no longer believes in God? In this expanded and updated edition of their groundbreaking study, Daniel C. Dennett and Linda LaScola comprehensively and sensitively expose an inconvenient truth that religious institutions face in the new transparency of the information

age—the phenomenon of clergy who no longer believe what they publicly preach. In confidential interviews, clergy from across the ministerial spectrum—from liberal to literal—reveal how their lives of religious service and study have led them to a truth inimical to their professed beliefs and profession. Although their personal stories are as varied as the denominations they once represented, or continue to represent—whether Catholic, Baptist, Episcopalian, Methodist, Mormon, Pentecostal, or any of numerous others—they give voice not only to their own struggles but also to those who similarly suffer in tender and lonely silence. As this study poignantly and vividly reveals, their common journey has far-reaching implications not only for their families, their congregations, and their communities—but also for the very future of religion.