The Mystery of Sleep: Why a Good Night’s Rest Is Vital to a Better, Healthier Life

The Harvard community has made this article openly available. Please share how this access benefits you. Your story matters

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Citable link</td>
<td><a href="http://nrs.harvard.edu/urn-3:HUL.InstRepos:34491886">http://nrs.harvard.edu/urn-3:HUL.InstRepos:34491886</a></td>
</tr>
<tr>
<td>Terms of Use</td>
<td>This article was downloaded from Harvard University’s DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at <a href="http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA">http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA</a></td>
</tr>
</tbody>
</table>
animals are typically portrayed as mindless killing creatures: everybody knows of the “lifeless eyes” of a great white shark or the “killer instinct” of a wolf. However, closer investigation of these animals often reveals complex social, emotional, and psychological features that are often ignored by us fearful, fleshy humans. In this book, G.A. Bradshaw takes readers on a deep dive into the minds of animals that so have often been feared and misunderstood, exploring unexpected connections between various fields of animal science and novel findings in psychology and neuroscience.

Bradshaw begins by pointing out some of the logical inconsistencies and gaps in conventional thinking – for example, grizzly bears actually mostly consume fruits, berries, and grains and kill only occasionally. We humans hardly classify ourselves as carnivores and yet humans often inflict far more pain and suffering to the animals we raise in captivity and kill for food than what so-called “wild” animals do in nature. Each chapter focuses on a particular animal (sharks, grizzly bears, crocodiles, coyotes, and others), detailing studies of these animals’ psychology, emotional behaviors and social sensibilities. Bradshaw paints a vastly more detailed portrait of the carnivore’s minds than has previously been appreciated. Various fields of study have been applied to animal psychology, but there has rarely been much cross-talk between researchers in such disparate fields as neuroscience, animal behavior, field researchers, and wildlife conservationists. Bradshaw makes important connections spanning decades of research in human and animal psychology, highlighting key mechanisms and common biological principles across the animal kingdom. These insights have important implications for scientific researchers and the public alike, in animal science, wildlife conservation efforts, and reveal deeper insights in neuroscience and psychology by studying common mechanisms across species.

The book is intended for a broad audience of readers of popular science and academics alike, and the wonderful narrative style will appeal to readers of all types. Bradshaw’s own expertise (recognizing and studying post-traumatic stress disorder in elephants and other animals) as well as the detailed research of others provide breadth and depth to the text, and extensive notes and references provide sources for further reading. Her storytelling ability and the structure of the book around personal stories, and of course the content itself, make this book a fascinating read.

Michael M. Lacy
Department of Molecular Biophysics and Biochemistry
Yale University


This book introduces readers to the topic of sleep, raises awareness of the effects of sleep disorders on people’s lives, and empowers people to use the tools in the book to recognize sleep problems and to seek help. The author has divided the book into four parts. Part one, titled “A Good Night’s Sleep,” covers chapters 1-5, with topics spanning reasons one sleeps, sleep requirements in the life stages, and discussions relating to sleep in the reproductive years, pregnancy and postpartum, and when sex hormone levels decrease in menopause and andropause. Interestingly, one learns that at various times and places, sleeping sitting up was the norm! Part two, titled “Do I Have a Sleep Problem?” includes chapters 6-9, covering the topics of how to identify a sleep problem, secondhand sleep problems, resetting the body clock, and a discussion on a world that never sleeps, noting that irregular-shift and overtime jobs can contribute to sleep deprivation and health problems. Part three, titled “Can’t sleep, Can’t stay awake,” consists of chapters 10-17, which introduce the reader to insomnia, restless legs syndrome, sleep apnea, narcolepsy, fear of sleeping and other unusual ailments, medical and psychiatric conditions that affect sleep (like diabetes, heart failure, depression, obsessive-compulsive disorder), and medications that contribute to sleep disorders. In part four, “Getting Help,” chapters 18-21 cover the value of the sleep clinic, along with topics on beating insomnia without pills, medications that treat sleep disorders, and time for bed.

Throughout the book, the author uses examples, like the case of the sleepy teenager or the sleepy woman with irregular periods who had symptoms of polycystic ovarian syndrome (PCOS), to bring the material to life; he also discusses treatment options for these cases. Additionally, the author uses figures throughout the book, like recommended hours of sleep for each of nine age groups, to summarize key data. The book can be of interest to various groups, including new mothers who may experience sleeplessness as a symptom of depression and who should seek medical attention for evaluation and treatment. Useful tools that are introduced in identifying a sleep problem include the Epworth Sleepiness Scale and the sleep diary. One can also read an interesting discussion about Spain and why one eats dinner there so late! In trying to manage insomnia, one learns about the usefulness of the sleep clinic, the 13 commandments for fighting insomnia, and treatment options for various conditions that affect sleep, like using a drug called prazosin for treating nightmares in patients with post-traumatic stress disorder (PTSD).
In some cases, one can beat insomnia without pills, and use cognitive behavioral therapy or other modalities instead. As the author notes, sleep problems can occur at any stage of life. Indeed, insomnia has many forms, many symptoms, many causes, and many treatments! For more knowledge and ways to solve your sleep problems, I invite you to read the book.

Ermal Bojdani, MD
PGY-2, Harvard South Shore/
VA Boston General Psychiatry Residency
Harvard Medical School


Obesity is a global health issue that people outside the field may have outdated perspectives on. Research has shown us that many factors beyond keeping a balance between energy intake and expenditure, regulates weight gain; but there is still a lot left to understand. Ruth Harris gives us a comprehensive look at two factors that are related to this broad topic: appetite and food intake. This book does a great job at showing its readers current research from a systems level down to the genetic level across basic and clinical labs as well as different models of study. Each chapter will not only present you what is current in the different research topics outlined, but they also provide a historic background on the topic for better understanding. Additionally, some chapters also focus on the new tools or therapies being developed because of current basic and clinical work.

Since professionals in the topic write each chapter, the book is very easy to follow; it also helps that the prose used is not highly specialized, meaning that readers that are less familiar with the topic will still be able to understand. The target audience of Appetite and Food Intake can be broad because of this as well. For example, this book can serve as a thorough review for students emerging into the field of obesity, appetite control, and energy balance for their own research and thesis. Furthermore, this book should cater to health professionals interested in the topic as well, it will give them a much broader sense of the different mechanisms and systems at play in these specific behaviors.

In summary, this book is well organized; it serves as a thorough review that looks at different forms of research tackling the same topic, giving the reader a holistic view on what is current in appetite and food intake. Because of this, the book is a must for those interested in studying these topics more deeply in their own research, or health-related field of work.

Gabriela Bosque Ortiz
Interdepartmental Neuroscience Program
Yale University


Foundations of Neural Development was created out of need for an updated developmental neuroscience text aimed at an undergraduate audience. Similar to other textbooks of this nature, the material is presented with developmental events in chronological order, beginning with cell differentiation and embryonic development in the very first chapter and ending with social behaviors in the final chapter. Uniquely, Breedlove offers both evolutionary and philosophical perspectives that contextualize these wide-ranging topics.

The provided evolutionary perspective consists of four critical events giving rise to the evolution of the human brain. The first is the shift to cell-cell communication for cues directing cell differentiation. Whether this entails direct contact or diffusible signals, cell-cell communication drives the establishment of a body plan (Chapters 1-2), cell division and migration (Chapter 3), differentiation of neurons and glia (Chapter 4), path of axonal growth cones (Chapter 5), initiation and maturation of synapses (Chapter 6), and apoptosis (Chapter 7). An extension of cell-cell communication mechanisms to electrical activity leads to the second critical event, activity-guided synaptic plasticity through which neurons can affect their connections with other cells (Chapter 8). Together with the development of activity-guided synaptic plasticity is the third event, the development of sensory experience-dependent guidance of development (Chapter 9). Lastly, the cumulative effect of the previously stated events is the shaping of brain development by behavior and social experience (Chapter 10). With the chapters in this text organized around these four events, the evolutionary perspective is useful for understanding and consolidating the material.

In contrast, the philosophical perspective that attempts to discuss the complementary relationship between developmental neuroscience and epistemology may seem superfluous. Parallels drawn between scientists and philosophers in the study of knowledge existing before birth can be interesting but also distracting and unnecessary for understanding the scientific mechanisms discussed.

Vignettes at the beginning of each chapter relate to a relevant human condition, and inserts with classical or ongoing studies appear in boxes throughout. The figures