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A View from the Feathered Side

Book Review

Stacy L. Memering; Todd K. Shackelford

Department of Psychology, Oakland University, Michigan, USA

Bird Sense: What It's Like to Be a Bird, by Tim Birkhead, Walker Publishing Company, 2012, 265 pp.
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Introduction

Something about birds lures us in. When we hear the word “graceful” we picture a swan, with its long beautiful neck, dancing along the water’s surface. When we hear “exotic” we imagine colorful parrots or toucans sitting high in the jungle treetops. The word “romance” brings to mind a pair of doves, nuzzling one another. Peacocks are a symbol of beauty and extravagance. Macaroni penguins and puffins are like cartoon characters brought to life. And flamingos with their long legs and neon appearance—it is no wonder they are a popular culture icon, forever enshrined in plastic on people’s front lawns. We can’t help but stare at birds, watch them, and be entranced by them. Birdwatching can range from casually observing from a kitchen window as a robin eats from a birdfeeder, to the international travels of dedicated ornithologists who scientifically study multiple species of birds. Novice to expert, amateur to professional, one cannot deny the aesthetic appeal of birds and their ability to captivate our senses with their beautiful plumage, curious mating behaviors, and vast range of calls and songs.

A common approach in an amateur bird enthusiast is to focus on the outward

appearance and manifest behavior of birds. Most popularized documentaries of birds showcase their bizarre mating rituals, their uncanny mimicry abilities, and their hard-fought struggles of migration and breeding. While these pull on our heartstrings and entice our eyes, they are often just an outsider’s narrative. Rather than mere description of birds’ exteriors and actions, Tim Birkhead’s *Bird Sense: What It’s Like to Be a Bird* takes us on a journey into the inner lives of birds and explains how and why they evolved into the fascinating creatures they are today. A professor at the University of Sheffield, Birkhead has a lifetime of experience studying birds from all over the world, and has written seven other books including the award-winning *The Cambridge Encyclopedia of Ornithology*, *The Red Canary*, and *The Wisdom of Birds*.

Although Birkhead surly has the ability to go well over the head of a common reader with his extensive knowledge, in *Bird Sense* his writing has an inviting quality that will captivate anyone with even the slightest interest in birds. In fewer than 250 pages, he manages to review the history of ornithology, highlighting breakthroughs and paying homage to the rock stars of the bird-researching world, and also clarifying some of the gravest misconceptions that have permeated the field. Birkhead draws upon decades of personal and professional

experience from many different countries, studying many different bird species, to paint elaborate pictures with his words. He explains the intricacies of several major aspects of bird life in such depth that professionals are likely to learn something new and yet in a way that is not overwhelming to a newcomer.

Many times during each chapter, we found ourselves pausing to reread a section, not out of confusion but in awe of some of the instincts some species of birds have evolved. For example, we were stunned, even shocked, to learn how some brood parasitic chicks use their sense of touch to kill the host nest mates, shaking them to death or directly pushing them out of the nest before the parasitic chicks are old enough to open their eyes. We were awed to learn of the sensitivity of the thermo-regulated brood patch in some species, the area of skin used for incubating eggs, and how the heat it generates can be manipulated to determine the number of eggs a female lays. And the chapter on magnetic sense, in which Birkhead reviews astonishingly clever experiments designed to examine birds' internal compasses for migration, left us excited for how research in this field continues to add to our understanding of these amazing feats of wayfinding. The kiwi's ability to smell worms deep below the soil surface without even bringing its nose to the dirt and the great grey owl's technique for capturing rodents beneath the snow entirely by sound gives the impression of superpowers. But much can be understood by looking at a bird's structure and resulting adaptive behavior. As Birkhead points out, the fields of animal behavior and behavioral ecology have been changing, with increasing focus on the causes of behavior. Using avian senses as a guide, we can better understand the kinds of worlds birds live in and, by extension, their resulting behavior and abilities. It is a mammoth task to summarize an entire branch of study, but Birkhead does so with grace and clarity.

We found the structure of the book to be seamlessly executed. Each of seven bird senses (seeing, hearing, touch, taste, smell, magnetic sense, and emotions) is addressed in a separate chapter. Exquisite illustrations by Katrina van

Grouw introduce each chapter, providing a burst of detail for a particular species addressed in the chapter that lends itself beautifully to the reader's imagination as they move through the chapter. Birkhead begins each chapter with a personal example, which not only makes the information more interesting, but also serves as a vivid exemplar to reflect on throughout the reading. He relates the stories to the history of research within that area of avian studies and builds up to our current understandings of bird life. The descriptions are a bit technical at times, but Birkhead refers to multiple experiments and examples throughout to ensure understanding, and he laces his writings with wit and humor, making it fun to learn. Birkhead also draws upon his relationships with other ornithologists, infusing the chapters with direct information from his personal communications with them. He makes the reader feel connected to the cumulative process and products of avian research.

As with any area of productive science, ornithology is ever-changing and advancing. Birkhead addresses areas in which the field is lacking, directions in which future research should move, and ideas for how it may do so. He takes a different approach than most ornithologists in *Bird Sense* by focusing on how birds perceive the world, explaining them from an "insider's" perspective. Although we may not be able to know what it is like to be inside a bird's head, technology and discoveries are making it easier to understand their sensory organs and how their experiences are shaped by them. Birds seem so mysterious and so different from us, but are their behaviors really so unlike our own? They too were built by natural selection. The sensory systems guide their behavior just as our sensory systems guide our behavior, including when and what to eat, when to fight or escape, and when to mate or parent. Birkhead builds a powerful case that we can learn much about animals by investigating the senses they use in daily life.

Studies of birds have helped develop our understanding of many concepts of evolution and ecology as far back as Darwin's studies of the birds on the Galapagos Islands.

Ornithological discoveries continue as technological tools advance, and the field grows as old misconceptions are put to rest (such as the belief that birds have no sense of smell). Birkhead also addresses new senses that are being explored, such as emotion and an electromagnetic sense. We have a more limited understanding of these senses, but Birkhead reviews several fascinating examples of behavior and experiments on migration, death, and mating that make us hopeful for future exploration of these senses.

Birkhead takes us from one sense to the next, building upon each and demonstrating how they are used in combination to form a cohesive bird point-of-view experience. He cautiously and thoughtfully reflects our understanding of humans to birds and vice versa. As he explains, the more we study and know about human senses, so too might we engage similar studies of birds. And the more we discover about birds, the better position we will be in to consider similarities with and differences from humans. We hope Bird Sense will inspire a new wave of interest in the study of birds by which we can continue to build our knowledge of these amazing creatures and, by extension, ourselves and other animals. Regardless of its other possible effects, Bird Sense supplies the reader with a wonderful foundation of birds' senses and provides the means by which to look at birds in a whole new way.

Stacy L. Memering is pursuing her M.S. in psychology from Oakland University. She received her B.A. in Psychology from Oakland University in 2011. Memering is a member of the Evolutionary Psychology Lab (www.ToddKShackelford.com) and is interested in human sexual psychology and behavior, and the origin of religious belief.

Todd K. Shackelford received his Ph.D. in evolutionary psychology in 1997 from the University of Texas–Austin. He is Professor and Chair of Psychology at Oakland University (<http://www.oakland.edu/psychology>) in Rochester, Michigan, where he is Co-Director of the Evolutionary Psychology Lab (www.ToddKShackelford.com). He led the founding of new Ph.D. and M.S. programs (<http://www.oakland.edu/psychology/grad/>), which launched in 2012. Much of Shackelford's research addresses sexual conflict between men and women, with a special focus on testing hypotheses derived from sperm competition theory.