Communication is everywhere and occurs at the molecular, cellular, and organismal levels. Thus, books about animal communication have a lot of ground to cover and tend to be on the long side. R. Haven Wiley does not disappoint us with this comprehensive and refreshing novel reappraisal of the evolution of communication. His main thesis is that communication systems must be studied simultaneously from the perspective of the signaler and the receiver, and their study must be based on the logic and tools of signal detection and game theory. This deceptively simple premise has profound consequences. The volume is organized into four main parts.

The first part includes the most clearly written, logically presented description of sound, and its production, transmission, reception, and noise that I have read. Part Two introduces signal detection theory and justifies the underlying focus of the book on noise and uncertainty. The explicit signal detection focus ensures that we consider the problem that actors must make decisions under uncertainty (noise is everywhere) and this creates a set of constraints that both signalers and receivers must solve. He defines a signal in a nontraditional way that emphasizes, among other things, that signals typically evoke responses from receivers but do not contain all of the energy required to power that response. His definition combines what others traditionally refer to as cues into a more inclusive view of signals, but it is a logically cohesive definition that follows his focus on signal detection. He then explains why communication must be simultaneously viewed from the perspective of both the signaler and the receiver, and that evolution leads to equilibrium solutions for signaling systems whereby signals are costly, honest, and cooperative in the sense that both signalers and receivers could not be doing any better with other combinations of signal structure or decision thresholds. I found the key chapter that integrates this (Chapter 10) tough going.

In Parts Three and Four, Wiley first applies his model to reevaluate honesty, the importance, and role of sexual selection to explain the evolution of extravagant displays, cooperation, and complex sociality, and how the model also works at the molecular and cellular levels. These chapters will provide guidance for anyone who wishes to test his model; something he has worked hard to ensure by pointing out needed work and the underlying logic. Then he speculates more broadly about human language evolution, meaning, and free will.

Although the volume is biased toward acoustic communication, and many examples come from studies of birds (he is a bioacoustician and ornithologist), his thesis is much broader and illustrated with examples from other modalities and taxa. The book was written with a limited, but annotated bibliography; I wished for a more comprehensive set of references in the text. Despite this minor quibble, this provocative and extremely well-written volume will stimulate discussion and hopefully more research that seeks to parameterize his models. I completely agree that noise matters and I hope this book serves its purpose by introducing this powerful way of thinking about signal evolution to a broader audience.

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Among Chimpanzees: Field Notes from the Race to Save Our Endangered Relatives.

Research on the behavior and cognition of dogs has exploded in recent years. This is likely because dogs are abundant, enthusiastic about working with people (and often with owners who are enthusiastic about letting them be studied), easy to work with, and due to their close association with humans, they offer the tantalizing promise of telling us something fundamental about ourselves. Despite the abundance of new research, however, research on dogs has to some extent remained a niche, rarely cited in studies of behavior and cognition in other species. This is a shame, given the high quality of much of this new research. The Social Dog provides a much-needed overview of this work, and in particular the role that research on dogs is playing in increasing our understanding of behavior and cognition more broadly.

The book consists of 13 chapters organized into three sections: Theoretical Aspects, Social Behavior (separated into Dog-Dog and Dog-Human), and Social Cognition. I appreciated the first few chapters for their taxonomic breadth, particularly Virányi and Range’s chapter, which provided a critical assessment of the research comparing dogs and wolves. Unfortunately, the remaining chapters
focus almost exclusively on dogs because there is so little research on other canids, a situation that will hopefully improve. Beyond canids, however, each of the authors placed their research into a broader taxonomic context where appropriate, an integration that firmly placed dog research within the existing study of social behavior and cognition.

One recurrent, albeit implicit, theme throughout the volume is how little consensus exists on many of the topics related to behavior and cognition in domestic dogs. Researchers debate features as fundamental as the degree of aggression that occurs in dog-dog encounters, the differences between domestic dogs and wolves, and the impact of domestication on the evolution of the behavior and cognition of dogs (and, implicitly, other species). Part of this is no doubt due to the relative infancy of the field; there were a few studies as early as the 1960s, but the majority of the work cited in this volume has been published since 2000. In addition, dogs live in a variety of different settings, and study contexts range from observations of packs with relatively little human involvement to highly socialized pets. Although an advantage of studying dogs is the variety of contexts in which data can be gathered, this diversity can also be a limitation that makes cross-study comparisons challenging (e.g., dogs “day care” centers disallow aggressive pets, artificially driving down the frequency of aggression in these study samples). As many of the authors note, one key challenge remaining for those who study dogs is to utilize similar methods across these different environments to develop a better understanding of fundamentals of dog cognition and behavior, and how they are influenced by these various settings.

The Social Dog is intentionally aimed at a broad audience, both in terms of the topics covered and the apparent target readership. As a result, virtually any reader with an interest in dogs, domestication, or the evolution of social cognition and behavior will likely find something of interest, although the breadth means that few readers will find equal satisfaction in all of the offerings. As a researcher who does not study dogs, I found it to be a comprehensive and enlightening overview and will read further on several of the ideas that I encountered. This book is an excellent resource for researchers who want a thorough overview on recent advances in our understanding of the cognition and behavior of domestic dogs as well as for trainers or veterinarians who wish to know more about the cognition and behavior of the species with which they work.

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With the rapid expansion of canine science, compiling a complete overview of dog behavior, evolution, and cognition is a daunting task. Ádám Miklósi is perhaps the only scholar today capable of accomplishing this worthy goal. Having published over 100 elegant papers on canine behavior and cognition, Miklósi has been at the forefront of the field since its early days. In this second edition, the author sets out to increase dogs’ prominence in ethology by synthesizing the exponentially developing fields of dog behavior, evolution, and cognition.

Miklósi achieves these aims, crafting what is perhaps the most inclusive volume on canine science to date. Chapters 1–3 set a strong foundation, placing canine science and its methodologies into historical context. Chapters 4–8 present overviews of dog ecology and evolution, focusing on dogs in society and providing a comparative overview of evolution and domestication of the genus Canis. Chapters 9 through 13 summarize a wide range of topics in cognition: describing the perceptual world of the dogs, how dogs solve physical and social problems, how dogs communicate and play, and how dogs learn socially and solve social problems. Chapters 14–16 cover additional topics in dog behavior, specifically canine development over the lifecourse, individual differences in canine cognition, and how genes contribute to canine behavior.

Each chapter succinctly provides relevant terminology and background, reviews a multitude of studies in dogs, and charts a course for the field with directions for future research. We especially liked that the chapters included practical considerations for students interested in the applications of this work to canine training and veterinary issues. Throughout the book, Miklósi specifically aims to integrate the field of canine science and provide inspiration for future research without advocating for a particular point of view. In many ways, the inclusive, unbiased nature of this overview is the volume’s biggest strength—no other publication incorporates as many perspectives on canine science or provides such a holistic overview of the research conducted in each subfield. However, this impartial inclusiveness inevitably comes at a cost. At times it is necessary for readers to critically discern the takeaway points and determine the conclusion that is best supported by current research. For this reason, we suggest that this book is best for more advanced scholars who have the background necessary to critically evaluate the research presented. For anyone new to the field, sup-