

what that implies about keeping them in captivity. Lori Marino's chapter on captive marine mammals is equally persuasive, using a very thorough, accessible review of current scientific understanding of cetaceans to build an argument that it is impossible for cetaceans to flourish in captivity and that they should not, therefore, be kept in that way. Although not necessarily agreeing with large parts of it, I also very much enjoyed Carlos Naconecy's chapter entitled: 'What is morally wrong with killing animals (if this does not involve suffering)', which was very clearly laid out and argued.

*The Palgrave Handbook of Practical Animal Ethics* does not really seem to me to be what it proclaims itself to be. It is heralded as a "new book for a new field of enquiry: Animal Ethics". Yet animal ethics has been a gradually growing field of interest for at least the last decade (indeed, the First International Conference on Veterinary and Animal Ethics was held back in 2013), and there are many previous publications in the area by a wide range of authors. Some claims are made which are hard to substantiate. Kay Peggs writes in Chapter 23, for example: "It is unusual to think about companion animals as suffering non-human animals" yet surely that is exactly what is going on in the course of common discussions about canine separation anxiety; cats being kept indoors and brachycephalic breeds? The book doesn't really give the reader access to all of 'animal ethics', but rather to one particular way of approaching ethical questions relating to animals ("...the academic exploration of the moral status of the non-human...which helps us to understand the influences...that legitimate animal abuse", as the editors tell us in the introduction). The editors attempt to persuade us that this approach is animal ethics, in its entirety. I disagree. The focus of the book is philosophical, sociological, and legal, with minimal contribution from animal welfarists or veterinarians. Thomas White, the author of the introductory chapter on 'The ethics of captivity' states that "Senior scientists...lack the requisite technical skills necessary to handle the intangible character of normative, philosophical thinking". One might rejoin, in an equally sweeping way, that senior philosophers lack the requisite training to interpret scientific data or animal behavioural and physiological parameters. There are many people from many disciplines who share a common interest in improving the lives of animals, albeit an interest expressed in different ways, and based on differing principles. It is a shame that what presents itself as a handbook didn't incorporate more diverse approaches. Nonetheless, there is a lot of interest within its considerable volume, and if a rights-based way of 'doing' animal ethics appeals to you there is no doubt that this book is well-written, scholarly and covers a wide range of topics.

## Reference

**Campbell MLH** 2019 *Animal, Ethics and Us*. 5M Publishing: Sheffield, UK

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## **Field and Laboratory Methods in Animal Cognition: A Comparative Guide**

Edited by N Bueno-Guerra and F Amici (2018). Published by Cambridge University Press, Shaftesbury Road, Cambridge CB2 8BS, UK. 456 pages Paperback (ISBN: 9781108413947). Price £39.99.

I was excited to receive a copy of *Field and Laboratory Methods in Animal Cognition: A Comparative Guide* as it promised to fill a gap in the literature that is currently wide open; that of bringing together a cross-section of researchers, all of whom have designed cognitive tests for their study species by considering the particular perceptual and motor abilities that make up each species' *Umwelt*. The book is an edited volume covering a broad range of taxa in alphabetical order — starting with ants and ending with tortoises, with elephants, chickens, bats and sharks (to name but a few) in between. Each chapter covers the same set of topics, focusing on a different species of animal, providing an overview of what each species can perceive (its *Merkwelt*) and what it can do (its *Wirkwelt*) before covering the body of cognitive research on that species, with a heavy emphasis on methodology. The formulaic nature of each chapter's format makes it a book well suited for dipping into, rather than reading from cover-to-cover.

The theme of the book is to focus on each species in its own right rather than considering its abilities in relation to a human baseline or, indeed, that of any other species, and to provide a practical guide specific to the study of each animal in turn. Authors are experts in the field and provide inside advice and tips for new researchers embarking on the study of animal cognition, with a particular emphasis on fieldwork. The chapters provide some key points for cognition research in general, as well as tailored, species-specific sticking points.

This engaging book highlights the very different ways in which the world can be perceived, and the unique characteristics these differences allow each species in question. The deliberate move away from an anthropocentric view of animal cognition is laudable in a world where researchers are increasingly encouraged to value research in terms of the impact it can offer, very often by considering how it relates to humans. This book offers a timely call back to what is often called 'blue skies science', though that term belittles the importance of understanding the myriad of ways that the world can be perceived and acted upon, as well as the crucial point that humans are not the pinnacle species to which all others should be compared, but simply one member of the web of life on Earth. This book's USP is really based on its use of the researchers' own voices, which provides an intimate window into their own particular body of research. The book is full of generous advice about potential pitfalls and things to look out for that are particular to a study species, giving each chapter life and a depth that would be lost in a more general text.

This is a great book for those starting out in the field. It will provide food for thought when choosing a research species, as well as specific advice to those who have already chosen their species. It provides some interesting and enjoyable accounts of a variety of problems that authors have both encountered and solved when starting to work in (what are often now) well-established field sites. Lily Johnson-Ulrich, Kenna Lehman, Julie Turner and Kay Holekamp's chapter on their hyena research really brought the experience of establishing a field site to life in a way that was reminiscent of my first reading of Mark and Delia Owens' *Cry of the Kalahari* as a PhD student, and similarly inspiring. Irene Pepperberg's chapter on grey parrot cognition showed the insight that it is possible to gain by focusing decades of research on one particular species of interest, while also pointing out the nearly complete lack of field research on this behaviourally important and endangered species. The species covered in this book range from those that are nearly, if not completely, impossible to bring into a laboratory, to those that are impossible to study anywhere else. There are a good range of species in between these two extremes, showing the knowledge that can be gained from studying species in the wild as well as under more controlled laboratory settings, and what understanding can be gained by crossover between lab and field. The evident expertise of each author writing about the species they have studied, often for decades, is impressive.

I would have liked to have had more detailed coverage of the current state of cognitive research on each species and, as someone who has struggled to implement cognitive tests in the field, I would have liked the field work tips to be slightly more practical in nature. Some of the chapters were lacking in detail about conceptual issues and research findings, with a heavy emphasis on methods. While the title leaves no doubt about this focus, it seemed somewhat incomplete to get such a brief review of cognition research in some (though not all) of the chapters. Many of the chapters focus heavily on what research has been done rather than what has been found, with a fairly heavy reliance on either the background knowledge of the reader, or their willingness to research the area in more detail.

Having said that, this book is a real celebration of the progress that has been made in the field since pioneering cognitive ecology work in the late nineties. At that time, there was an active movement to take the study of animal cognition out of the laboratory by encouraging behavioural ecologists to consider the selective forces shaping animal cognition specifically, spurring a whole field of research into animals' adaptive cognitive specialisations. The ground-breaking comparative work of founders of this field, such as Russell Balda, Nicola Clayton, David Sherry and Sarah Shettleworth, has paved the way for the huge diversity of cognition work presented in this book. The book's focus on taking cognitive testing into the wild shows how much the field has expanded from exploring the underlying and ubiquitous principles of learning (which provide the cornerstone for current researchers) to making and testing predictions about cognitive abilities based on the

unique pressures faced by any particular species. The key achievement of this book is that it showcases the influence of the cognitive ecology 'revolution' and highlights how experimental psychology and ethology have come together in an unprecedented way. This book will inspire new researchers by showing them that it is possible to study cognition in any and all species, and by giving them the foundation to start their own investigations into the cognitive abilities of many more, as yet unstudied, species.

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### **Critical Terms for Animal Studies**

Edited by L Gruen (2018). Published by University of Chicago Press, Chicago 60637, USA. 448 pages Paperback (ISBN: 978-0-226-35542-9). Price \$US32.50.

*Critical Terms for Animal Studies* is an intellectual delight. Each of the 29 chapters provides an overview on a particular term (eg 'pain', 'behaviour', 'rights', 'sanctuary') that has significant relevance to animal studies (including some terms, like 'abolition' and 'postcolonial', that do not immediately spring to mind). Every chapter provides ideas to engage you and provoke thought. As Gruen notes, a variety of 'missing' terms one would expect, like (eg) 'agency' and 'anthropomorphism', are covered within multiple entries (and are obvious in the index), though other terms like 'agriculture', 'habitat', 'religion', 'fictional animals', 'wild', and 'environmental ethics', do not much appear. Authors, although typically quite thorough in their presentations, are not always all encompassing in their assessment of terms; each chapter might best be thought of as an elaborated reflection on a term, gathering insights for the reader to ponder. Ideas resonate with and sometimes contradict each other across chapters. In her excellent introductory essay, Gruen acknowledges that animal studies is not a unified field with agreed upon objectives, but rather encompasses diverse worlds of thought, discourse, and action concerning animals (which includes humans); she wisely edited with a view to include this diversity. Although each chapter is entitled by one term, every chapter examines the ramifications of the ideas represented in these terms for animals and, often, life in general.

Those concerned with non-human animal welfare, ethics, and rights will find much to engage them. In fact, almost every chapter rings with implications about human responsibility toward other animals, or the natural world. Palmer and Sandøe offer a satisfying overview of the research about, and benefits of, caring for non-human animal 'welfare', acknowledging agreement (eg) that many of these animals' natural activities and desires should be satisfied and their suffering diminished, but detailing the problems inherent in measuring whether or not these goals have been accomplished (see also Varner on 'sentience'). Related, is Braithwaite's discussion of the difficulties surrounding how we detect 'pain', the experience that propelled so many authors to begin the continuing and expanding narrative about human moral responsibilities toward other animals. While arguing that we need to maintain