



ISBE Newsletter

Supplement to *Behavioral Ecology*
www.behavecol.com

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FROM THE NEWSLETTER EDITOR

Behaviour, biodiversity and politics

Have you ever heard of the Chagos Archipelago?
 Not many have.

It is a collection of tropical islands in the middle of the Indian Ocean, currently controlled by the UK. Due to its remote location, the presence of an American military base, and the ruthless expulsion of its civilian inhabitants 50 years ago, large parts of this area has been undisturbed by human activities, such as fishing, for decades. Ten years ago, it was turned into an enormous no-take Marine Protected Area (MPA) - the size of France. The US and UK military presence have kept illegal fishing to a minimum.

One result of all this, is a collection of the most pristine coral reefs in the world. Biologists report fish densities ten times higher than other protected reefs! The area also appears much more resilient to disturbances such as climate change. Chagos is likely an important refuge for migratory species and may boost the biodiversity of large parts of the Indian Ocean. For a behavioural ecologist interested in behaviours within an intact coral ecosystem, this is perhaps the last place on Earth.

A month ago, the International Court of Justice ruled that the British should hand back these islands to its displaced inhabitants. It is unclear how the UK and the US will act now. One scenario is that Chagos is incorporated into the Republic of Mauritius. If so, what will happen to the MPA? One concerned biologist I talked to feared that the Mauritian government will be tempted by quick profits and auction off the fishing rights to countries like Taiwan or China. In his words "If that happens, it will all be wiped out within 5 years". Many are hoping that the MPA remains intact, but the economic incentive to exploit it is enormous.

What about the thorny issue of balancing the rights of the displaced Chagossians against the preservation of biological diversity? Can we really deny people the use of their home in order to maintain a reserve? But any level of expanded human presence is likely to have negative impacts. In the current global biodiversity

crisis, can we afford to lose something as utterly unique as the Chagos Archipelago? Perhaps a middle ground is possible, such as maintaining some level of protection funded by small-scale ecotourism.

Should we, as scientists, even get involved in these matters, with all their ethical complexity? Should we become lobbyists? Should we be involved in policy?

I vividly remember Tim Caro's plenary at ISBE 2006 in Tours, France. This was my first ISBE conference and his message was very clear: behavioural ecologists must become more involved in conservation, and our research questions should spring from conservation problems. Tim's opinion was in stark contrast to the attitude I had experienced until then: that behavioural ecology should be kept as "pure" curiosity driven research, and that applied projects are only used as a last resort to get funding.

We hear warnings that the effects of the biodiversity crisis will even eclipse those of the climate crisis. More importantly, the two crises will interact in vicious ways. Many of us feel we should get more involved. But how? What should our role be? If we join politically charged discussions, will we lose scientific credibility? One possibility may be to liaise with NGO's and government agencies dedicated to conservation. Their skills, such as how to best nudge policy makers, can complement our expertise about the animals themselves. I would love to hear the opinions of the ISBE membership on this complex topic.

I am delighted to have Tim as one of this issue's book reviewers along with Kristina and Tina. I would like to thank them and all the others who have contributed to this issue!

P. Andreas Svensson
 ISBE Newsletter editor

Reference

Sheppard et al. 2012. Reefs and islands of the Chagos Archipelago, Indian Ocean: why it is the world's largest no-take marine protected area. *Aquat Conserv*; 22: 232–261.

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CONTRIBUTIONS TO THE NEWSLETTER

Your contribution is important!

The ISBE Newsletter publishes Book Reviews, Conference/Workshop Reviews, Job postings and other advertisements, as well as Commentary Articles of interest to the International Society for Behavioral Ecology. The ISBE Newsletter will only consider work that is not already published or intended to be submitted for publication elsewhere.

Book Reviews: Persons involved in the publishing of books who would like these to be considered for review in the Newsletter should contact the editor so that they can be added in the books-for-review list. Authors may submit a list of possible reviewers. Members who wish to review a particular book should contact the editor. The editor will provide reviewers with instructions. Reviews are typically 1500-2000 words. For a list of books currently available for review, see the end of this Newsletter.

Workshop/Conference Reviews: Workshop and/or Conference reviews can be prepared in one of the following formats: *Brief synopses* (around 1500 words) and *Longer reports* (around 3000 words). Graduate students and postdocs are strongly encouraged to consider contributing to writing these reports.

Cartoons: Cartoonists and other artists are encouraged to submit artwork, either in hardcopy, or as TIFF or high resolution (>300 dpi) gif or jpg files. All cartoons published in the Newsletter will be credited to the illustrator.

Spotlight on young scientists: Early career members (PhDs/ postdocs) are encouraged to participate in the section "Spotlight on"; please provide name, education, current address, research interests and selected papers in an email to the editor.

Upcoming conferences and events: Please submit information about events that are relevant to the Society. Do this by emailing the Newsletter editor so that it can be included in the "Conference calendar"

The deadline for contributions to the next issue is Sep 30, 2019

NOTES FROM THE PRESIDENT

Much of the work of the Society is the ever-present task of organising our biennial meetings. I am happy to report that planning for the 18th Congress in Melbourne in September 2020 is proceeding apace, with contracts now signed with the agency which will provide the conference services. Bob Wong and his team are doing an excellent job!

2020 is now next year, and we are starting to think about a venue for the 19th Congress in 2022. A reminder that we are keen to get expressions of interest in hosting this meeting by 30 June this year. Although I will be on a birding trip to China in late May, I am always available to talk about what is involved in hosting a Congress (andrew.cockburn@anu.edu.au).

The other major role of the Society is the publication of *Behavioral Ecology*. One area on which we have been forced to focus is the decision by some major European research funders to mandate publication of

research they fund in gold open access journals, which operate exclusively under a model where authors pay to publish, but access to the journal is free. This would exclude journals such as *Behavioral Ecology*, and indeed most journals published on behalf of scientific societies, as these journals, that have a hybrid model where authors can pay for open access but are not obliged to do so. There are a number of worrying consequences of the move away from 'society journals' to open access journals, not least that most of our income and the ability to support our activities comes from journal subscriptions. If any member of the society has opinions about the move to open access we would be keen to hear them.

Andrew Cockburn
President
International Society for Behavioral Ecology

ISBE 2020 LOGO



The ISBE congress logo is a key design element used to promote the conference. The logo itself plays a central role in identification and must be versatile enough to extend to all forms of communications and formats, from websites to the conference t-shirt.

In March this year, the ISBE2020 organizing committee, working closely with our professional conference organizer, Waldron Smith Management, engaged a graphic designer to develop a logo for the 2020 congress.

We gave the designer a very broad brief for the concept design, citing native wildlife and Melbourne's vibrant arts scene and culture as inspiration. After being presented with several design concepts for consideration, and working through an iterative process to refine the design elements, the local

organizing committee is pleased to launch the ISBE2020 logo.

The chosen design features a yellow-tailed black cockatoo (*Calyptorhynchus funereus*) set against a background of Eucalyptus leaves and blossoms. The yellow-tailed black cockatoo is native to the forests of south-eastern Australia but can also be found in urban environments, including here in Melbourne, Victoria. The species is characterised by its striking (mostly) black body plumage, yellow cheek patch, and yellow panels on its tail feathers. The logo is uniquely Australian in showcasing the iconic flora and fauna of the region.

Bob Wong
Chair, ISBE2020 Organizing Committee

bob.wong@monash.edu

ASAB Easter Meeting 2019

April 3 - 5, 2019. The ASAB Easter Meeting in 2019 will be held at the University of York. Updates via <https://twitter.com/ASABEaster2019>

European Human Behaviour and Evolution

April 24-26, 2019 in Toulouse, France. "Hybridization: morphological, genetic, behavioural mechanisms and consequences." Pre-conference satellite meeting on April 23. <http://ehbea.com/>

Human Behavior and Evolution Society meeting

May 29-June 1, 2019, in Boston, USA.
www.hbes.com/conference/

American Ornithology Meeting

June 24-28 Anchorage Alaska, USA
<https://amornithmeeting.org/>

10th Australasian Ornithological Conference

July 3-5, 2019 in Darwin, Australia
www.aocdarwin.com

ASSAB meeting 2019

Australasian Society for the Study of Animal Behaviour
July 8-10, 2019 in Waiheke, New Zealand.
www.assab.org

47th meeting of the Evolution 2019

June 21-25, 2019, in Providence, RI, USA.
<http://www.evolutionmeetings.org>

Behaviour 2019

July 23-28, 2019 at the University of Illinois Chicago, IL, USA. A joint meeting of the International Council of Ethologists Conference (ICE) and the Annual Conference of the Animal Behavior Society (ABS)
<http://www.animalbehaviorsociety.org/2019/>

ISAE 53rd International Congress

August 5-9, 2019. International Society for Applied Ethology meeting in Bergen, Norway.
http://www.applied-ethology.org/isae_meetings.html

ESEB 2019

August 19 - 24, 2019. The next European Society for Evolutionary Biology meeting will be held in Turku, Finland. <http://eseb2019.fi>

International Society for Human Ethology

August 21-24, 2019. The next ISHE Summer Institute will be held in Zadar, Croatia
<http://ishe.org/croatia-2019/>

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12th European Ornithologists' Union Congress

August 26-30, 2019 in Cluj-Napoca Romania
<https://conference.eounion.org/2019/welcome/>

International meeting of Poeciliid Biologists

September 24-26, 2019 in Mexico City.
More details on page 9
<https://biologia-ue.fcien.unam.mx/poeciliidconference>

ASAB Summer Conference 2019

August 26-28, 2019 In the Max Planck Institute for Ornithology and the University of Konstanz, Germany. "New Frontiers in the Study of Animal Behaviour"
www.uni-konstanz.de/asab-summer-2019/

9th World Congress of Herpetology

January 5 - 10, 2020 in Dunedin New Zealand
www.worldcongressofherpetology.org/

15th Annual Meeting of the Ethological Society

February 19-20, 2020, Tuebingen, Germany.
<http://www.etho2020.de/>

ISBE 2020



September 27 - Oct 2, 2020 in Melbourne Australia.
More information on page 3.
Follow @ISBE2020 on Twitter for updates.
The website is launching soon.

International Congress of Neuroethology

ICN2020 will be held in Lisbon, Portugal
www.neuroethology.org/ebusisne/MEETINGS.aspx

International Union for Social Insects

XIX IUSSI International Congress 2022
San Diego, California, USA
www.iussi.org/meetings.html

International Society for Human Ethology

The next ISHE Biannual Congress will be held in Liverpool, UK in 2020.
<http://ishe.org/conferences-and-summer-institutes/>

Name

April Robin Martinig

Education

PhD Candidate in Ecology, University of Alberta; MSc in Biology (2016), Concordia University; BSc in Ecology (2014) and BSc in Primatology (2014), University of Calgary

Current Address

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Research Interests

I am investigating how fluctuating selection maintains consistent individual behavioural differences across life-history strategies for juveniles during dispersal in a population of North American red squirrels in the Yukon, Canada. I am broadly interested in animal behavioural ecology and studying how consistent variation in individual behaviour, particularly during dispersal, contributes to performance differences across an individual's lifetime.

Selected papers:

Martinig, A. R., and K. Bélanger-Smith. 2016. Factors influencing the discovery and success of wildlife passages for smaller fauna. *Journal of Applied Ecology* 53:825–836.

Martinig, A. R. 2017. Habitat suitability modelling for mink passage activity: a cautionary tale. *Journal of Wildlife Management* 81:1439–1448. (cover article)

Martinig, A. R., and A. A. D. McLaren. 2019. Vegetated highway medians as foraging habitat for small mammals. *Wildlife Society Bulletin* (accepted)



A North American red squirrel. Photo by April Robin Martinig

TRAVEL AWARD FEEDBACK

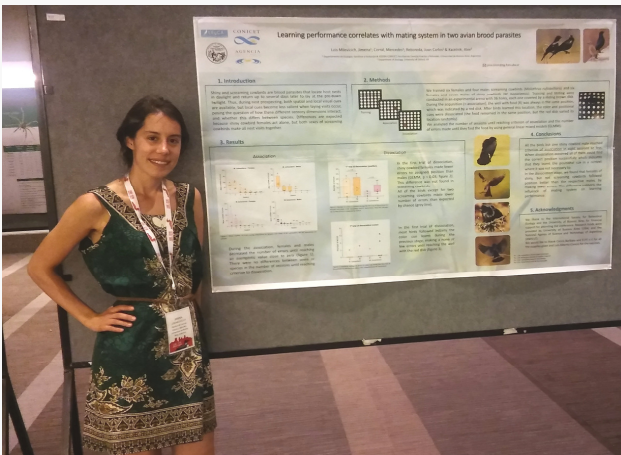
A large part of ISBE's budget is allocated to the Travel Awards, which help behavioural ecologists with limited funds to visit the ISBE Conferences.

There are two types of awards: Travel Awards for junior scientists (including recent Ph.D.s in temporary teaching positions); and Developing Nations Awards, aimed at offsetting meeting attendance costs for students, post-docs or faculty whose home institutions are located in developing nations.

For the 2018 Conference in Minneapolis, the ISBE gave Travel Awards to 148 individuals from 25 different countries. Here follows a collection of feedback from some of these awardees.

The ISBE Travel Award made it possible for me to attend to the conference. It was a huge help, otherwise it would have been impossible to go to the United States since I am from Argentina. It was my first ISBE conference and I really enjoyed it! I went to a lot of interesting talks, I met a lot of nice people, and also I received good comments on my work which I presented in poster format. The organization was excellent! I really like the Faculty-member-lunch activity and the informal "Cognition meeting" that a couple of girls organized during the conference.

Jimena Lois Milevicich, Argentina



I am a PhD student at the Indian Institute of Science. I work on spatial organisation of paper wasps on their nests and its relation to their behavioural roles and division of labour. The ISBE conference was the best organised of the four prior conferences I have attended. It was an incredible opportunity that I couldn't have seized if it was not for the hassle-free and generous ISBE travel funding. The conference proved very rewarding because my work was well-received and I made connections from the world over that I could never otherwise have. This gave me the much needed confidence to work towards finishing my PhD and publishing soon. I also got a Post-doc offer that I plan to join after my PhD. Thank you very much for granting me the travel award in the absence of which I would've never afforded to make the trip to the US and lost out on all these connections.

Nitika Sharma, India

I am a researcher at Puebla University in Mexico and I attended this year's ISBE meeting thanks to the travel grant for developing countries. I presented results from my new Evolutionary Ecology lab showing that parasitism affects sperm quality but not quantity in guppies. Attendance to this conference is a great opportunity to be updated on the new tendencies in the field, but also to hear comments about our own results before submitting for publication and to establish new collaborations. For example, this ISBE I was grateful to meet Dr. Jessica Stephenson. We heard each other's talk and went out for lunch to discuss common ground for future collaboration involving postgraduate students.

I am sure we will take this opportunity to carry out new experiments to test how parasitism affects the behaviour of guppies.

Palestina Guevara Fiore, Mexico



TRAVEL AWARD FEEDBACK

I am a PhD student at Center for Ecological Sciences, Indian Institute of Science, Bangalore. I really enjoyed presenting my work and meeting other fellow researchers at ISBE 2018.

I study the foraging ecology of a bat species found in India. During the conference, I prioritized on getting feedback on my work, and meeting other bat researchers. Dr. Krista Patriquin, Majorie May Dixon, Dr. Gerald Carter and Dr. Patricia Jones were some of bat researchers I got to chat with. They were very warm, encouraging and gave me valuable feedback. Most importantly, they were really interested to know more about my work. I also appreciate the feedback Professor David W. Stephens and Simon Laughlin gave after my talk.

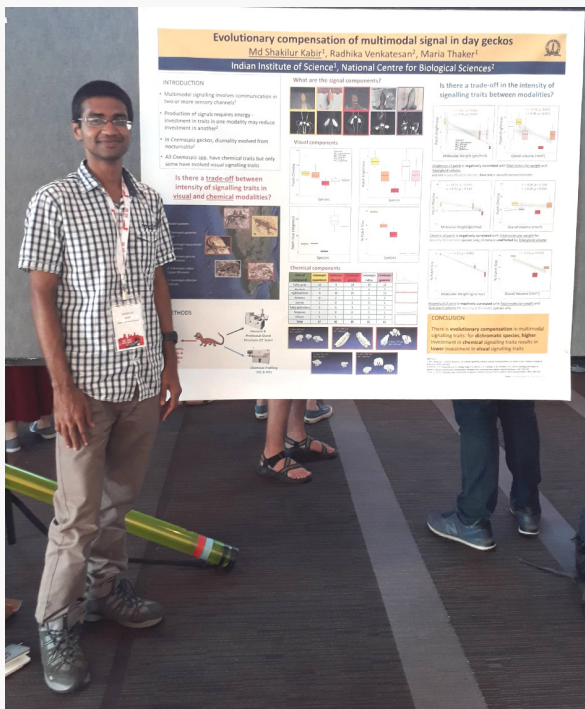
I can't thank ISBE enough for travel grant, that ensured I was able to make it to the conference. Thanks to the grant, I got an opportunity to meet and discuss with so many wonderful people. The talks and poster presentations at the conferences also gave me an exposure into the kind of research others were doing in different parts of the world.

Unrelated to the science, I will never forget Bob Dylan's voice at the end of the talk, nor the mural of the singer I got to see post the conference in Minneapolis.

Harish Prakash, India

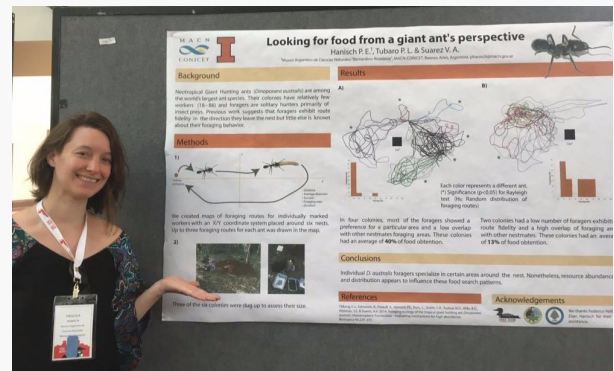
I was aided by the ISBE grant and it was only because of the grant awarded that I could go and present my research work in the form of a poster in such a big conference. As a doctoral student, it is important to network with eminent and senior scientists for future prospects and this conference definitely allowed me to do that. I learnt a great deal in the field of animal behavior from the all the talks, posters, and plenaries. More importantly, since this was my first conference in my career, I learnt how to better my own research. I am really grateful to the ISBE travel grant for making it possible for me to attend the conference of 2018.

Shakilur Kabir, India



In the current economic situation of Argentina, with a severe funding cut for science, it would have been impossible for me to attend ISBE conference without the travel grant. At the conference, I received a lot of comments about my research, that certainly will help me to improve it. I hope that my feedback about other people's work has been helpful as well! I'm really grateful for the opportunity I was given!

Priscila Hanisch, Argentina



I would like to extend my deepest gratitude to the ISBE Travel Award Committee for providing me the funding support to attend the conference in Minneapolis. I not only presented part of my research in parental care and sexual selection in glassfrogs in the meeting, but I also had the opportunity to exchange experiences and interact with other research groups, which certainly helped me with new research ideas and partnerships.

I hope to participate in the next conference and keep in touch with all!

Anyelet Valencia Aguilar, Brasil

My research interests lie in the areas of animal behavior and evolutionary Biology. I am particularly interested in understanding the evolution of mating patterns in social insects. I am currently studying the mating biology of *Ropalidia marginata*. Using behavioral experiments, I have studied the mating patterns and effect of certain parameters like body size, age, seasons, and ovarian status of females in detail in the context of mating success.

Although I am studying the mating biology in social wasps, I am also immensely interested in other fields of behavioural ecology. I am very happy that this conference was a union of scientific minds from several disciplines of behavioral ecology. Any researcher from the field of behavioural ecology, including myself, for sure was benefited attending this meeting and interacting with other distinguished scientists around the globe. I was greatly benefitted from the discussions I had with several scientists in various fields of behavioural ecology (including discussions on methodology and data analysis using appropriate statistics). I was extremely delighted to meet various personalities like Gene Robinson, David Queller, Regina Macedo, Tim Clutton-Brock and Joan Strassmann to name a few. I had the opportunity to meet them personally and discuss with them about my work and also got to know about their work. This meeting provided me with a very good opportunity to interact with such intellectuals and to shape my future research work. I take this opportunity to thank the ISBE travel grant committee, for providing me with travel assistance to attend the conference which would not have been possible otherwise.

M. C. Shilpa, India



This year's ISBE congress has been one of the best I have attended so far. It has matched my expectations on the science I expect to hear with a great mixture of sessions (sometimes it's hard to choose between fascinating concurrent sessions) and inspiring plenaries. It has also been located in a beautiful, friendly and welcoming city with built landscape alongside sunny parks (Minnehaha Park within a short train ride and its waterfalls was a highlight) and the Mississippi river. The greatest thing however, was not only the provision of free childcare (which is a rarity amongst all the conferences I attend) but also the availability of travel grants, specifically to early career researchers.

I am an early career researcher, part postdoc and part lecturer, with a young family, so any conference trip always brings up the challenge of arranging childcare for the children – both my husband and I are in the same research field so that we either choose to take turns to attend the various sessions, or one has to stay at home. We also live abroad, so that our extended families are not able to help. This is a familiar situation for many academics, especially in the early stage of their career. You can imagine my elation and relief when I learnt that my submitted poster had been accepted and that my application for a travel grant had been successful!

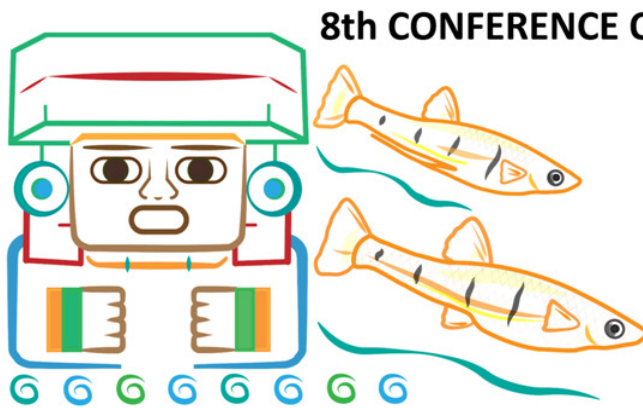
As a family, we always share our news so that when the children learnt that I was going to present a poster, it seemed a normal thing to let them prepare a poster too. Two of my three children decided this was a great idea – the youngest was not so keen! As I prepared my poster, so did they, the eldest on the computer and the younger one on a sketchpad. We carried our 'family posters' in my tube and almost forgot them at the airport...but managed to board them on the plane and then hang them up after the long journey across the Atlantic. The children posters were a great success and attracted way more visitors than mine! The children loved being at the poster session and were very keen to explain their work. I think we have some budding scientists in our family.

I am very grateful to the ISBE organising committee for awarding me a travel grant that allowed my family to come along and enjoy a fantastic experience.

Graziella Iossa, UK



UPCOMING CONFERENCE



8th CONFERENCE OF POECILIID BIOLOGISTS

September 24-26, 2019

UNIVERSIDAD NACIONAL
AUTÓNOMA DE MÉXICO

Mexico City

This is the second announcement of the 8th conference of Poeciliid Biologist, which will take place between the 24th and the 26th of September 2019 at the main campus of the Universidad Nacional Autónoma de México in Mexico City. There will be five top invited speakers and starting on the 21st of January we will receive contributions for talks and posters. Registration will begin at the end of May. We advise you to keep an eye on the dates and to register on time to make sure you get a place.

Please visit our website <https://biologia-ue.fciencias.unam.mx/poeciliidconference> where you can find details on dates, suggested accommodation, fees, etc. Some parts of the site are still under

construction, but we wanted to make sure that you get enough information now to mark the dates in your calendar.

Please feel free to share this message with your colleague Poeciliid biologists who may inadvertently have been left out of the list.

On behalf of Los Poecilistas,
ConstantINO

Constantino Macías García
Instituto de Ecología, UNAM
poeciliids.mex@ieciologia.unam.mx



UPCOMING MEETING


The International Society of Wildlife Endocrinology (ISWE) is currently accepting abstract submissions for the 7th ISWE Meeting. ISWE welcomes abstracts reporting new basic, applied, or methodological-related findings concerning wildlife endocrinology, with an emphasis on non-invasive and minimally invasive sampling technologies used to address questions regarding adrenal function, reproductive physiology, animal health, ecology and evolution. Topics include: methodologies, reproduction, stress, animal health and welfare, wildlife conservation, and miscellaneous.

Travel scholarships are available for graduate and postdoctoral students. For more information, visit the ISWE website at www.iswe-endo.org/conference/

Save the Date!

7th Meeting
of the
International Society of Wildlife Endocrinology (ISWE)
October 13th - 16th, 2019
Hosted by:
Mammal Research Institute, University of Pretoria
Held at:
Kruger National Park



INTERNATIONAL
SOCIETY OF WILDLIFE
ENDOCRINOLOGY

GRANT OPPORTUNITY

The Zoological Lighting Institute (ZLI) now offers annual grant opportunities for early-career researchers focused on studying the importance of light conditions on organisms. ZLI offers six \$500 grants across each of its three core research areas, including a special award to encourage inclusion and diversity within the sciences. These grants and others like them are necessary, as natural light is arguably the most important environmental factor for animals and ecosystems. Please apply today, or consider financially supporting ZLI in its mission to support science through the arts for animal welfare and wildlife conservation. Applications are accepted by providing information following the guidelines*. The application deadline for this year's cycle is 1 May 2019.

Brett Seymoure, PhD
National Parks Night Skies Postdoctoral Fellow
Colorado State University

*guidelines: <https://zoolighting.org/wp-content/uploads/2019/02/Zoological-Lighting-Institute-GIAR-Feb-18-2019-1.pdf>



UPCOMING SYMPOSIUM

We'd like to announce a call for speakers for ESEB 2019 symposium on plant-pollinator behavior and evolution.

Mario Vallejo-Marin (<http://www.plant-evolution.org>) and I are organizing a symposium on Eco-Evolutionary Feedback Between Pollinator Behaviour and Floral Evolution for the 2019 meeting of the European Society for Evolutionary Biology (ESEB) in Turku, Finland (<https://eseb2019.fi> August 19-24, 2019). The symposium will have up to 10 talks, as well as other contributions that are presented as posters.

Topics for the symposium include (but are not limited to):

- the evolution of pollinator foraging behaviour
- how flower traits affect pollinator behaviour or evolution
- how flexibility or constraints of behaviour affect plant reproduction or evolution
- how plants manipulate pollinator behavior.

For more information, please visit <http://www.plant-evolution.org/wp/opportunities/eseb2019/>



Avery Russell, PhD
University of Pittsburgh, USA

Dog behaviour, evolution and cognition (2nd edition)

Ádám Miklósi

Oxford University Press. 2014. 400 Pp.

ISBN: 9780199646661

Summary

This book combines knowledge on dog behavior, cognition, evolution and even covers some societal aspects. As such, it should find an honorable place in the bookshelves of diverse reader audiences, from researchers interested in specific questions in animal cognition to deeply interested pet owners.

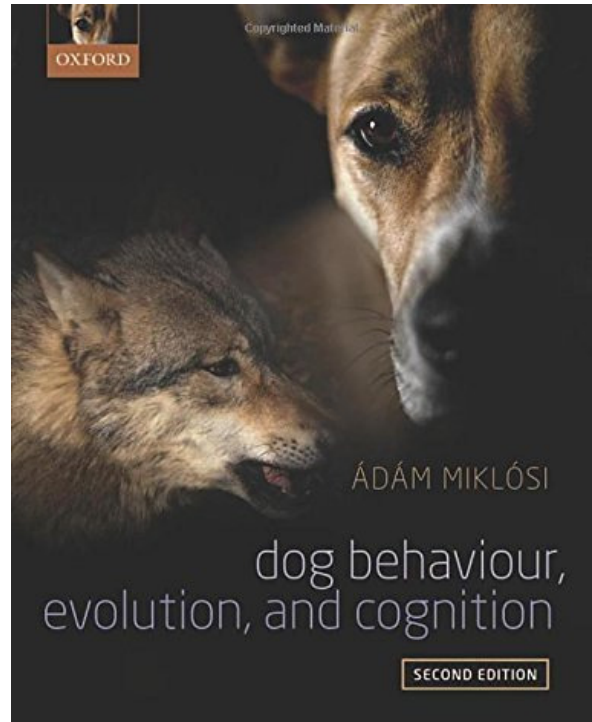
Review

Who would argue that dogs aren't amazing? Perhaps, 'cat people'. However, even potential readers who are not enchanted by dogs specifically would likely see this second edition of Dr. Miklósi's book worthy of their time and of a place in their personal library.

Dogs have a special place in human societies around the world. Unsurprisingly, scientific curiosity for the behavior of dogs and their relatives has a long tradition. There are still many areas where additional knowledge could change our current understanding about behaviour in dogs. Likewise, advancing genomic techniques, non-invasive neurobiological imaging methods and automatic behavioural monitoring, are expanding classical research lines and opening new ones. The technological advancements are sometimes so rapid that scientific evidence is lagging far behind. This lag brings a multitude of problems and speaks of the urgent need for attention (Moses et al. 2018). Therefore, the book is very timely and allows researchers to 'up their game' in the field of canine behavior and evolution, and take it further from there.

In general, there is something very comforting about books that are written by single authors, as is the case of Dr. Miklósi's book. You quickly get habituated to the author's style and feel that you have a relationship with the book. Then the next chapter will not scare you, but rather take you deeper into canine world. The book is supplemented not only with plentiful references to scientific studies, but also lightened up by examples from everyday life and 'fun facts'. Such literary sparkles balance out the specialist lingo and allow the non-professionals to also read this book with pleasure.

I found the book to be very well organized at the chapter level. Each of the sixteen chapters provides comprehensive information to the theme, which is further supplemented by information in boxes and figures. Boxed information usually present in-depth studies or delve into more popular topics. For example, in one of the boxes you will find answer to how much meat a wolf needs daily. Boxes, figures as well as links to other chapters are carefully referenced so you are never lost. At the end of each



chapter the author also provides a synthesis, conclusions with three outstanding questions and several examples of the most relevant further readings. Such structure should be implemented more often in books and I found it to be a very successful feature. Chapter order is up for debate, but should not be a problem for readers who do not intend to go through the book systematically. As already mentioned, linked sections are well referenced so you may find yourself jumping back and forth through the book to find the information that intrigues you. Perhaps the biggest complaint I had was about the quality of some images. Not all, but some photos and reprinted images from other publications were blurry or lacked contrast. That, however, does not decrease the value of the book in any way.

The book is opened by the overview of early scientific studies on dog behavior and cognition. The author stresses that our knowledge about research on dogs during this earlier period (end of nineteenth to first half of twentieth century) is limited by the fact that many different languages were used for scientific communication at the time.

The second chapter aims to familiarize the reader with different concepts used in dog behavioural research. The author starts by asking Tinbergen's questions, then, briefly mention evolutionary paradigms and gives most attention to concepts related to dog cognition, specifically mental models.

In the following chapter, an overview of different methodologies that were used to measure behaviour is provided. Also, you find examples for the use of more recent technological advancements (e.g. automated measurements of movement). This chapter would be a useful read for students and teachers when discussing possible methodological considerations pertaining to behavioural studies.

Chapter four describes the role of the dog species in human societies. This provides a more general information that should be of value from an applied perspective and for non-academic readership. For instance, the author discusses the phenomenon of dog shelters. It seems that we still know too little about how to prevent dogs from ending up in shelters, their wellbeing once they enter shelters and about the best rehoming strategies.

Chapters five to seven form a unit on dog evolution and would be especially interesting for evolutionary biologists. In chapter five, dr. Miklósi briefly describes current taxonomy of the *Canis* genus and mostly focuses on distribution, social organization and behavior of *Canis lupus*. Apparently analogous knowledge about other species in the *Canis* genus is mostly lacking and would be a fruitful area for research. In the next chapter author writes about dog domestication. He reviews archaeological and genetic studies to pinpoint possible timing of the domestication event(s) as well as the most likely geographical location where this process could have taken place. Chapter seven continues with the evolution theme and describes phenotypic changes that emerged in the dog and changes that became specific only to certain breeds. Dogs have undergone complex selection regimes. Thus it is discussed how selection for size, dietary changes and behavioural aspects could have shaped the earlier variants to form the species as we know it now.

Chapter eight is a very brief overview of how social organization in feral dogs and dingoes compare to each other. Only very few studies have been done on these groups so, yet again, there is no comprehensive understanding. By elucidating behavioural patterns in other dog forms we may gain better understanding of the domestication process and perhaps find more successful strategies for controlling zoonoses.

While we tend to believe that dogs have superior senses, after reading chapter nine I was amazed by how little we in fact know. This part gives introduction to dog senses going through vision, hearing and olfaction. Most studies so far have focused on dog olfaction and have yielded valuable insights into how dogs recognize smells and what effect smells have on their wellbeing (dog aromatherapies). However, we have only scraped the surface of vision and especially hearing. We also lack understanding of the role of sensory information integration for dog behavior. With the emergence of non-invasive imaging technologies, the sensory world of dogs demands more attention.

In the tenth chapter dr. Miklósi discusses how dogs and wolves solve tasks when navigating, hunting, manipulating objects and even when 'counting'. So far, studies seem to at least agree on that canines can in fact judge quantity.

Chapter eleven mainly discusses alternative views for human-dog social relationships. It challenges the strict hierarchical social organization and rather advocates for the use of a social network paradigm. As both attachment behaviour and various agonistic

relationships are discussed in detail, this would be a valuable referencing source when addressing or researching problematic behaviours in dogs. The twelfth chapter should also appeal to a diverse readership as it deals with different modalities of human-dog communication such as play, cooperation and training. The author continues to discuss dog learning in chapter thirteen by reviewing the value of social information and social learning.

Chapters fourteen and fifteen provide reader with factual information on how behaviour changes during ontogeny and the existence of personalities. For instance, the sensitivity period for dog socialization is discussed as well as the lack of predictable value for the very common practice of early-life puppy aptitude testing.

The last chapter describes the importance of the genetic component for behavioural variation. After briefly introducing inheritance and heritability concepts author provides examples for the associations between certain genes and behavioural phenotypes in dogs. A good portion of this chapter is used to discuss the very famous long-term fox domestication experiment.

While dogs are an easily reachable test system for various questions in behavioural ecology, there are several recurring gaps that are brought up by dr. Miklósi. That is the lack of comparative data for other species in *Canis* genus and underuse of the existing genetic and phenotypic diversity in dogs. Planning research programmes along these lines should be fruitful and I await to see what the future will bring.

Overall, "Dog behavior, evolution and cognition" by Miklósi would be a useful source of information to any pet dog owner, professional trainer, popular pet book writer or decision maker. There are many controversies about the best training and socialization methods, actual or attributed differences between dog breeds (for e.g., aggressiveness) that pertain to everyday lives and even decision making (e.g. shelter organization, outlawed breeds). Only by getting rid of stereotypes and acknowledging the factual information we have, can we expect improvements. Dr. Miklósi's book could also be a useful addition to literature used by teachers in schools and universities. It would be intuitive if some biological phenomenon is easier understood when it is based on a familiar species. Researchers working in behavior ecology, primatology, avian cognition and evolution would very likely find this book worth their time. Many of the researchers would also fall in one of the above categories (pet owners, teachers, consultants for decision making) and therefore would get even more out of reading the 2nd edition of dr. Miklósi's book.

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Reference

Moses et al. (2018) Pet genomics medicine runs wild. Nature 559, 470-472 (comment on the need for regulations for pet genomics)

Avoiding attack: the evolutionary ecology of crypsis, aposematism, and mimicry. (2nd edition)

Ruxton, G.D., Allen, W.L., Sherratt, T.N. & Speed, M.P.

Oxford University Press. 2018. 304 Pp.
ISBN: 978-0199688685

This is the second edition of *Avoiding Attack* now thoroughly revised and updated with the help of Will Allen. Using the predatory sequence as a road map through classes of anti-predator defenses, 14 chapters systematically address the ways in which prey avoid detection, thwart recognition, dodge attack and prevent consumption. In the sense of being a comprehensive and thoughtful synthesis of a growing sub-field in behavioural/evolutionary ecology, it is an absolute tour de force.

An introductory chapter begins by defining primary and secondary defenses and raises many unanswered issues about antipredator strategies such as why a prey animal might have multiple defenses? Perhaps this is because it has several predators, or several at one life-history stage, or during different stages of the predatory sequence? This raises further unresolved questions as to whether early defenses are more generalized whereas later ones are more specialized, tailored to specific predators; and whether early defenses are more cost effective because they are used more often? As yet we have no clear answers.

Chapter 1 on background matching revisits Merilaita's influential work on whether to employ a specialized resemblance to the background or a more general resemblance to several backgrounds. Colour polymorphisms are discussed in relation to frequency-dependent selection and predator search images and search rates. Less attention is paid to those individuals able to change colour to match different backgrounds.

Chapter 2 scrutinizes another way in which animals remain protected, not through avoiding detection, but by avoiding recognition using disruptive coloration. Here the outline of the animal is obscured by distinctive markings. A helpful figure in this chapter shows five sub-principles underlying disruptive coloration with an accompanying table to highlight these and alternative ideas that should be rejected. The authors suggest that disruptive markings might be quickly learnt by predators and then later disregarded - such questioning showcases a persistent theme throughout the book in which the authors raise novel questions thereby suggesting directions for future research.

Countershading, a third major mechanism to avoid either detection or recognition, is the topic of



by darker dorsal pigment above but a lighter ventrum below; the pale belly may counteract the shadow cast by the animal's own body (called self-shadow concealment). This is not a chapter for the faint-hearted, however, since countershading could operate through self-shadow concealment, or background matching when the prey animal is viewed from the side, by reduction in 3-D form, by obliterative shading of depth cues, background matching when viewed from above and below, or even through disruptive coloration splitting upper and lower sections. These are non-exclusive possibilities but the optimal degree of dorsal pigmentary darkening will differ according to the mechanisms involved. This is a fast growing area of animal coloration research: new experiments and comparative data have changed the countershading story radically from the first edition of the book (Ruxton et al. 2004).

Chapter 4 is on transparency - almost always found in aquatic organisms. This is because refractive indices of transparent tissues must conform to that of the surrounding medium and are much closer to the refractive indices of water than of air. Transparency is promoted by large body size and thin flat sheets of tissue which hamper swift movement. An alternative form of crypsis in water is silvering that makes it difficult to distinguish an organism from surrounding water. The trade-off between these two mechanisms for avoiding detection varies according to water depth. Neither mechanism is perfect, however, and both are additionally challenged by predators producing their own light to detect prey (and to signal to conspecifics). At 500m depth, 70% of fish and 65% of decapod crustaceans are bioluminescent!

Next is a section on secondary defenses that sets the scene for subsequent chapters on aposematism and mimicry. Topics here concern the costs of defenses in plants as well as animals, the difficulty in showing how defenses are kept honest, and the evolutionary consequences of secondary defenses (such as diversification and extinction in clades), and lack of predator-prey co-evolution in overcoming defenses. We do not yet know the answers to many of these problems making this is one of the most speculative chapters in the book.

Chapter 6 is on aposematism: its definition, characteristics (conspicuousness) that are common to unrelated taxa, distinctiveness from crypsis but ability to be combined with it, and its rarity in animals. The initial evolution of aposematism (the transition from being difficult to detect to being easily seen) has taxed biologists and there are still seven potential explanations. These are initial absence of visual predators, predator aversion to novelty, coevolution of conspicuous coloration and toxicity, aggregation with benefits through kin selection, gradual evolution of warning coloration, initial conspicuousness linked to morphological not chemical defenses, and ecological circumstances facilitating conspicuous evolution. Seasonal and spatial variation in selective pressures favouring aposematism and its relationship with behaviour are then discussed before tackling the difficult conundrum of whether and how warning signals are kept honest. Across different taxa, evidence for honest signaling is varied and explanations are not straight forward.

After explaining Müller's theory of mimicry, Chapter 7 takes readers through neotropical butterflies, wasps, millipedes, catfish, bumblebees and poison dart frog examples. Assumptions underlying Müllerian mimicry are examined and questions about using multiple warning signals and the way in which predators sample prey are explored. Classic Müllerian themes: advergence versus convergence, mimicry rings, and quasi-Batesian mimicry are all here in the form of edifying up-to-date reviews.

Chapter 8 on advertising elusiveness deals with stotting in gazelle, the upright stance in hares, vervet monkey alarm calls, distress calls in pursued birds, tail-flipping in waterbirds, alarm calls in willow tits, and predator inspection by fish. These are all examples of either perception advertisement or pursuit deterrent (what I have called quality advertisement [Caro 2005]) signals. Individuals might even honestly signal their level of personal vigilance. I thought I knew this stuff but as usual the book showcased several additional studies that I should have read.

Chapter 9 is a long chapter that tackles Batesian mimicry and masquerade. First, evidence is presented that both antipredator strategies dupe predators. Then the chapter outlines and tests assumptions underlying Batesian mimicry: the model must be present (yes and no), the relative abundance of mimic and model influences predation rates, model distastefulness affects degrees of predation on mimics and models. Then there are

sections on the influence of alternative prey on the efficacy of Batesian mimicry, how mimetic polymorphisms arise, and sex-linked polymorphic mimicry. There is a segment on the genetics of polymorphic mimicry, another topic that I should know but did not. After that, we find an exposition of imperfect mimicry with a large table on possible hypotheses. The chapter ends with a piece on behavioural mimicry. A lot to (errrr) digest here.

Startling predators is the next (uncharacteristically speculative) chapter. It situates the eyespot – deimatism debate and explains how this form of predator deterrence differs from aposematism. We then plunge into fascinating examples involving sound, clicking, inking and stridulation – nasty stuff when close up and personal.

Chapter 11 on deflecting attack returns to lepidopteran eyespots although this time they are smaller than those that startle attackers. Again a wide taxonomic spread: fish eyespots, caterpillar eyespots, lizard tails, tadpole tails, weasel tails, orb-spider decorations, and distractive behaviour in shorebirds although we still have little satisfactory explanation for their distribution except that deflective marks will surely depend on mode of predation.

Chapter 12 is on dazzle camouflage. Laboratory findings are conflicting and depend on speed, size, trajectory and number of different patterned objects moving across computer screens manned by innumerable undergraduates with computer mice at the ready. Evidence for dazzle affecting predators' perception of prey speed and trajectory in nature is thin.

Chapter 13 is on thanatosis or death feigning. Lots of possible explanations again: feigning death makes swallowing by predators difficult, it exploits predator aversion to dead prey, it is useful when several prey are available for dispatching in a short time frame, or it is simply seen in prey dropping off leaves for safety. Many bizzare examples are given: death feigning during copulation in male *Pisaura mirabilis* came as a wake-up call.

Avoiding Attack has around 1200 references in the bibliography; it is a very comprehensive volume. It would have been improved by colour photos throughout the text not crammed into the spine. And, sure, the authors missed a few items: inspection behaviour in gazelles, autotomy in rodents, and flash coloration during flight but these are trivial quibbles. Nonetheless, the book is not an easy read. In most chapters there is a vast amount of information viewed from many angles: taxonomic distribution of attack avoidance ploys, underlying mechanisms and the evidence for each, ecological correlates, evolution, coevolution, and future challenges. This depth makes the book more of a resource for researchers steeped in the field, or teachers wanting to craft their lectures, than for graduate discussion seminars.

The variety of antipredator defenses seen in nature is awesome (in the old sense of the word when it

was applied sparingly) but predicting (let alone explaining) in which taxa they will be found is still an outstanding challenge. Why are so few species aposematic? Why is startle behaviour or mimicry found in this set of species but not in those? Indeed why aren't all species cryptic? Answering these macro-evolutionary questions is an important task for the future but perhaps explanations for these will be more forthcoming in the third edition of *Avoiding Attack*?

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BOOK REVIEW

Evolution Driven by Organismal Behavior: A Unifying View of Life, Function, Form, Mismatches, and Trends

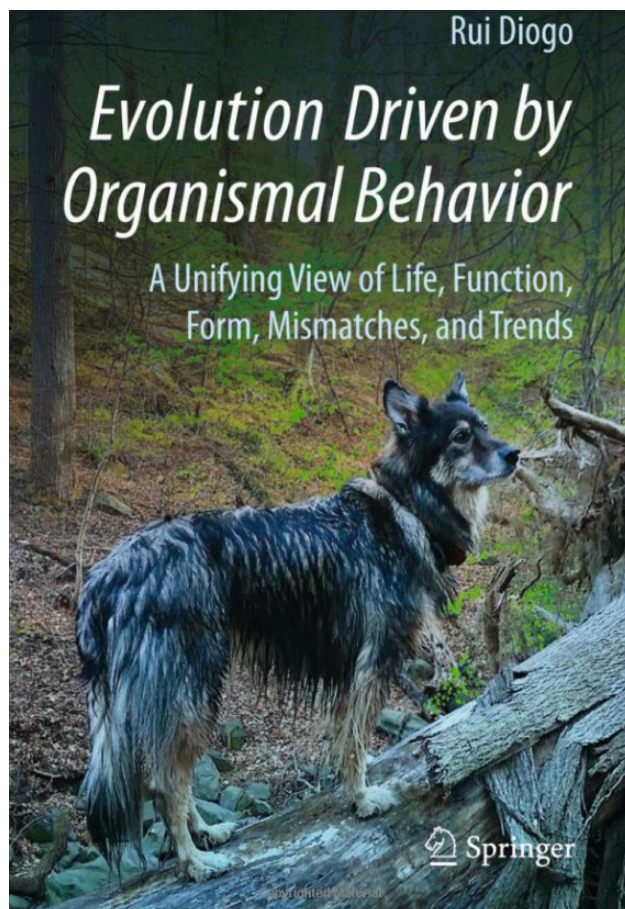
Rui Diogo

Springer International Publishing, 2017. 252 pp.
ISBN 978-3-319-47580-6 (hardcover), ISBN 978-3-319-47581-3 (eBook)

This book sets out to present a new unified framework (termed Organic Nonoptimal Constrained Evolution (ONCE)) to studying evolution that integrates and makes new connections across different classic and modern theories. It is an ambitious goal to say the least, moreover because the author seeks to do so in a way that is accessible to a wide audience. While the book does not completely succeed on all fronts, it draws on an impressive diversity of references and generates along the way some interesting points for reflection.

The book is divided into ten chapters, and rather than attempting to summarize each, I list the titles to give a sense of the far-reaching and often overwhelming scope of topics the book attempts to integrate:

1. Introduction to Organic Nonoptimal Constrained Evolution (ONCE) and Notes on Terminology
2. Baldwin's Organic Selection and the Increasing Awareness of the Evolutionary Importance of Behavioral Shifts
3. Behavioral Choices and Shifts, Niche Construction, Natural Selection, Extinctions, and Asymmetry
4. Evolutionary Trends, Sexual Selection, Gene Loss, Mass Extinctions, "Progress", and Behavioral Versus Ecological Inheritance and Novelties Versus Stability
5. Behavioral Leads in Evolution: Exaptations, Human Evolution, Lamarck, and the Cuvier-Geoffroy Debate, and Form Versus Function
6. Eco-morphological Mismatches, Human "Exceptionalism", Hybridization Trade-Offs, and Non-optimality



7. Internal Selection, Constraints, Contingency, Homology, Reversions, Atavisms, von Baer, Haeckel, and Alberch
8. ONCE Links Internal Factors, Epigenetics, Matsuda, Waddington, Goldschmidt, and Macroevolution
9. ONCE Ideas Are Put Together: Evolutionary Behavioral Ecology, Adaptationism, Systems Biology, and Interdisciplinary
10. General Remarks

Some major points stressed by ONCE are that organisms, through both their behavioral choices and internal constraints, play a much more active role in evolutionary processes than stressed by some lines of evolutionary thinking (which focus on the role of natural selection by the external environment leading to evolutionary change), that behavioral choices can precede and dictate morphological change, that eco-morphological mismatches are more frequent than acknowledged, and that the idea

of evolution leading to organisms being “optimally” adapted to their environment is still too common. ONCE draws on previous work, from the Baldwin effect (Baldwin 1896) to the extended evolutionary synthesis (Laland et al. 2015) to developmental plasticity (West-Eberhard 2003), but seeks to distinguish itself by emphasizing aspects the author considers neglected or inconsistent with other theories in those other frameworks.

While the goals set out in the book’s preface and back cover are intriguing, they were generally poorly organized, and most chapters contained a barrage of ideas and examples that were not clearly structured into themes or evidence for particular points. Even Chapter 1, which nominally aims to introduce ONCE and clarify terminology, tackles lengthy terminological and philosophical discussions across multiple bodies of evolutionary theory without introducing basics. The only shorter overviews were in the preface and the last chapter. Hence, clear themes and hierarchies of ideas did not necessarily clearly emerge to guide the reader, and I had difficulty keeping track of the key concepts among the plethora of examples and ideas presented. The book also sought to make a number of specific predictions that should differentiate it from other frameworks (p. 213-214), but these seemed difficult to quantify and did not necessarily highlight ONCE as a distinct framework. It is also worth noting here that the ONCE framework focuses on the evolution of morphological traits and, although not explicitly stated, does not appear to treat behaviors themselves as evolvable traits (more on this below). Despite being intended for a wide audience, the book felt geared towards readers deeply versed in evolutionary theory, specifically pertaining to morphology.

Having said all that, the book contains a wealth of intriguing references to work across evolutionary biology and other disciplines, providing avenues for discussion outside of any single field. It made me want to revisit classic work in evolution, read more about current trends, and reconsider the links among different disciplines, such as behavioral ecology, morphology, and evo-devo. I also appreciated the attempts to provide historical context and draw links between theories developed during eras, including, for example, various discussions of Lamarck (e.g., p. 91-92, 158-160) and how revisiting some of his ideas might have relevance in modern evolutionary theory. Some of the points stressed repeatedly in the book, while certainly valid, made me wonder if some of my own difficulty following the text stemmed from unfamiliarity with research norms in evolutionary morphology and/or differences in how one learns evolutionary theory. For example, the author repeatedly made points that seemed generally accepted, for instance, arguing against “design” (or “purpose” or “progress”) in evolution and arguing for the importance of phylogeny in affecting current traits. Other arguments presumably center around debates in morphology, for example, whether “form” comes before “function” or vice versa. (I found myself asking, Should they not coevolve together?)

For a book that emphasized the importance of behavior in evolution, there also seemed to be little discussion of how behavior itself evolves. I had initially hoped that behavioral traits would also be addressed in the ONCE framework, but, in the end, it never became clear to me if behaviors were even considered as traits. At one point, the author seems to consider behavioral variation as a source of randomness in evolutionary processes (p. 21). Given the topics in the book, I was surprised that there was basically little consideration of research about individual variation or eco-evolutionary mismatches (in relation to either behavior or morphology). There was only brief discussion of the field of behavioral ecology at the end, which confusingly criticizes the “extreme adaptationism” that prevails (presumably a caution against “just-so” stories). While my background in behavioral ecology clearly biases my preferences for these topics, I suspect that most readers of this newsletter might also generally have liked more explicit connections to behavioral ecology, given the title of the book.

A final minor, perhaps nitpicky, point is with the production and formatting of the book. Figures were inconsistent in their quality, and some typos sprinkled throughout were distracting. For example, given the importance of Figure 1.2 for summarizing the conceptual theme and key components, it was difficult to read, and it would have been nice to expand the figure and avoid cramped text and crowded boxes and arrows.

Overall, this book might be most relevant for advanced graduate students or researchers who already have a very solid foundation in evolutionary theory or behavioral ecology and are looking for different perspectives to reassess the state of the field or stimulate new ideas. I suspect that the crowded presentation of in-depth ideas would make it less accessible for more casual readers.

In the end, it is not clear that the book succeeds in presenting a novel unified approach to studying evolution, but it certainly generates interesting points for discussion that encourage cross-disciplinary reflection. Despite issues with organization, the ambition and scope of the work, to synthesize so many classic ideas across disciplines and generate a novel modern body of theory, is impressive. It certainly pushes the reader, whatever discipline they are from, to assess their own thoughts about the role of behavior in evolution and consider the perspectives of multiple disciplines.

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BOOKS FOR REVIEW

If you are interested in receiving *and* reviewing any of these books, or some other book suitable for this Newsletter, please email the newsletter editor: andreas.svensson@lnu.se. Please include your postal address. The due date for review in the next edition of the Newsletter is Sep 30, 2019.

Available from Oxford University Press

Book title

Anthrozoology - Human-Animal Interactions in Domesticated and Wild Animals (2019)
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 Sexual Selection: A Very Short Introduction (2018)
 Insect Behavior: From Mechanisms to Ecological and Evolutionary Conseq. (2018)
 Animal Locomotion, Second Edition (2018)
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 ten Cate & Healy
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 Blurton Jones
 Serpell

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Genes and Behaviour: Beyond Nature-Nurture. (2019), Hosken, Hunt & Wedell (Editors)

Available from Chicago University Press

Zebra Stripes (2017), by Caro

Available from Springer

Chemical Signals in Vertebrates 13 (2016), by Schulte et al.

Available from Royal Society publishing

Adult sex ratios and reproductive strategies: a critical re-examination of sex differences in human and animal societies. (2017) Eds: Schacht, Kramer, Székely & Kappeler

Interdisciplinary approaches for uncovering the impacts of architecture on collective behaviour (2018). Eds: Pinter-Wollman, Fiore, Theraulaz & Penn.