



ISBE Newsletter

Supplement to *Behavioral Ecology*
www.behavecol.com

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ISBE WEBSITE RELAUNCHED

At the 2015 Executive meeting, the Council decided that the ISBE website was due for a make over. As the outward face of the Society, the website is an important point of contact for the public and the ISBE membership, alike. In going about the task of refreshing and revamping the website, I engaged the services of Anna Hatzisavas (annahatzisavas.com).

Through an iterative process between Anna and the Executive Council, the layout and redesign of the website eventually took shape in time for its official relaunch at the 2016 ISBE Congress to coincide with the 30th anniversary of the Society. I sat down with Anna to discuss her background and her ideas for the website revamp.

BW: Tell us a bit about yourself and what you do for a living?

AH: I am a graphic designer living and working in Melbourne, Australia. I work for a tech company during the week, but on the side I do my own freelance projects, which can include anything from logos, posters and brochures to websites. So there's always something new to keep things interesting!

BW: Have you done a webpage for a Society before?

AH: No. This was the first website design I've done for a Society. It has been an enjoyable challenge to

redesign and refresh the Society's existing site. And it's a bonus when I find the subject of the website interesting as well.

BW: What was the inspiration behind the website you designed for ISBE?

AH: It's always a pleasure to be given an open brief. When I started, I knew that I wanted the design to be clean and minimal as there is a lot of content throughout the site and I wanted the user to be able to navigate and consume content as easily as possible. I liked the use of imagery throughout the old site design and I wanted to carry that through to the new design as well. It's nice to break up all the text with beautiful photography. I sampled the primary green colour from the ISBE logo and used it to created the rest of the palette. With a couple of suggestions and feedback from the Executive Council, the rest really just fell into place!



Anna Hatzisavas

Bob Wong

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The relaunched ISBE website
www.behavecol.com



Lately, I have been asked to give popular science lectures to audiences of various kinds. I do see it as a responsibility to communicate science outside the University, and judging from the dwindling number of students in our biology program, it may also be a necessity. However, it is a challenge to popularize science. It will require something very different from your stock-standard research seminar. You may even have to do the very opposite of what you have been drilled to do before. I have tried to evaluate what works and what doesn't, and have reached some conclusions. If they are applicable to others, I leave to the reader.

First, you may have to accept that much of the talk will be based on the work of others. This can be hard on your scientific pride. In conference talks we typically race through an introduction (assuming most know it already) to quickly get to the fun stuff - i.e. your *own* stuff. Popular science talks can benefit from being organised quite differently: do not fear spending a lot of time on introducing the field by talking about others' research, and speak rather briefly about your own contributions (which, to be honest, tend to be fairly minor for most of us).

The second concession is to dare to talk about things from long ago. This also goes against the grain of many researchers. We can be like music artists that only want to talk about their latest album, which they always consider their best work (even when fans and journalists only want to hear more about that big hit from way back). When choosing between a neat, self-selling story from your PhD days, and some convoluted result from last month, it may be good to swallow your pride and perform that hit song once more. A consolation is this: unlike music fans, your audiences have probably not heard it before.

A third insight is something I discovered by accident - a strategy I named "aim for a level below". Some time ago I had prepared a talk for high school students, but due to a glitch in the promotion, the audience turned out to be mostly researchers from the chemistry department. My talk had very simple

slides (mostly photos), no statistics, lots of other people's findings and a few "greatest hits" from early career. Despite my initial embarrassment, I gave the talk as planned. To my surprise the audience loved it. I received the best feedback I've ever had, and question time ran for half an hour. This experience made me think carefully about whom to aim for when preparing a talk. We should of course always try to push our audiences to learn new things, but our good intentions may be lost if they feel overwhelmed and zone out. I think of audiences on a ladder-of-expertise from *fellow behavioral ecologists*, to *other biologists*, to *other scientists*, to *the general public*, to *school kids*. When preparing popular science talks, I now aim for "one level below" compared to what I did before. It can be tempting to reuse complicated slides from your latest lab meeting. But weigh the chance of impressing a well informed handful against the risk of losing most of the audience.

I find speaking to the public enormously rewarding albeit demanding. The challenge is how to simplify and distil, without dumbing down or distorting. During this year's conference in Exeter I saw many excellent presentations that could be converted to equally excellent popular science talks. I hope many of you consider bringing your science to the general public. It may not be well awarded compared to publishing papers, but it will benefit you in other ways. It will force you to think clearly about your science and it will give something back to the greater society, which, for most of us, is paying our salary.

P. Andreas Svensson,
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A big thanks to all that have contributed to this Newsletter, especially our book reviewers and our two conference reviewers Liz and Ben!

How to contribute to the Newsletter

The ISBE Newsletter publishes Book Reviews, Conference/Workshop Reviews and 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 and arrange for their publisher to forward a review copy to the reviewer. Authors may submit a list of possible reviewers. Members who wish to review a particular text should contact the editor. The editor will provide reviewers with instructions and a style sheet. 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 should be prepared in one of the following two formats. *Brief synopses* (max 1500 words) and *Longer reports* (max 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.

This is the first newsletter since the hugely successful ISBE Congress in Exeter and since the transfer of roles on the executive council, so, as the incoming president, I'm taking this opportunity to write a few words about our society and that meeting. It is a great honour and privilege to have the opportunity to serve as president of ISBE, even though it is made rather daunting by the fact that I have such hard acts to follow. Our current and recently retired past-presidents, Nina Wedell and Gunilla Rosenqvist, have been outstanding servants of ISBE and I am greatly indebted to them for passing on a society in such good health. Gunilla has been involved with ISBE in some capacity since its early days. She was an organizer of the 1990 meeting in Uppsala, she was a long-serving editor of Behavioral Ecology and has had two stints on council. Likewise, Nina steps down as President after a long involvement with the society, again including two stints on council, and after introducing some important changes to its make-up and procedures - my heartfelt thanks to both of them, on behalf of ISBE.

And so to Exeter. By common consent and by every yardstick, this was a truly outstanding and inspiring conference. The Exeter University campus, with most delegates staying on site, was a perfect venue for our 16th meeting in the society's 30th year. The society is immensely grateful to Sasha Dall, his colleagues from the university's Exeter and Falmouth campuses, and their small army of helpers for all their efforts. Like the proverbial swan, we occasionally glimpsed the frenetic activity going on beneath the surface to keep the congress moving serenely forward during the meeting itself, but can only imagine the time and effort that went into planning and preparation over the previous two years. I particularly welcome the fact that, via Nina's initiative of inviting past, current and future organisers to attend council meetings, we now have an effective mechanism for transmitting experience and knowledge from one organizing committee to the next.

A more detailed review of the Exeter congress appears elsewhere in the Newsletter, so I will make only brief remarks on why I think it was such a resounding success. The tone was set from the opening ceremony, with some characteristically pithy and incisive comments on the state of the political and scientific landscape from Richard Dawkins. The contributed talks were of the usual excellent standard and covered topics as wide-ranging as we have come to expect from ISBE meetings. Collectively, the talks and the many poster presentations demonstrated the ever-increasing strength and maturity of behavioural ecology as a discipline - these were reflected in the rigour of the science described, the depth and breadth of questions addressed, and the diversity of approaches used to answer them. The fact that so many of the presentations at our meetings are delivered by PhD students and other early career scientists also illustrates the health of the society and its promise for the future. Indeed, ISBE is particularly proud of the fact that we are able to help so many early career researchers attend our congress through the travel grant scheme. Among the many highlights, I think my longest lasting memories of the meeting will be the extraordinarily impressive collection of plenary lectures that we were all privileged to hear. Plenary

speakers are of course invited with the expectation that they will have something interesting to say, and that they will say it with some panache, but rarely are those expectations met quite so spectacularly. For me, and for many of the colleagues that I spoke to during the meeting, this inspirational series of talks reminded us all why we are behavioural ecologists, and younger members of the audience need look no further for examples of ultimate benchmarks of achievement in our field.

Apart from holding international meetings every two years, our society's other key activity is to publish our journal, Behavioral Ecology. In classic red queen terms, every successful journal must continuously adapt, and under the dedicated and tireless leadership of the editor-in-chief, Leigh Simmons, the past few years have seen major initiatives in the journal that have maintained its position at the forefront of its discipline. I want to take this opportunity to thank Leigh and the editorial team that he leads for all their tremendous efforts in ensuring that the journal continues to publish science at the cutting edge of behavioural ecology. It is also important to remember that Behavioral Ecology, the major source of income for ISBE, is very much a joint enterprise between the society and Oxford University Press. We are very fortunate to benefit from the publishing experience and commitment of Ian Sherman, who has looked after our journal at OUP so expertly for the past three years.

ISBE is also fortunate to have an Executive Council of willing and enthusiastic people who, with the exception of the past/current/future congress organisers, are elected by the society. In addition to those I've already mentioned, Bob Wong and Andreas Svensson continue to work assiduously on the society's behalf in their roles as secretary and newsletter editor, respectively. Our long-serving treasurer, Walter Koenig has stepped down after 16 years of dedicated service, and I am delighted that Trish Schwagmeyer has agreed to replace him on council. I also want to welcome the current president elect Andrew Cockburn, and new council members Suzanne Alonzo and Amanda Ridley who have replaced Jutta Schneider and Marta Manser. Many thanks to all current and newly retired council members for their invaluable contributions.

Finally, I'd like to thank all members for their help in making ISBE such a vibrant society. In addition to attending and presenting your science at our conferences, we are grateful for your engagement with the journal as editors, authors and reviewers, as well as your contributions to this newsletter. I'd also like to remind members that the council is always keen to discuss potential future congress venues with anyone interested in helping to continue our rich tradition of exciting and inspiring ISBE conferences. Thanks and hope to see you all in Minneapolis in 2018.

Ben Hatchwell
ISBE President



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BEHAVIORAL ECOLOGY E-MAIL ALERTS

Don't miss the latest news from your journal!

Exciting things are happening with ISBE's official journal, Behavioral Ecology. From new articles to Editor's Choice articles, to virtual issues; make sure you don't miss out. Sign up to receive email *Table of Contents* and *Advance Access* alerts today, and remember to tick to receive news and offers from Oxford University Press to hear about virtual issues and article collections.

Sign up now:
www.oxfordjournals.org/en/connect/email-alerts.html

Journal website:
<http://beheco.oxfordjournals.org>

Journal Facebook site:
<https://www.facebook.com/behecol/>



ASAB Winter Meeting 2016

Dec 1-2, 2016, ZSL, London, UK. "Animal navigation: from quantum physics to global migration." The conference is free to attend. Make your own accommodation arrangements.
<https://oxnav.zoo.ox.ac.uk/ASAB2016>

Society for Integrative and Comparative Biology

SICB Annual Meeting 2017: 4-8 January, New Orleans, Louisiana, USA.

ASAB Easter Meeting 2017

April 5-7, 2017 in Liverpool, UK.
<http://www.asab.org/conferences/2017/4/5/asab-easter-meeting-2017>

EHBEA 2017

European Human Behaviour and Evolution Association Congress. April 6-8, 2017 in Paris, France.
<https://ehbea2017.sciencesconf.org/>

ABS 54th Annual Conference

Animal Behavior Society Annual Conference in Toronto, Canada. June 12 - 16, 2017.
www.animalbehaviorsociety.org/2017-sd/

Evol2017

"Evolution conference": a conference of the Society for the Study of Evolution, the Society of Systematic Biologists, and the American Society of Naturalists. June 23-27 at the Oregon Convention Center in Portland, OR, USA.
<http://www.evolutionmeetings.org/>

Mathematical Models in Ecology and Evolution.

The 6th bi-annual conference, 10-12 July 2017 at City, University of London. UK. See also the call for symposia on page 24 in this newsletter.

Behaviour 2017 The 35th International Ethological Conference, July 30 - Aug 4, 2017 in Estoril, Portugal.
www.behaviour2017.org

ISAE 51st International Congress

International Society for Applied Ethology Aug 7-10, 2017 Århus, Denmark. Theme: Understanding animal behaviour
<http://conferences.au.dk/isae2017/>

European Society for Evolutionary biology (ESEB) Congress. August 20 - 25 2017 in Groningen, The Netherlands. <http://www.eseb2017.nl/>

The 7th Poeciliid Meeting

Norman, Oklahoma May 24-26, 2017. Please visit and bookmark the meeting website at <http://poeciliid2017.com/> or the Facebook group: "7th Meeting of Poeciliid Biologists ". Contact us at poeciliid@ou.edu

HBES 2017

Human behaviour and Evolutions Society meeting on May 31 - Jun 3 at Boise State University, Idaho.
<http://ishe.org/boise-2017/>

ASSAB conference

July 12-14, 2018. Australasian Society for the Study of Animal Behaviour Conference, Brisbane, Australia.
<http://www.assab.org/>

ICN 2018

International Congress of Neuroethology. July 16-20, 2018 in Brisbane, Australia
<http://icn2018.com/index.php>

IUSSI 2018

International Union for the Study of Social Insects, Guarujá, Brazil. August 5-10 2018
<http://www.iussi2018.com/>

ISAE 52nd International Congress

International Society for Applied Ethology July 30 - Aug 03, 2018, Prince Edward Island, Canada
http://www.applied-ethology.org/isae_meetings.html

Evol2019

The 2019 Evolution meeting will be in held in Providence, RI, USA
<http://www.evolutionmeetings.org/>

ISAE 53rd International Congress

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



Sasha Dall, chair of the organizing committee of ISBE 2016 in Exeter. The next ISBE conference will be in Minneapolis, MN, USA in 2018. Details of this meeting will be announced in future issues of this newsletter.

In my 2014 report on the journal, I described a series of changes that aimed to increase the journal's visibility and impact, and to more effectively promote our science to the general public. The last 2 years have been a period of relative stability as we have worked toward consolidating these changes. As hoped, we have experienced an increase in submissions suggesting that the journal is increasingly perceived as an attractive place to publish. Increased submissions will allow us to become more selective and drive up the impact and quality of the journal. Behavioral Ecology is currently delivered to 2,653 consortia customers with access to the journal via the OUP Collection and 1,413 institutions in developing nations accessing the journal through OUP's philanthropic initiatives.

New initiatives

Mandatory data archiving

In the interests of adopting the highest standards of scientific rigor, and responding to the increasing demands of public funding bodies to make research outcomes openly accessible, Behavioral Ecology worked during 2015 toward the adoption of mandatory data archiving, which was formally introduced on the 1st January 2016. As a service to our authors we are providing data archiving in DRYAD at no charge. We are sensitive to the concerns of researchers over the subsequent re-use of data, and as such have developed a policy of ethical data re-use. Along with the submission of any manuscript in which archived data are used, Behavioral Ecology will require copies of correspondences with the original data collectors that make it clear that data re-users and collectors have agreed to data re-use, and that issues surrounding co-authorship have been discussed to the satisfaction of all parties. Re-users of data will also be required to cite both the source of the data and the original article from which it was drawn. We hope that by adopting these explicit policies the journal will lead the way in ethical data re-use.

Twitter

Behavioral Ecology launched its Facebook page in 2012 to more actively disseminate its research, both to the behavioral ecology community and to the general public. In 2014 we added twitter to our social media outreach. The Behavioral Ecology twitter feed is curated by a member of the Editorial Board, currently Hannah Rowland. Currently the feed has >2,000 followers. 46% of our followers are male, and 54% are female. 30% of our followers are from the UK, 23% USA, 8% Australia, and the remainder are from Canada, France, Germany, Spain, Japan, Sweden, and South Africa.

We have around 113,000 views per quarter, which results in around 600 link follows to our journal articles. Each month the article receiving the greatest attention is made free to view for a period of 3 months.

One recent highlight has been a paper tweeted about on the 01/05 ('Partner fidelity and reciprocal investments in the mating system of a simultaneous hermaphrodite'). It has received an impressive

Altmetric score of 169. It was tweeted about 30 times, picked up by 17 news outlets and mentioned in 2 blogs <https://oxfordjournals.altmetric.com/details/7048847>. Our hope is that we can use social media to increase attention to, and citation of, work published in the journal.

Altmetrics

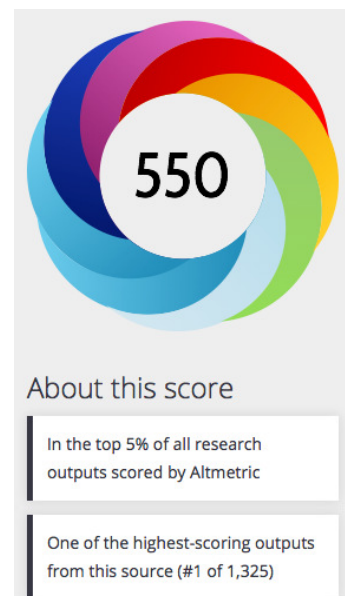
As we strive to increase impact and reach of the research reported in Behavioral Ecology beyond traditional academic venues via twitter and facebook, OUP began in 2015 to collect and provide article level altmetric data for the journal. The altmetric score is a measure of the amount of attention an article has received online, in social media and news sites. Altmetrics started in 2012. Thus far the article with the highest altmetric score is Barnaby Dixon and Paul Vasey's article on how beards affect perceptions of men's age, social status

and aggressiveness, followed by Jean-Nicolas Audet and colleagues article on urbanization effects on problem solving and immunocompetence in birds. With scores of 550 and 312 (June 2016) respectively these articles are in the top 5% of all research outputs scored by altmetrics. The launch of Altmetrics was accompanied by an advertising campaign "Explore articles making the most impact" that aimed to increasing usage of the top 10 scoring articles by collecting them together on the journal's electronic home page and making them free to view. These articles received an increased usage of 60% during the campaign.

Editorial Board

There have been a number of changes to the Editorial team since my last report. Some of our Editors have finished their terms of office, including Alison Bell, Wolfgang Forstmeier, Alexi Maklakov, Nick Royle and Glauco Machado. I would like to formally thank each of these individuals for their hard work and dedication to the journal. Accordingly, we now have 5 new Editors, Naomi Langmore, David Stephens, Louise Barrett, Suzanne Alonzo and Jonathan Pruitt. I am extremely grateful to these individuals for agreeing to offer their time and expertise to build upon the strength of our journal over the coming years.

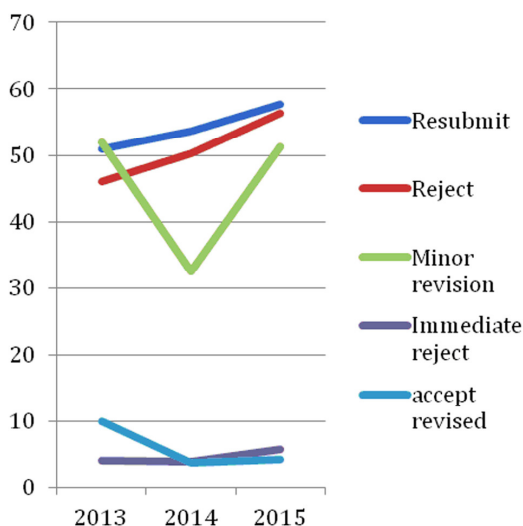
We have also seen changes to our Editorial Board. My thanks go to Susan Alberts, Doug Emlen, Eileen Hebets, I-Min Tso, Stuart West, Mariella Herberstein, John Skelhorn, Lutz Fromhage, Maria Servidio, Hanna Kokko and Carel ten Cate who have all completed terms on the Editorial Board, and I welcome new members



Amanda Ridley, Hannah Rowland, Erik Postma, Tim Fawcett, Tim Caro, Elizabeth Tibbetts, Devi Stuart-Fox, Julia Schroeder, Andres Lopez-Sepulcre, Paula Stockley, Tom Reader and Ron Ydenberg. Our editorial board provide rapid reviews on up to 10 manuscripts per year, and serve as adjudicators when necessary. Our editorial structure aims to afford a broad area of expertise in behavioral ecology research, to be gender balanced and to represent the international community. We currently have 17 male and 12 female Editors from 10 Countries, that provide a broad coverage of research areas and taxonomic specialities.

Manuscript Submissions, Decisions & production

During 2014 (2015) Behavioral Ecology received 640 (644) Original Articles, an increase of ~17% on the last reporting period. We also Invited 7 (3) Reviews with associated Commentaries, and 8 (6) Ideas. During the same periods decisions were made on 694 (661) submissions. Of these 66% (63%) were rejected (22% (27%) without review) and 34% (37%) were accepted for publication.



Having reduced the overall time from submission to decision to 32 days in the last reporting period, decision times remained steady at 31 days in 2014 and rose slightly to 41 days in 2015. The longest wait period is when manuscripts are in the initial review process. This period was 45 days in 2014 and 55 days in 2015. The major rate limiting step in decision timing is now the time it takes our referees to return their reviews. Resubmission to final acceptance has been reduced from an average of 10 days in 2013 to an average of 4 days in 2014 and 2015. The time for immediate rejections remains steady at 3-4 days.

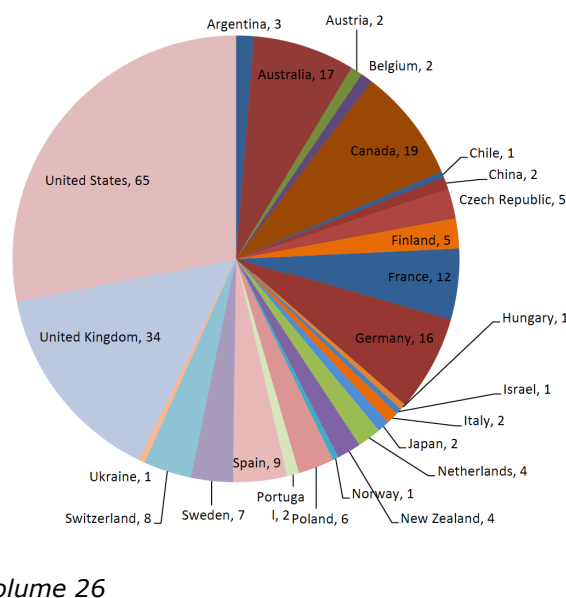
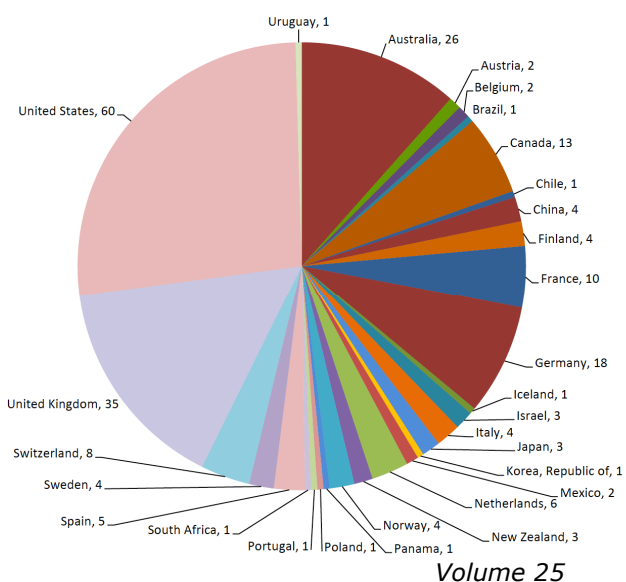
The time from final acceptance to publication in advance of print fell from 5 weeks in 2014 to 3.7 weeks in 2015. This 26% reduction in production time largely reflects processing changes made at the typesetter.

Published Volumes

Volumes 25 and 26 of Behavioral Ecology appeared in 2014 and 2015 respectively. Volume 25 comprised a total of 1533 pages with 160 original articles, 5 Invited Reviews with associated commentaries, 4 Invited Ideas and 8 Invited Anniversary Essays. Volume 26 comprised a total of 1596 pages with 164 original articles, 7 Invited Reviews with associated Commentaries, and 4 Invited Ideas. Collectively these articles have received 974 citations, an average of 2.79 citations per article, with the most cited being Noa Pinter-Wollman and her colleagues Invited Review in volume 25 issue 2, "The dynamics of animal social networks".

For each issue in 2014 and 2015 one article was highlighted as Editor's Choice. These articles have been made free to view and are archived in a collection that can be accessed via the electronic journal homepage.

Our authors come from 29 countries, with continental Europe, the USA and the UK still the largest represented groups.



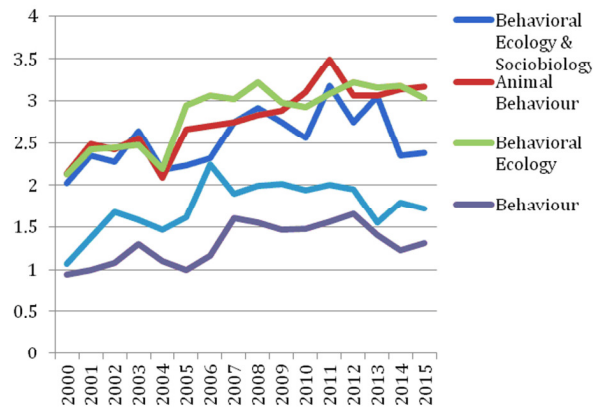
Virtual Issues

Virtual issues were introduced in 2013. Behavioral Ecology published 1 virtual issue in 2014 and 2 in 2015. Our 2014 issue was a celebration of 25 years of the journal and highlighted 17 articles from the journals archive, each selected by a current or former Editor of the journal. It also included an archive of Pitelka Prize articles. Virtual issues in 2015 were built around two or our Invited reviews "A focus on Cognition" around Candy Rowe and Sue Healy's review on measuring variation in cognition, and "Behavioral Ecology in a Changing World" around Bob Wong and Ulrika Candolin's review on behavioral responses to changing environments. All featured articles were made free to view. Virtual issues are proving effective in increasing usage of articles published in the main journal. For example, articles in "Behavioral Ecology in a Changing World" had an average increased usage of 60%, and for some articles up to 400%.



Journal Impact

The ISI Impact Factor for Behavioral Ecology fell from 3.177 in 2014 to 3.029 in 2015 and is currently ranked 15/51 in Behavioral Sciences, 42/149 in Ecology and 10/160 in Zoology. The slight decline in impact factor is symptomatic of the discipline as a whole. Behavioral Ecology ranks closely with Animal Behaviour (IF 3.169) and is increasing its gap with Behavioral Ecology and Sociobiology (IF 2.382).



Electronic Journal Usage

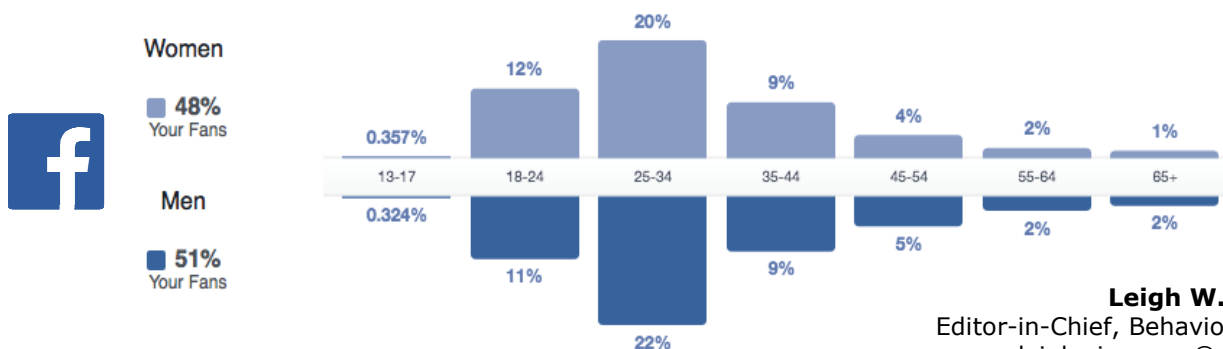
Full text HTML and pdf downloads rose from 634,655 in 2014 to 641,714 in 2015. The monthly downloads were ~52,900 and 53,500 in 2014 and 2015 respectively, which is a 25% increase on the previous reporting period.

The journal currently has 5,724 email Table of Contents (eTOC) registrants, an increase of 2.3% upon the previous year (5,592 eTOC registrants in December 2014). Behavioral Ecology also has a further 1,578 individuals signed up to receive Advanced Access (AA) e-alerts, an increase of 4% from December 2014 (1,516).

The Behavioral Ecology mobile site launched in June 2011 and usage has been increasing steadily, from 4,737 in January 2014 to 6,792 in January 2015.

Facebook

The journal's facebook page @behecol has 6,170 followers. The page is used to highlight new articles in the journal that are particularly newsworthy, and our Invited Reviews. When each new issue of the journal is released a lay summary of the Editor's choice is posted, along with a "Focus on issue" post with images accompanied by author provided lay summaries. Posts typically reach an audience of ~3000-4000 people. The page is also used to post society information, such as ISBE conference announcements and the newsletter, and coverage in the media to papers published in Behavioral Ecology is shared on the Behavioral Ecology page. Perhaps not surprisingly the page is most popular among the younger cohorts.



Leigh W. Simmons
 Editor-in-Chief, Behavioral Ecology
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THE 2016 ISBE GENERAL MEETING

The ISBE General meeting in 2016 was held in the Great Hall at the University of Exeter on Monday 1 August during the lunch break. Approximately 40 people attended. The new ISBE president Ben Hatchwell chaired the meeting, following the transfer of presidency from Nina Wedell at the ISBE Exit Meeting the previous day.

In his opening address, Ben began by reiterating the two main functions of the Society, which is to publish the journal *Behavioral Ecology* and to organise the ISBE Congresses. Ben congratulated the 2016 ISBE Congress organisers on a fantastic conference so far, which has been delivered to a very high standard. The vitality of the conference, Ben remarked, was also due in large part, to the number of students and early career researchers who were in attendance. In this regard, the Society was proud to be able to provide travel awards to support young researchers to attend the ISBE conferences – and that we should continue to encourage and inspire young behavioural ecologists.

Ben then provided an overview of the Council's membership. Ben thanked Gunilla Roseqvist, who had earlier stepped down from her role as past president and, in so doing, ended a long and distinguished association with the ISBE Executive. As part of this changeover, Nina Wedell becomes 'past president' and Andrew Cockburn becomes 'president-elect'. Ben thanked the retired Councillors, Jutta Schneider and Marta Manser, for their service to Council and welcomed new Councillors Amanda Ridley and Suzanne Alonzo. Ben also welcomed incoming Treasurer Trish Schwagmeyer, who replaces Walt Keonig. Ben ended his opening address by briefly outlining the Constitutional changes that have been made to expand the Council's membership. Among the changes is the appointment of the past and future ISBE Congress organizers onto Council, which is designed to ensure a smooth

handover and transfer of knowledge between ISBE congress organising committees.

Leigh Simmons, as the Editor-in-Chief of *Behavioral Ecology*, then took the stage to go through the 2016 Editor's report (For details, please see the Editor's report on page 6). After the presentation, Ben thanked Leigh for his personal commitment in contributing to the outstanding success of the journal.

The Treasurer's report was next, with Walt Koenig, taking the stage for the last time in his role as Treasurer (see also below). Towards the end of his presentation, Walt reflected on his time as Treasurer and commented on his delight in being able to hand over the job to Trish on his first official day of retirement. Ben thanked Walt for his 16 years of dedicated service as Treasurer and presented him with a gift on behalf of the Society.

Bob Wong spoke on behalf of Andreas Svensson, the newsletter editor, and placed a call for more content to populate the pages of the newsletter, before officially relaunching the Society's newly revamped and refreshed webpage (see front page).

Finally, Ben spoke briefly about the venue of the 2018 Congress, the details of which were to be presented after the Hamilton Lecture. Before closing the meeting, Ben asked the membership for expressions of interest for the 2020 Congress, highlighting the desire to extend the reach of the Society and its conference into new countries and regions of the world.

Bob Wong
Secretary, ISBE
Monash University, Australia

A MESSAGE FROM THE PAST TREASURER

The primary source of funds for the ISBE is its agreement with Oxford University Press to share profits from *Behavioral Ecology*. Since it required nearly 15 years for any profits to be realized, the society's funds were modest in the early years, coming primarily from membership dues. Starting around 2003, however, the society began to benefit from the success of *Behavioral Ecology*, and now, despite the dramatic changes in publishing, it receives on the order of \$150,000 USD annually from the journal.

What the society does with these funds is to use them to support travel and attendance of students, younger professionals, and people from developing countries to attend the biennial meetings. Starting with the 2008 meeting in Ithaca and continuing through to the latest meeting in Exeter, the society has provided financial support to over 600 students and others in order to facilitate their attendance at ISBE meetings. Given the international nature of the society and the relatively limited nature of its activities—which consist of publishing a professional journal and a biennial

meeting — I believe that such support is, and will continue to be, the best use of the society's funds.

Since the founding of ISBE in 1986, there have been only three ISBE treasurers. The first hardy soul to hold this position was Carl Gerhardt of the University of Missouri, who held the post until I took over in 2000. After 16 years, the torch has now passed to Trish Schwagmeyer. As the premier society for its field, I feel honored to have had the opportunity to serve the ISBE as Treasurer, and look forward to its continuing success in the future.

Walt Koenig
Past Treasurer, ISBE

ISBE 2016: 28th July – 3rd August, The University of Exeter, Exeter, UK

Exeter set the stage for the 30th anniversary of ISBE; its first visit to British shores since 1994, and a welcome return to the familiar collegiate atmosphere of a university town.

Although steeped in history, Exeter may not have the grandeur of previous venues; it would take some doing to match the view provided by the poster session in New York. However, the relatively small size of the city produced an intimate conference, conducive to forging new friendships, and renewing old acquaintances. We imagine the majority of drinking establishments in the city can testify to this.

The University campus proved to be an ideal location for the conference - the locations for all the talks were conveniently close together, and each were easily accessible from one another within the 5 minute hiatus between talks. Coupled with the seemingly never ending animal audio prompts to mark various stages of the talks (our favourite being the particularly unnerving pheasant), ensured the transition between talks was smooth and swift. Aside from the poster sessions being slightly clustered and claustrophobic, the conference ran seamlessly, and was a credit to the huge effort that Sasha Dall and his organising committee clearly put in. In keeping with tradition, the biannual football tournament was held on the free afternoon of the conference, and the conference events included all the best that the South West has to offer, a particularly popular excursion being fossil hunting on the Jurassic coast. (An extended slide show from Doug Emlen of all the fossils he found, including increasingly exasperated expressions on Leigh Simmon's face in the background, confirmed the success of the excursion).



Many of us had first-hand encounters with the cheeky herring gulls that were breeding on the Exeter campus.

Upon the release of the conference programme earlier in the year, expectations were high, and the delegates were not disappointed. The conference began in explosive fashion, "speak for yourself": Richard Dawkins dismissive response to the vice-chancellor's view of the need to accept Brexit. This was then

followed up with a typically controversial tirade, with a certain publication in *Nature* (no prizes for guessing which one) drawing the majority of his ire. We think it's fair to say it was an opening ceremony that few people will forget.

We were privileged to have a wonderful array of plenary speakers, on a wide range of topics, offering something of interest for everyone. Tim Clutton Brock started us off with an overview of cooperation and the evolution of this behaviour in mammals. With no sugar coating, he took us through the realities of cooperative breeding in arid environments, highlighting the amazing plasticity meerkats can exhibit in terms of growth and development, in order to maximise reproductive success and survival. This behaviour has obvious pay-offs: a dominant female meerkat has more than twice the lifetime reproductive success of a dominant male red deer!



Tim Clutton-Brock delivering his plenary

Madeleine Beekman came next, focussing on the Cape honeybee's widespread colony parasitism and imprinting behaviour. Interestingly, all is not as it seems; apparently you can change your fate, with some offspring of worker Cape bees turning out to be Queens, even in different colonies! Social insects offer a wealth of insight into the study of conflict and cooperation; indeed honeybee cooperation may help us to better understand mammalian brains.

Malte Andersson gave us a wonderful insight into the evolution of conspecific brood parasitism and its population consequences, with a focus on female-philopatric waterfowl. Although this behaviour sometimes borders on cooperative behaviour, further investigation is still needed. It seems host-parasite association and female philopatry are important in this often risky behavioural tactic. The wonderful long-term databases he has available offer up many avenues to test these theories and unravel these questions.

Rosemary Grant delighted us with a truly inspirational tour of her ground breaking work on adaptive radiation in Darwin's Galapagos finches. She particularly emphasised the importance of understanding ecology and behaviour, when interpreting the relatively new dimension of molecular genetic data. Combining these three disciplines can truly reveal causal mechanisms behind speciation and changes in evolutionary trajectories. Rosemary is also a staunch flag bearer for persistence in field studies – when 90% of your study species dies, just keep going, it is worth it!

Trevor Price followed on from Rosemary, with a superb talk on sexual selection in the coevolution of bird colouration and colour vision in the New World warbler and comparisons between their Old World counterparts. From analyses of visual pigments, evidence suggests that colour perception is in fact driving divergent evolution. Understanding more about the mechanisms behind colour vision offers greater future comprehension as to how the magnificent diversity of animal colours we see today has evolved.

Hopi Hoekstra took us on a fascinating journey exploring the link between gene expression and burying behaviour in deer mice (*Peromyscus*). Combining both field and lab data, she gave us a glimpse into their genetics and neurobiology, her ultimate goal being to identify genes that confer ecologically relevant behavioural differences, and how the resultant proteins work in the brain to achieve this.



Hopi Hoekstra

Following on from the plenaries, we started to recognise key themes that were emerging during this conference. One of the biggest of these was highlighting the importance and value of long-term studies. Although they may not always produce results in short time frames, data from long running projects is invaluable in studying the ongoing interactions between genetics, behaviour and ecology. Having the foresight to recognise and emphasise this continues to be imperative, especially when funding is involved.



ISBE delegates lining up for drinks at the local pub

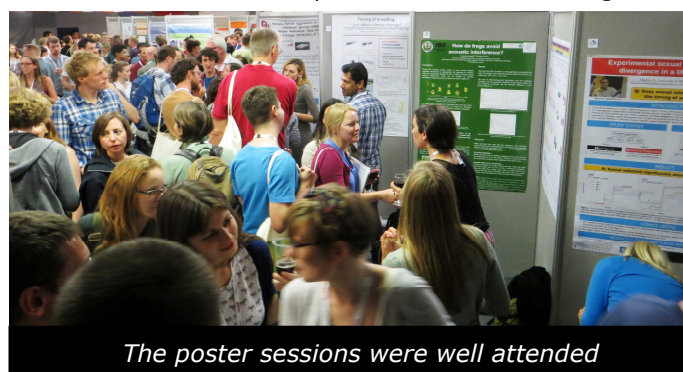
Moreover, as exciting new fields emerge (from social networking to Next-Gen sequencing) what is paramount to encourage, is reciprocity between fields. It is only when we combine data from different types of analyses that we can truly build a broad and thorough understanding of our study systems. Hence, the importance of being aware of other research both in and around your field, and always being open to the idea of new collaborations.

The conference culminated in Naomi Pierce giving the Hamilton Lecture "Ant symbioses: from parasitism to mutualism". In her introduction, outgoing president Nina Wedell spoke of the influence Naomi Pierce has had on her career, and by the end of the lecture it wasn't hard to believe why. Naomi Pierce's infectious passion for her research area captivated the audience - no mean feat considering the majority of people had been listening to talks non-stop for the previous five days. Naomi detailed the critical role ants play in shaping terrestrial ecosystems, and illustrated how this occurs by describing the complex relationships ants form with other organisms, including parasitisms and mutualisms. Examples detailed included the association between ants and caterpillars, and how lycaenid larvae employ chemical and acoustical signals to manipulate ants. Naomi then went on to talk about the interaction between ants and their gut microbes, and finally between ants and ant plants. Together, these examples demonstrated how species interactions, in particular parasitisms and mutualisms, can influence the evolution of one another. It was a fitting end to what had already been an inspirational line up of plenary speakers.



Naomi Pierce

The legacy of Bill Hamilton, who would have turned 80 during the conference, was a recurring theme throughout the week. After touching on this in his concluding remarks, incoming president Ben Hatchwell went on to highlight the many truly inspirational plenaries that he has witnessed at previous meetings - it seems that the ISBE plenaries are something of a



The poster sessions were well attended

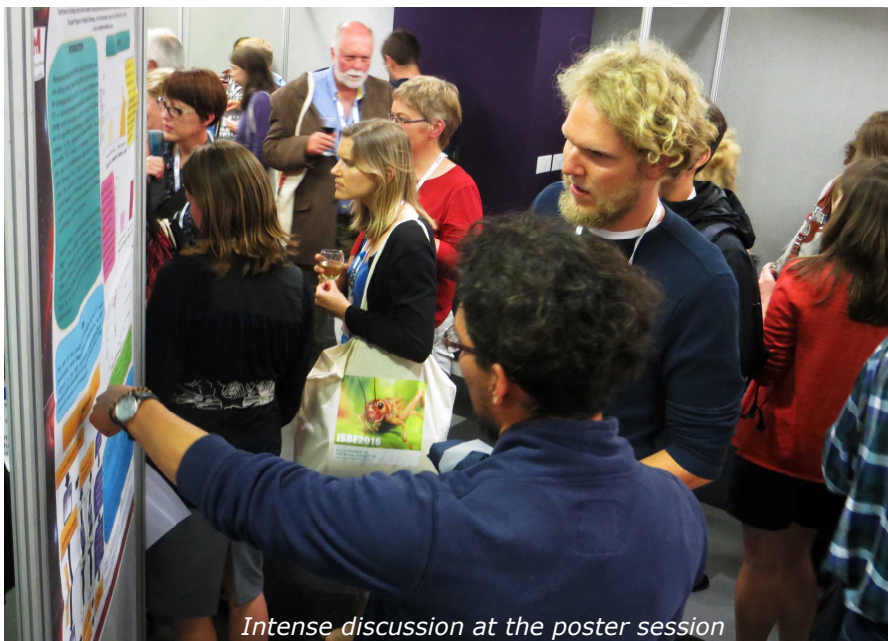
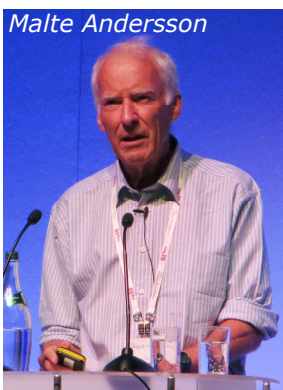
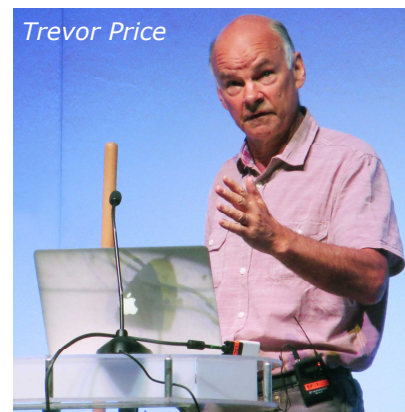
legacy themselves. Ben really brought us a sense of what ISBE means to him and how influential this conference has been throughout his career. The dates for this meeting go into his diary as soon as they are announced, and woe betide anyone who gets between Ben and a conference T-shirt! On a more serious note, he also pointed out how the conference provides an opportunity for early career researchers to engage with new international colleagues, a potentially pivotal moment for someone at the start of their career. In times of uncertain funding in science, we must fight to keep these opportunities to interact, and make the very best of them. Thanks go to Sasha Dall and the fantastic team at the University of Exeter for all their efforts, ISBE 2016 lived up to all expectations, and

was a fitting tribute to the 30th anniversary of ISBE. We look forward to seeing you all in Minnesota and finding out what wonderful research has been done in the meantime!

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Photos by P. A Svensson



Animal Communication Theory: Information and Influence

Edited by: Ulrich E. Stegmann

Cambridge University Press. 2013. 472 pp.
ISBN 9781107013100

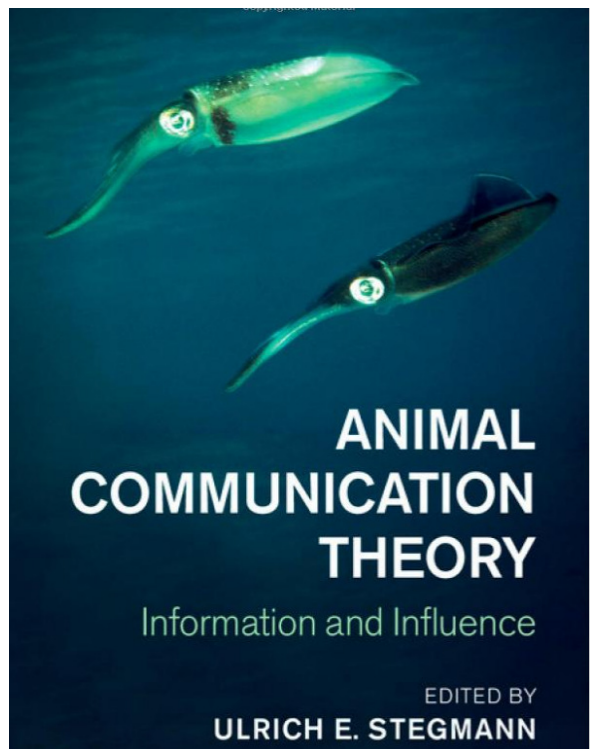
Is the transfer of information a key feature of animal communication, or is the very concept of information redundant and misleading? To what extent does communication entail signallers manipulating the behaviour of receivers? The goal of this book is to reconcile these different viewpoints through an examination of the concepts of 'information and meaning' and 'influence and manipulation' by authors whose disciplines include not only behavioural ecology, but also psychology, cognitive science and philosophy.

The book begins with the editor's introduction to information and influence in animal communication. I found the overview of philosophical and linguistic perspectives particularly useful when reading some of the subsequent chapters. However, two issues arose here that recurred throughout the book. First, there was a shift back and forth between proximate and ultimate perspectives without acknowledging the distinction, which would be especially confusing for readers unused to thinking about the levels of analysis. Second, the conclusion is largely non-conclusive:

... the suitability of information and/or manipulation for explaining animal communication is not simply an empirical matter. It also depends on which notions of information and manipulation one endorses.

As each chapter seemingly endorses a different notion of information and manipulation, the book overall did not leave me with a clear understanding of when a given approach is more suitable than another.

The first two sections of the book consider the concepts and explanatory value of information (Part I) and influence (Part II). Horn and McGregor (Chapter 1) use a network perspective (multiple signallers and multiple receivers) to demonstrate the utility of considering information flow in communication. Following this, the philosopher¹ Scarantino (Chapter 2) argues for an integrative approach combining influence with information. In Chapter 3, Kight et al. give an excellent demonstration of the utility of statistical decision theory for analysing how receivers use information and for generating predictions about the fitness effects of such behaviour. While Wiley (Chapter 4) also stresses the importance of the receiver's perspective, he does not invoke evolution, defining a signal as 'any pattern of energy or matter that evokes a response without providing all of the power for that response,' which made my inner behavioural ecologist very twitchy indeed. Similarly, Millikan's Chapter 5 discusses philosophical concepts of information without



any reference to evolution. The book's interdisciplinarity is one of its strengths, but it was hard for me to see how some of the material here (for example, the statement that individuals communicate 'when an intentional sign is interpreted coincident with the purpose of its production by a cooperative interpreter in the normal way, a thing's purpose being – recall – something it was designed for doing') informs the bigger picture for evolutionary biologists.

We return to evolution in the first chapter on influence, by Rendall and Owren (Chapter 6). However, this chapter largely does not address influence itself but is instead a well-argued criticism of information, suggesting that its (mis-)use is a carryover from overenthusiastic analogies with computation from the 'cognitive revolution'. In a nod to influence, the authors remind us to consider the signaller's perspective, and, along with Horn and McGregor, stress that context is important. In Chapter 7, Sarkar, a philosopher², likewise discusses influence from a criticism of information, distinguishing between three different types of information. Although both of these chapters make important points, their placement in the section on influence seems to imply, misleadingly, that the former approach can only be used when (or because) the informational approach fails.

The final two chapters in this section address influence more directly, and from a proximate perspective. Morton and Coss (Chapter 8) put forward the 'assessment/management concept' as a mechanism by which signallers affect the behaviour of receivers, while also arguing that the informational approach needs to return to null hypotheses and testable

¹ Observations from this chapter generate the testable prediction that an author is identifiable as a philosopher by the number of footnotes s/he employs.

² This chapter provides evidence to support the prediction in Footnote 1.

predictions. Similarly, Ryan (Chapter 9) primarily takes a proximate approach, but also provides a much-needed explicit mention of the levels of analysis, calling for synthesis of evolutionary and neurobiological perspectives of signalling. His chapter, using the túngara frog as an in-depth example, provides a good segue into the book's third section.

In Part III, we see the concepts of information and influence through the lens of five case studies: Horisk and Cocroft on treehoppers (Chapter 10), Botero and de Kort on birdsong (Chapter 11), Fischer on primate vocalisations (Chapter 12), Allen on meerkats (Chapter 13), and Christison-Lagay and Cohen on the neurobiology of vocalisations (Chapter 14). While I much enjoyed this part of the book, I thought the chapters did not form a natural group together (for example, Ryan's preceding chapter also uses detailed empirical examples to illustrate theoretical concepts). While the last chapter offered a detailed mechanistic perspective, the first four picked up on themes opened earlier in the book, and offered a diversity of viewpoints on the relative utility of information and influence in different signalling systems.

The next two chapters form the section on the 'evolutionary perspective' (Part IV). As several other chapters also take an evolutionary perspective, perhaps this part of the book would be better as a 'theory' or 'modelling' section to complement the preceding section's focus on empirical work. Lachmann (Chapter 15) returns to the statistical perspective introduced by Kight et al., using the concept of entropy from physics to investigate the fitness value of information. Godfrey-Smith's Chapter 16 also provides a useful modelling perspective by analysing the extent to which senders' and receivers' interests overlap, and notes that theoretical developments in animal communication are linked to those in studies of cooperation. His conclusion that signallers determine information content and receivers determine whether signals have influence is a welcome nod to the book's initial premise to resolve apparently divergent perspectives.

The book concludes in Part V by linking non-human animal communication to human language. Adams and Beighley (Chapter 17) address the concepts of information and meaning from a linguistic perspective, unfortunately accompanied by imprecise evolutionary

language (e.g. 'there is evolutionary selection over a trait where the selection is at the level of the species'). Lastly, Scott-Phillips and Kirby (Chapter 18) provide a useful overview of computational approaches to language evolution. Importantly, they show how this field can contribute to the study of communication more broadly, offering a refreshing outward-looking perspective at the close of the book.

In sum, I found many of the individual chapters very valuable, but came away with the disconcerting feeling that the whole book is less than the sum of its parts. First, I thought the premise of contrasting information versus influence provided unnecessary distraction from the many fascinating issues in communication that it discusses. As demonstrated by many of the authors, the dichotomy is false – both information and influence are important – and this issue was perpetuated by lack of clarity about the levels of analysis. Second, I found the book's organization non-intuitive, and it did not leave me with a clear sense of how the authors' different views related to each other, despite the inclusion of commentaries on some chapters by other authors in the volume. The book would benefit from a summary drawing out the main themes, such as the topics on which the authors disagree and why (e.g. whether information is a useful heuristic at different levels of analysis), and points of agreement and future directions (e.g. the importance of context in communication).

I would recommend the book to readers who already have a solid understanding of the concepts of behavioural ecology and want a stimulus to think about key issues in communication and to explore the literature more broadly. A unique contribution the book makes is its interdisciplinary set of authors: as a newcomer to linguistics and philosophy, I found the chapters on these disciplines to be an interesting taste of these fields' approaches. This thought-provoking book would make for a good semester-long graduate-level seminar: I anticipate that many of its chapters would generate lively discussion among researchers on animal communication.

Jessie Barker

Aarhus Institute of Advanced Studies,
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The sociality-health-fitness nexus in animal societies

Edited by: Peter Kappeler and Charles Nunn

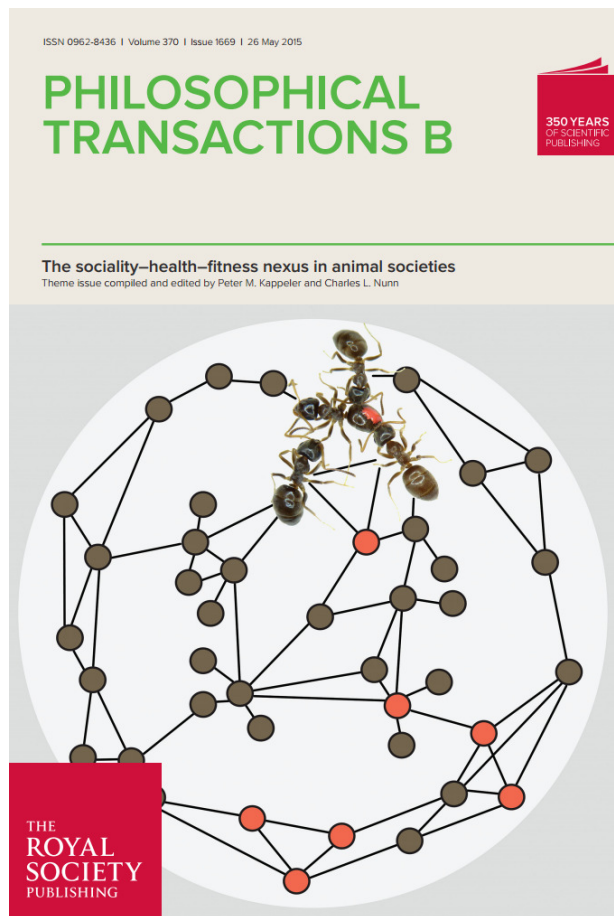
A Theme Issue of The Philosophical Transactions of the Royal Society B Biological Sciences. May 2015; volume 370, issue 1669)

The Philosophical Transactions of the Royal Society B special issue: The sociality-health-fitness nexus in animal societies, presents a much-needed synthesis of how and why social interactions impact reproductive fitness via health. This issue includes contributions from a diverse range of research areas and utilizing a variety of approaches, including behavioral studies of disease transmission, ecological studies of group size and foraging, and endocrinological studies of the individual social environment. Though the contributing projects are diverse, they are presented with one cohesive goal: to elucidate how social interactions at the individual level transfer into long-term fitness.

In the first article, Joel Meunier gives a fascinating review of the social immunity mechanisms present in eusocial, non-eusocial and solitary insects, in the hope of understanding when and why social immunity evolved. Though the relationship between social immunity and fitness in eusocial insects is admittedly difficult to understand due to the division of reproductive output, Meunier concludes that social immunity was not a by-product, but instead a driver of the evolution of group living in insects. In the second article, Mark Schaller, Damian Murray, and Adrian Bangerter, review human biases from an evolutionary perspective in relation to disease risk. The authors review experimental studies of perceived infection risk due environmental stimuli, showing that perceived risk has the power to alter numerous social behaviors.

In the third article, Charles Nunn and colleagues readdress the assumption that risk of infectious disease transmission is a major fitness cost of group living. Their meta-analysis of 43 vertebrate and invertebrate species reveals that as groups get larger, their substructure becomes more defined, acting to ameliorate disease spread between groups. The authors emphasize that group size may not always be an accurate predictor of sociality or disease transmission. In the fourth article, Bobby Habig and Elizabeth Archie explore how the individual social environment influences the costs associated with sociality through the immune system. In a meta-analysis of 77 studies, social status was surprisingly not associated with differences in immunity. However, dominant males consistently showed increased amounts of blood-, gastrointestinal- and ectoparasitism.

Sonia Cavigelli and Michael Caruso also explore the relationship between social status and physiology in



the fifth article of the issue, on social and glucocorticoid (GC) dynamics. Their methods evaluate temporal patterns of glucocorticoid secretion in ways that will be informative as to the functional significance of GC recovery rate (the time to return to baseline concentrations after a physiological challenge). The sixth paper by John Capitanio and Steven Cole utilizes epinephrine and norepinephrine to address the question of how social instability influences health in the rhesus macaque. The sympathetic nervous system is a hugely understudied aspect of physiology likely to play a critical role in mediating the relationship between social environment and mortality.

The seventh article by Louise Hawkey and John Capitanio is a review of human studies that describes not only our physical need for social interaction, but our psychological need to feel socially connected. The pervasiveness of this desire across age-groups prompts future studies regarding perceived social inclusion or isolation in non-human primate species or across different orders to investigate its role in our evolutionary history. In the eighth article, Meggan Craft discusses our lack of knowledge regarding contact and infection patterns in most wildlife and livestock species, and suggests working backwards to create social contact networks using genetic markers of both infectious disease and gut microbiome transmission. In addition to network reconstruction, the use of contact models to predict patterns of disease transmission in livestock and wild animal populations will be critical for informing conservation

and animal production policies. However such models do not incorporate individual behavioral changes in response to exposure, which may be under strong selection.

Moving back to insect societies, the ninth article demonstrates how eusocial insects provide an excellent study system for exploring individual behavioral changes in response to parasite exposure. Fabian Theis and colleagues use the garden ant to study sickness behaviors, hypothesizing that behavioral 'self-removal' of infected ants may explain sickness behaviors in organisms ranging from garden ants to humans. The tenth article attempts to tease apart the factors involved in parasite transmission using social network analysis. Rebecca Rimbach and colleagues find physical contact, and not mere proximity, to be the important mediating factor in parasite transmission, affirming the idea that sociality can be detrimental to health, and that fluid groups, as opposed to structured subgroups, may encourage parasite transmission.

The eleventh article by Colin Chapman and colleagues addresses the dangers that social living may bring for species occurring at low population sizes, such as the endangered Ugandan red colobus monkey. The authors speculate that balancing selection on group size, whereby individuals in larger groups experience immunosuppressive levels of glucocorticoids or increased parasite transmission, may be responsible for consistency in the size of the red colobus population in Kibale National Park. The twelfth and last article in this issue investigates the fitness costs of

ectoparasite load in the female Columbian ground squirrel. An experimental study by Shirley Raveh and colleagues found no relationship between ectoparasite load and multiple measures of fitness, corroborating the increasing evidence of minimal fitness costs to parasite hosts in wild animals through resistance to parasites by coevolution.

Overall, this theme issue will hold the interest of people from a wide array of backgrounds by providing an exceptionally diverse collection of studies, from long-term field research, to human surveys, to meta-analyses, and laboratory experiments. Although the species analyzed seem disparate, the issue creates a comprehensive picture of our current knowledge of sociality, health, and fitness through a ubiquitous emphasis on evolutionary perspectives. From my own perspective, this issue might have benefited from the inclusion of sexual selection as a moderator of patterns of sociality and fitness, such as the functional significance of major histocompatibility complex variation in mate choice and the effects of sexually transmitted disease on mating systems and promiscuity. All the same, I would recommend this theme issue to researchers at all levels, from graduate students to faculty, with interests in the relationships between sociality and fitness, and the proximate mechanisms by which they are linked.

Rachel Petersen
New York University, USA

Cooperative Breeding in Vertebrates: Studies of Ecology, Evolution and Behavior.

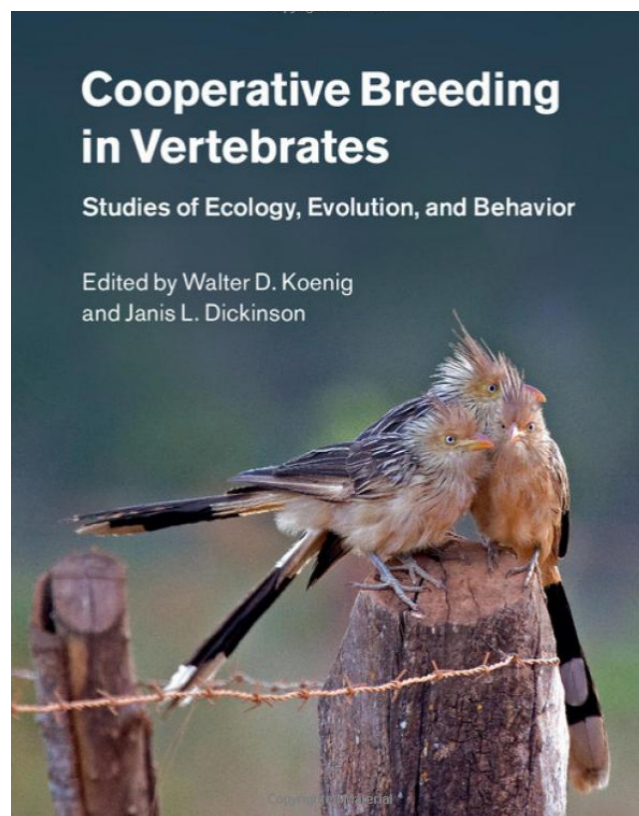
Edited by Walter D. Koenig and Janis L. Dickinson

Cambridge University Press 2016
ISBN 978-1-107-04343-5

I love research that tells a story. And, like any good long-running tv drama, the story is better when you start with just a surface understanding of your characters, but with each new episode small secrets of their background and motivation are revealed. This in some ways parallels studies on cooperative breeding in vertebrates, which typically require long-term investigation and new insights into the underlying mechanisms underpinning the evolution of cooperation are revealed with each new field season. It takes a certain kind of researcher to invest the time and energy into tracking every individual in a population for sometimes decades or more, but the results of that effort culminate in some of the most detailed understanding of individual species within behavioral ecology. That is why, when I received Walt Koenig and Janis Dickinson's newest edited volume on cooperative breeding, I immediately popped open the book and read the intro chapter.

Cooperative breeding has always been a curiosity in ethological research, but became more of a conundrum to understand with the rise of behavioral ecology in the 1960s and 70s, when research shifted to investigating behavior in the evolutionary context of individual selection. How could helping others to breed, while seeming to forgo breeding oneself, be adaptive? Hamilton's early theories on kin selection and inclusive fitness began to set a context for how helping could be an adaptive strategy in some contexts, particularly when the opportunities for direct fitness was lacking but gaining reproductive success through indirect fitness was available. This framework provided testable hypotheses, and thus began some of the classic studies on cooperative behaviour that have become staples of animal behavior texts (Florida scrub jays – Woolfenden & Fitzpatrick 1978; pied kingfishers – Reyer 1980; acorn woodpeckers – Koenig 1981), and resulted in an earlier edited volume dedicated to understanding this phenomenon (Stacey & Koenig 1990). However, as the investigations of new species have proliferated over the past three decades, it appeared that there is a greater diversity of situations and contexts in which helping behavior has evolved than previously known. Hence, the latest in this saga is the research that Koenig and Dickinson have compiled, with each chapter summing the story of a different species. This newest book features both classic and new examples of cooperative breeders, including avian (15 chapters) and mammalian species (3 chapters) and even a chapter on cichlid fish.

The book starts in a unique manner, devoting the first chapters to a species (Siberian jay – Ekman & Griesser) not considered cooperative breeders. They do, however, share attributes seen in many



cooperative systems, that of delayed dispersal and the formation of familial groups. Similarly, the second chapter (Dickinson et al) extends this by showing the advantage of philopatry in group-defense of resources, leading to facultative and reversible helping in western bluebirds. These chapters are then followed by Hatchwell's chapter on long-tailed tits, which exhibit re-directed helping when independent breeding attempts have failed. In such cases, help tends to be re-directed at kin, setting up the classic scenario of 'if you are going to help, you may as well direct that help at those who share your genes'.

What follows is a series of chapters on species that are more consistently cooperative, many of which show patterns that have been thought to promote the evolution of helping behavior: individuals face environmental constraints/limitation on critical resources required for breeding, coupled with intense competition for these resources; this in turn limits potential for dispersal and independent breeding, promoting delayed dispersal (often in one sex); group defense of resources by family groups enhance group success and chances of dominants breeding, but limit opportunities for subordinate group members – typically offspring – to breed independently; some of these offspring then adopt various classes of helping roles, directed preferentially towards offspring with whom they share genes. These broad patterns could be said, to varying extents, to underlie chapters on red-cockaded woodpeckers (Walters and Garcia), Florida scrub-jays (Fitzpatrick and Bowman), southern babblers (Ridley), chestnut-crowned babblers (Russell), superb starlings (Rubenstein), Seychelle's warblers (Komdeur et al.), acorn woodpeckers (Koenig et al.), meerkats (Clutton-Brock & Manser), banded mongoose (Cant et al.) and Darmaland and naked mole-rats (Faulkes & Bennett). However, saying that all these

species follow the same sequential abiotic and biotic circumstances, or that these environmental and social variables have the same underlying influence on why cooperative breeding has likely evolved with each group, would be both superficial and misleading. The subtleties that drives each system can really only be understood by reading the detailed research that underlies the conclusions of each of these chapters, not the kind of 'one-line synopses' afforded in a book review. There are also a number of chapters that show that sociality can evolve without perfectly following the ecological constraints/kin selection hypotheses, such as chapters on carrion crows (Baglione and Canestrari), superb fairy-wrens (Cockburn et al.), bell miners (Wright & McDonald), Taiwan yuhinas (Shen et al.), Guira cuckoos (Macedo), and Cichlid fish (Taborski). Among both these and several of the previously mentioned chapters, you have added nuances of plural breeding, genetic parentage not matching social mating patterns (altering estimates of kin affinity between helpers and young they are provisioning), and in some cases group members not even being closely related. As Koenig, Dickinson and Emlen conclude in the synopsis chapter, this results in perhaps less understanding of a single unifying driver to explain why cooperative behavior evolves than was suggestive with research that went into the earlier edited volume 26 years ago! However, it is fascinating to read the interplay between direct benefits that individuals may accrue and the indirect benefits of providing assistance to varying degrees of genetically-related individuals, and how these may converge in time and space to

provide sufficient evolutionary advantages to consigning oneself to being a subordinate helper (at least temporarily).

As Koenig et al. point out, one advantage of not finding a 'grand synthesis' is that there remains huge opportunity to expand our knowledge of cooperative breeding in these and new species. This book is a great stepping stone for that pursuit, and will not only be an indispensable resource for those in the field, but is also a captivating read for those of us who aren't.

Ken A. Otter

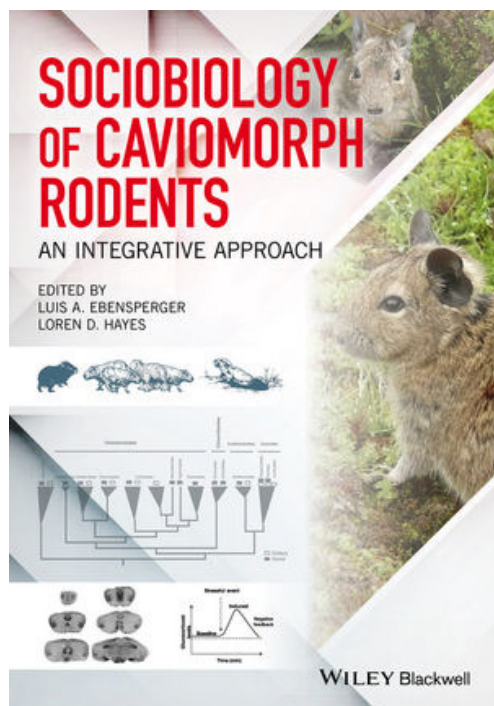
University of Northern British Columbia
British Columbia, Canada

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Sociobiology of Caviomorph Rodents: An Integrative Approach

Edited by: Luis A. Ebensperger & Loren D. Hayes

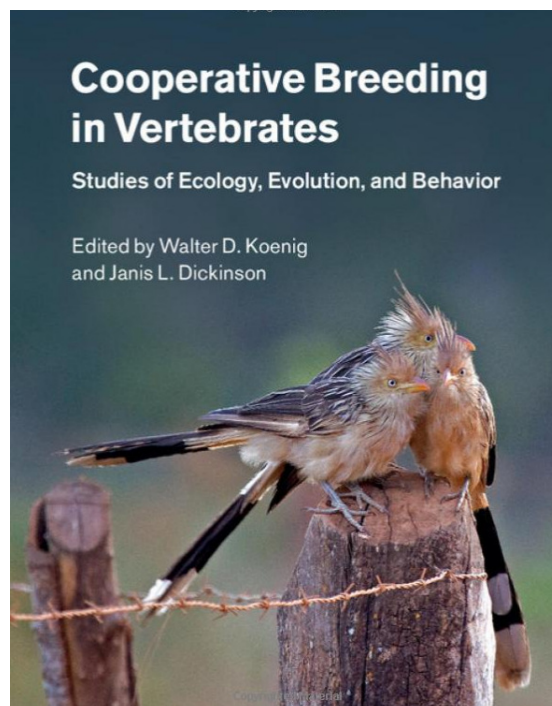
2016. Wiley Blackwell, Hoboken, NJ, USA. \$97.03.
ISBN: 978-1-118-84649-0



Cooperative Breeding in Vertebrates: Studies of Ecology, Evolution, and Behavior

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Cambridge University Press 2016
ISBN 978-1-107-04343-5



In his highly regarded book, *Principles of Social Evolution* (2011), Andrew Bourke treats the origin of societies as a major evolutionary transition characterized by control of conflict and the appearance of castes (in table 1.3). In this author's system, castes define a society as eusocial, "with an appreciable reproductive division of labour, irreversible or not" (in box 1.1). Eusocial societies with totipotent individuals, are sometimes referred to as "primitively" eusocial (Wilson 1971), and Bourke points out (*loc. cit.*) that cooperatively breeding vertebrate societies resemble (reversible) eusocial societies "because any level of reproductive division of labor implies a degree of altruism" (*loc. cit.*). In my own work, I follow Bourke's terminology (Jones 2014), in addition to his use of Hamilton's (1964) schema limiting animal (including, human) behavior to four categories (selfish, cooperative, altruistic, and spite, Table 1 this review). In Hamilton's system, then, "social" behavior is confined to *cooperative* or *altruistic* interactions between (usually) conspecifics, measured according to differential reproductive costs or benefits to Actor and Recipient.

In *Sociobiology of Caviomorph Rodents*, Ebensperger and Hayes have performed a service by summarizing a
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speciose and diverse group of primarily South American rodents (Patterson & Upham 2014) characterized by twelve families of which ~75% include one or more social species (including, capybaras, tuco-tucos, caviés, maras, viscachas, and chinchillas). Since at least 1998, Ebensperger has advocated for the use of hystricognath rodents as a model of social evolution, and the book under review reinforces that message documented in several chapters devoted to the wide range of caviomorph sociosexual behaviors and structures (Chapters 1, 2, 7-11). Additional chapters review caviomorph neurobiology, genetics, communication, and fitness effects, presenting a comprehensive, "integrative" approach to the group, while, in the final chapter (Chapter 13) the editors synthesize what we know and need to know, in their opinion, about caviomorph sociality.

Sociobiology of Caviomorph Rodents will appeal to specialists wishing to broaden their knowledge of social taxa as well as to students interested in identifying stimulating and important research topics upon which to base a dissertation or a career. Furthermore, the potential for comparative studies is documented by similarities in certain traits between some caviomorph

Table 1. This table presents Hamilton's schema depicting hypothetical outcomes of interactions between two (usually conspecific) individuals (a "dyad"), including, predicted reproductive tradeoffs (often measured as # offspring). A "selfish" state is presumed to be original and fundamental since selection acts on individual genotypes and since assisting ego's own reproduction should benefit an individual more than benefiting another individual's reproduction (an individual is always related to itself by 1.00). It follows that "cooperation" and "altruism" have evolved where a "selfish" strategy cannot do its best. By definition, "cooperation" and "altruism" require Actor ("ego") to restrain or compromise some measure of its "fitness budget" by donating some measure of reproduction to a Recipient. In the case of "spite," both Actor and Recipient lose reproductive benefits as a result of one or more interactions.

	BENEFITS OR COSTS TO ACTOR	BENEFITS OR COSTS TO RECIPIENT
SELFISH	+	-
COOPERATIVE	+	+
ALTRUISTIC	-	+
SPITEFUL	-	-

species and voles. Unfortunately, readers will need to be tolerant of the volume's limitations such as the authors' failure to cite more than a few references after 2012, frequent repetitions, some annoying grammatical errors, too many instances of researchers relying upon personal opinion and qualitative statements rather than inferences based on measurements. Also, investigators studying caviomorph social biology seem to have a penchant for attributing group-living in this infraorder to predation pressure, a factor that some specialists consider a common cause of group-formation but not group-maintenance. Likewise, most of the authors in this text use group size as a proxy for social behavior, a problematic assumption seemingly resulting from defining "social" as group-living whereby larger groups would exhibit a greater number of interindividual interactions. As Rubenstein et al. (2016) show, however, the evolution of sociality relative to (female) group size is taxon-specific and rule-governed. Finally, and of significant concern, where Hamilton's general rule is discussed at all, statements appear naïve at best and, in some cases, incorrect (e.g., pages 307 and 311). This text is, nonetheless, recommended as a point of entry to a group of rodents with significant research potential. Indeed, rodents are the largest Order of Mammals; however, our knowledge of their social biology is limited compared to that of primates and carnivores, Orders with a noteworthy proportion of social species.

In *Cooperative Breeding in Vertebrates*, cooperative breeding is broadly defined as "breeding associations with three or more individuals collectively raising young in a single brood or litter" (Introduction). As a result, the book covers a wide range of taxa, behaviors, and structures. Koenig and Dickinson chose 19 species to illustrate their topic, 15 of these chapters covering birds, 1, fish, and 3 reports on cooperatively-breeding mammals. The final, summary chapter by the Editors is noteworthy because of Figure 20.3 and Table 20.1. In addition to the fact that the descriptive studies are fascinating and informative, they are examples of the high standards which field natural history can attain. Authors, many with international reputations, have not only keenly observed relevant behavioral and structural details of their systems, but, relying, primarily, on verbal, rather than, quantitative, models, interpret their results with an appreciation for hypothesis-testing. For the most part, researchers rely on descriptive statistics to illustrate their subjects and

associated traits, though a few studies incorporate genetic analyses as tentative tests of "kin selection" theory.

Because the species described in this text range from delayed dispersal with no cooperative care (Siberian jays), to "marginal" cooperative breeders (western bluebirds), to simple conformations with single-pair breeders (superb fairy wrens) and their "helpers," to complex societies incorporating plural breeders (superb starlings), the book can be read in a way that reveals patterns related to the evolution of cooperative breeding and possible causal factors (e.g., distribution and abundance of limiting resources, environmental heterogeneity, group size and composition, population demography, predation). Finally, throughout the text, promising topics for investigation are indicated, such as, Why does "helping" by males appear to be common (e.g., superb fairy wrens, chestnut-crowned babblers, bell miners, banded mongooses), and are its causal factors different than those for female "helpers"? Also, one is curious about "kidnapping" behavior in banded mongooses and whether it might be induced by social parasitism or, perhaps, is a precursor to "slavemaking" as is the case in some social insects?

Apparently, none of the research programs in either of the books under review utilizes multivariate analyses in an attempt to assess causality or agent-based modeling to conduct quantitative tests of hypotheses (but, see Chapters 3 and 18); thus, for the most part, inferences remain speculative. Furthermore, it is not clear from the discussion of methods in most chapters whether animals were marked, whether focal-animal observational procedures were employed (preferably with a randomized baseline), and in what ways field experiments were conducted. Virtually every chapter in both books under review end their reports by calling for more research to document variability of target phenomena, implying that it is premature to search for general principles within and between taxa, even though some of these studies have proceeded for decades. As the paper by Rubenstein et al. (2016) demonstrates, however, analyses based on central tendencies can expose straightforward rules upon which complex phenomena depend. Weinrich et al. (2006) demonstrated that there exists a limited number of solutions to any evolutionary question which would include the problems inherent to Social Biology. *Sociobiology of Caviomorph Rodents* and

Cooperative Breeding in Vertebrates deserve serious inspection by students of sociality, animal behavior, and behavioral ecology. However, conventional Natural History might benefit from the incorporation of more rigorous methods and the application of quantitative procedures.

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THE PITELKA AWARD

The Frank A. Pitelka Award for Excellence in Research, was established in 1996 and is administered through the ISBE. It is given to young researchers that are the sole or first author of an article in Behavioral Ecology. Past president Gunilla Rosenqvist announced the winner of the Pitelka Award for 2014/15 at the ISBE conference in Exeter.

The winner was Alejandro Rico-Guevara, who was awarded the prize for the paper:

Rico-Guevara A, Araya-Salas M. 2015. Bills as daggers? A test for sexually dimorphic weapons in a lekking hummingbird. *Behav Ecol.* 26:21-29.

Alejandro's paper also made the front page of Behavioral Ecology vol 26 (1).



Two males display during an escalating fight



Alejandro filming hummingbirds

PhD POSITIONS IN BEHAVIOURAL EVOLUTION

Exciting opportunities to participate in research aimed at discovering unconventional routes to adaptation.

We seek up to three highly motivated PhD students to join a research program focused on the causal dynamics of behavioral evolution. Fully-sponsored opportunities exist for domestic Australian and international candidates in the context of two broader projects:

1. Thermal preference across life stages in the Queensland fruit fly

In Australia, the Sterile Insect Technique (SIT) has recently been engaged to control the horticultural pest *Bactrocera tryoni* ("Q-fly"). SIT offers a sustainable control measure provided that released (sterile) stock are viable and competitive under natural conditions. However, Q-flies adapt rapidly to captive environments, leading to phenotypes that are ill-equipped for the wild and inefficient as SIT agents. Our research aims to understand the evolutionary-genetic basis of thermal preference, and how this integrates with key life history traits in the context of Q-fly domestication.

We offer a PhD position for research commensurate with this goal. The candidate may focus on behavior, genetics or physiology of thermal preference, and would ideally integrate several themes. Approaches are expected to include Behavioral experiments, artificial selection and/or experimental evolution, with abundant opportunity to integrate with genomic research. Supervision will be provided by Dr. Darrell Kemp and Dr. Kate Lynch.

This project is part of a \$20.5 million 'SIT-Plus' collaboration that aims to develop a detailed understanding of Q-fly biology as a foundation for effective, environmentally benign and sustainable pest management. This spans Macquarie University, the Commonwealth Scientific & Industrial Research Organization (CSIRO), the New South Wales Department of Primary Industries (DPI), the South Australia Research Development Institution (SARDI) and others. Collectively, these institutions offer vast expertise and research capacity and the candidate can expect excellent supervision, collaborative opportunities, facilities and research support.

2. The evolutionary dynamics of boldness behavior in guppies (*Poecilia reticulata*)

This project arises from a joint ARC/NSF funded collaboration between Macquarie University and the University of California, Riverside. Our purpose is to understand how interactions among environmental, genetic and epi-genetic factors may drive evolution in non-conventional ways. We will interrogate this using guppies (*Poecilia reticulata*), a small tropical fish with a rich heritage in evolutionary biology. Key to this project is the ability to connect laboratory insights with realized adaptive trajectories in wild experimental populations.

We seek two PhD candidates for distinctive research within this program. Projects may focus on features of behavior per-se, such as personality traits, or how behavior interacts with life history or morphological features such as color ornamentation. We particularly encourage applicants with interests in Behavioral and/or evolutionary genetics. The supervisory committee will consist of Dr. Darrell Kemp and Dr. Kate Lynch (Macquarie) and Prof. David Reznick (UC Riverside). Collectively, we possess substantial expertise in behavior, life history and evolutionary genetics, ensuring strong intellectual support. This program also offers the potential for internships at UC Riverside and/or travel to experimental streams in Trinidad; see: <http://cnas.ucr.edu/guppy/>.

The research environment

All candidates will be based at Macquarie University, a major research institution located in Sydney's northern high-technology corridor. The Department of Biological Sciences employs around 40 Faculty and has core strengths in behavior, ecology and evolution. This is an intellectually stimulating environment with a vibrant community comprising over 100 graduate students.

Tenure and salary rates

Full time candidature for all positions will ideally commence in late 2016 or early 2017. The salary range is \$26,288 - \$30,849 pa (tax-free and indexed annually) for 3 years, plus a stipend covering all tuition fees. Macquarie also provides generous support for research and conference travel, and there are abundant opportunities to supplement income via undergraduate teaching scholarships.

Requests for information and/or expressions of interest should be emailed directly to Dr. Kemp prior to 15th October 2016. Please include a CV, brief statements of past experience and future research interests, including copies of any research outputs.

Refer to the following links for information specific to Macquarie University PhD entry criteria, pathways, and application procedures:

www.hdr.mq.edu.au/information_about/research_degrees/applications/entry_criteria

www.hdr.mq.edu.au/information_about/applications

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POSITIONS AT THE UNIVERSITY OF MINNESOTA

The *College of Biological Sciences* (CBS) at the *University of Minnesota* (UMN) is hiring one tenure-track faculty in the area of Animal Physiology and one teaching-track faculty in the area of Physiology Education. Positions are 9-month appointments starting the fall of 2017. Major responsibilities include varying levels of research, teaching, and service to the University, depending on the position.

Tenure-track position at the Department of Ecology, Evolution, and Behavior.

We welcome applications from organismal biologists conducting integrative and/or comparative research in any area of animal physiology related to the behavior, evolution, or ecology of either vertebrate or invertebrate animals. We seek outstanding applicants whose research spans two or more of the department's disciplinary strengths in behavior, evolution, and ecology. We are especially interested in applicants whose research program would also establish natural bridges to other scientists on campus who conduct research in various areas of organismal biology (e.g., neurobiology, sensory biology, developmental biology, and endocrinology, among others). Primary teaching responsibilities will include a large-enrollment course in animal physiology taught in an active-learning classroom and an upper-division course in the applicant's area of expertise.

Teaching-track position at the Department of Biology Teaching and Learning.

The primary role of this Teaching Assistant Professor in Physiology Education position is to provide high-quality undergraduate instruction in physiology, and to work

as a team member on improving the undergraduate curriculum in physiological biology. The successful applicant will employ innovative, evidence-based teaching that advances the undergraduate teaching mission of the College of Biological Sciences (CBS) and the University of Minnesota. The position is teaching-intensive, with expectation of contributions to scholarship and service, including participating in research related to biology teaching and learning and providing guidance to colleagues in areas of the Teaching Assistant Professor's expertise. Candidates must have a suitable background in physiology that complements existing strengths in the Department and teach in those areas.

Visit the college's hiring website for detailed information about these two positions
<http://z.umn.edu/cbsfacultyhiring>
Evaluation of applications will begin Nov 15, 2016.

Successful candidates require a PhD in Physiology or related field, post-doctoral experience, expertise that complements current faculty, demonstrated commitment to graduate and undergraduate education, evidence of commitment to equity and diversity, and teaching experience.

Find out what makes Minnesota a great place to work and live! Learn more about the College of Biological Sciences the University of Minnesota and the Twin Cities here:

<http://cbs.umn.edu/>
<http://twin-cities.umn.edu/>
<http://wishyouwerehere.umn.edu/>

POSITION IN KENTUCKY

Pedagogical Assistant Professor of Biology at W K U

Job Description

The Department of Biology at Western Kentucky University invites applications for a nine-month, tenure-track appointment as Pedagogical Assistant Professor specializing in engaged learning. Teaching responsibilities include the development and instruction of innovative, inquiry-based lectures and laboratories at the freshman and/or sophomore levels, including high-achieving students such as those from The Gatton Academy of Mathematics and Science and the WKU Honors College. The successful candidate will play a leading role in advancing instruction in our department by developing and coordinating engaged learning initiatives, will train and supervise student teaching assistants, and may teach upper-level courses in his/her area of specialty. We expect excellence in teaching, commitment to effective teaching methods, and pursuit of extramural funding to support instructional improvement as needed. Participation in departmental and university service is expected. Pedagogical faculty are not required to conduct research. For expectations of pedagogical faculty, see:

www.wku.edu/academicaffairs/documents/master-wku-faculty-handbook-22nd-edition.pdf

Requirements:

- PhD in Biology or related life sciences field
- Formal, college-level teaching experience as instructor of record, including process-oriented, guided inquiry or similar pedagogical strategies.

Application Instructions:

The following items must be submitted through this electronic talent management system by October 16th, 2016, although expressions of interest may be considered until the position is filled:

- Letter of Intent
- Curriculum Vitae
- Unofficial Transcripts
- Statement of Teaching Experience, Interest, and Philosophy

Names and contact information of three reference providers will be collected during the application process. The references provided should be able to speak to your teaching experience and skill. Reference letters will be requested by the Search Committee through an online process at a later date.

The anticipated start date for the candidate selected will be August 15th, 2017.

Applicants will receive email confirmation once the application process has been successfully completed.

Applicants may email biology@wku.edu with questions about the job or about the Department.

For more information, see:
<https://wku.interviewexchange.com/jobofferdetails.jsp?JOBID=76593>

Bruce A. Schulte
Western Kentucky University, USA

CALL FOR MINISYMPOSIA

Mathematical Models in Ecology and Evolution

City, University of London is proud to announce that it will be hosting the 6th conference in the bi-annual series on Mathematical Models in Ecology and Evolution: 10-12 July 2017

Mathematical Modelling plays a central and increasingly important role in ecology and evolution. The object of this conference is to showcase the latest developments of mathematical models in ecology and evolution and to demonstrate its important role to a new generation of researchers.

Following the same programme structure as the last conference in Paris, this conference will feature a range of sessions with submitted talks and minisymposia.

The Organising Committee are now welcoming submissions for minisymposia. Submissions should be no more than 250 words and should include a topic

title, along with a description and a list of up to five speakers who will be giving presentations.

Submissions should be made using the online submission form by 1st December 2016. They should include a title, description and suggested list of speakers and should be no more than 250 words in total.

15th March 2017 is the submission deadline for talk or poster abstracts of no more than 150 words. Online submissions for abstracts will open on 15th January 2017. Early bird registration will close on June 1, 2017

More information on this website;
<https://www.city.ac.uk/MMEE2017>

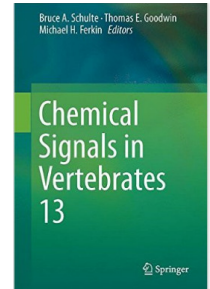
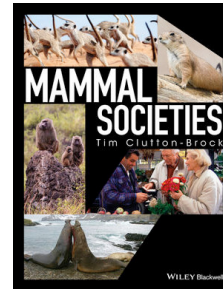
Mark Broom
City, University of London, UK

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 the review is Feb 28, 2017.

Mammal Societies by Clutton-Brock. Wiley-Blackwell, 2016

Chemical Signals in Vertebrates 13 by Schulte, Goodwin & Ferkin. Springer, 2016.



The following titles are available for review from Oxford University Press

Title	Author
Behavioral Ecology of the Eastern Red-backed Salamander (2016)	Jaeger et al.
Reptile Ecology and Conservation (2016)	Dodd
Charles Darwin's Life With Birds: His Complete Ornithology (2016)	Frith
Social: Why Our Brains Are Wired to Connect (2015)	Lieberman
One Plus One Equals One: Symbiosis and the evolution of complex life Mutualism (2015)	Archibald Bronstein
Cultural Evolution: Conceptual Challenges (2015)	Lewens
Gaining Control: How human behavior evolved (2015)	Aunger & Curtis
Ecological Statistics (2015)	Fox et al.
Animal Behavior: Concepts, Methods, and Applications (2015)	Nordell & Valone
Natural History of Crustacea 2: Lifestyles and Feeding Biology (2015)	Thiel & Watling
Can Animals Be Moral? (2015)	Rowlands
Dog Behaviour, Evolution, and Cognition 2e (2015)	Miklosi
Plant Behaviour and Intelligence (2014)	Trewavas
Quantitative Genetics in the Wild (2014)	Charmantier, Garant, & Kruuk
Shallow Subterranean Habitats (2014)	Culver & Pipan
The Evolution of Insect Mating Systems (2014)	Shuker & Simmons
The Evolution of Sex Determination (2014)	Beukeboom & Perrin

The following titles are available for review from Cambridge University Press

Title	Author
Conservation Behavior: applying behavioral ecology to wildlife conservation & management	Berger-Tal & Saltz
Demography and Evolutionary Ecology of Hadza Hunter-Gatherers (2016)	Blurton Jones
Mahale Chimpanzees (2015)	Nakamura et al.
Escaping from Predators (2015)	Cooper & Blumstein
The Evolution of Human Sociability: Desires, fears, sex and society (2015)	Vannelli
The Mandrill: A case of extreme sexual selection (2015)	Dixson
Behavioral Genetics of the Mouse 2 Models of Neurobehavioral Disorders (2014)	Pietro Paolo & Sluyter
Bioarchaeological and Forensic Perspectives on Violence (2014)	Martin & Anderson
Causes and Consequences of Human Migration an devolutionary perspective (2014)	Crawford & Campbell
Cephalopod Cognition (2014)	Darmaillacq & Dickel
Extractive Industries and Ape Conservation (2014)	Arcus Foundation
How the Snake Lost its Legs (2014)	Held, Jr
Marmot Biology (2014)	Armitage
Passive Acoustic Monitoring of Cetaceans (2014)	Zimmer
Pheromones and Animal Behavior (2014)	Wyatt
Primate Tourism (2014)	Russon & Wallis
The Boreal Owl (2014)	Korpimäki & Hakkarainen
The Foragers of Point Hope (2014)	Hilton & Auerbach
Tool Use in Animals : Cognition and Ecology (2014)	Sanz & Call
Understanding Evolution (2014)	Kampourakis
Wild Cultures : A Comparison between Chimpanzee and Human Cultures (2014)	Boesch

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