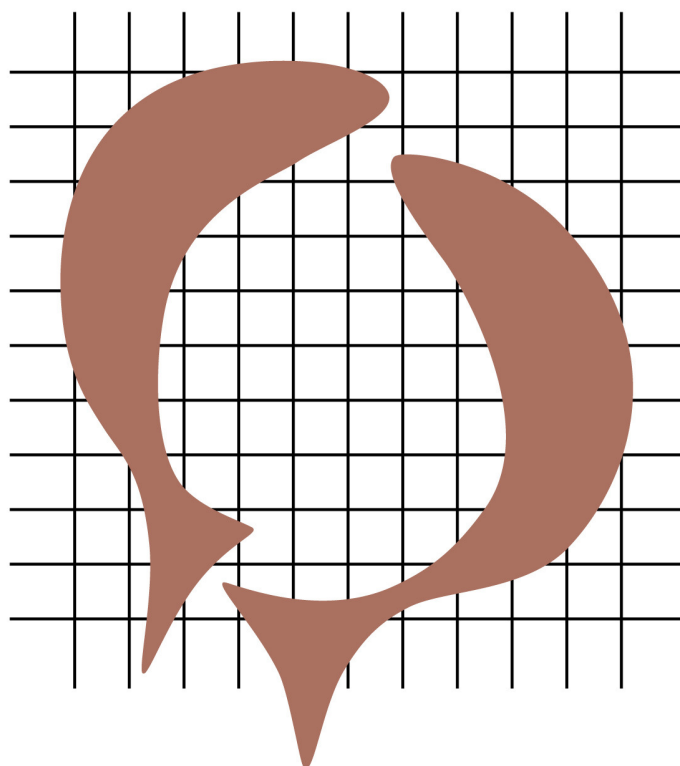


NVG NEWSLETTER
22th year no. 1, June 2013

Nederlandse Vereniging voor
Gedragsbiologie

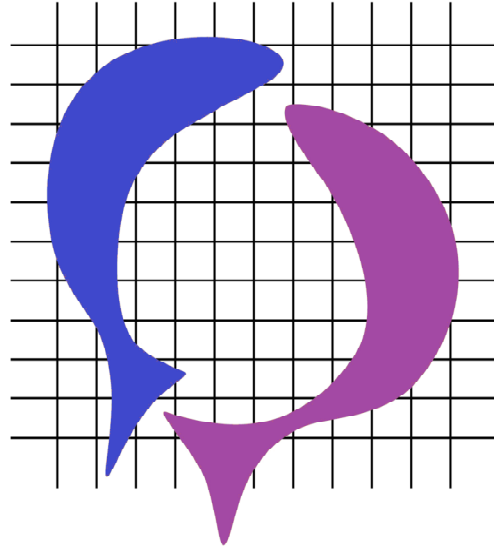


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NETHERLANDS SOCIETY FOR BEHAVIOURAL BIOLOGY

The Netherlands Society for Behavioural Biology aims at strengthening behavioural biology in the Netherlands and the direct surroundings. We strive for top quality in all of the behavioural sciences with respect to teaching, research, and public debate. The society organizes a yearly meeting and distributes this biannual newsletter.



Council members:

Prof. Dr. Simon Verhulst (Chair)
Dr. Ir. Bas Rodenburg (Secretary)
Prof. Dr. Marcel Eens (Belgium)
Dr. Kees van Oers (PhD workshop)
Dr. Liesbeth Bolhuis (Treasurer)
Dr. Martine Maan (NVG-meeting)
Dr. Hans Slabbekoorn (Newsletter)

More information available at:
<http://www.gedragbiologie.nl>

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Membership fee: € 25,- per year
for (PhD-)students and biologists in-
between-jobs. Others: € 30,-.

Contributions newsletter:

Dr. Hans Slabbekoorn

Phone: 00 31 71 527 5049

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Editorial Preface

We have confirmations from four excellent international speakers for this years' NVG-meeting in Soesterberg. Two are women, two are men. I hope they will indeed come, that there will be great contributions from women and men from within our community, and that we continue to realize that gender does not matter when it comes to the quality of science, but that also in our field it requires continued efforts from both men and women to get a more balanced representation of the sexes at meetings. **The editor: Hans Slabbekoorn**

SOESTERBERG



~ **Announcement for the next NVG-meeting at the Kontakt der Kontinenten.**



The 21st NVG meeting will be held from Wednesday 27th to Friday 29th of November 2013 in conference hotel 'Kontakt der Kontinenten' in Soesterberg, The Netherlands. (www.kontaktderkontinenten.nl) Registration will open in September. On Wednesday evening, after the PhD workshop (see below), the meeting will start with the 'Brill Baerends Lecture'*. The lecture will be by **Jaques Balthazart** (Université de Liège). He will talk about his work on the neuroendocrine and neurobiological bases of complex behaviours, using steroid-dependent male sexual behaviours as a model system.



There are three other confirmed international speakers: **Georgia Mason** (University of Guelph) will talk

about her studies on how long-term housing conditions affect the welfare, behaviour and brain functioning of lab, farm and zoo animals. She has a particular interest in species differences and the effects of early experience.



Piter Bijma (University of Wageningen) will talk about the genetic basis of variation in animal

behaviour, with a particular focus on livestock species such as pigs and chickens. **Ulrika**



Candolin (University of Helsinki) will

talk about her work on behavioural responses to human-induced environmental change in sticklebacks.

As usual, the annual meeting will be preceded by a workshop for starting PhD-students on Wednesday 27th of November. This workshop is organised by Kees van Oers (k.vanoers@nioo.knaw.nl) and focuses on methodological issues in behavioural biology. The workshop will consist of a guest speaker and several PhD students who will present work from their research projects. Ample time for discussion is planned in. All PhD students in behavioural biology are invited to attend!

Please mark the dates and spread the word, by sending this link to any

behavioural biologists that you think should attend:

<http://www.gedragbiologie.nl/Soesterberg2013>

See you at our 21th meeting!

Martine Maan & Kees van Oers

*** Brill sponsors the Baerends lecture**

It is with pleasure that the board of the NVG announces that we reached an agreement with publishing house Brill to sponsor the Baerends lecture at our annual conference. Brill



publishes the journal *Behaviour*, one of the leading international journals in behavioural biology. Prof. G.P.

Baerends was the editor of *Behaviour* for many years, and it is therefore fitting that the lecture will be re-named "Brill – Baerends lecture". The agreement is initially for three years (2013-2015) and will cover a substantial proportion of the costs of the lecture.



The Benelux section of the **International Society for Applied Ethology** will organize a regional

conference this year. This one-day event will be held on the **10th October** at the Pig Innovation Centre in Sterksel, the Netherlands (chosen for its central position in the region, see www.vicsterksel.nl).

The meeting will focus on oral presentations, although posters will be allowed at authors' own request. Abstracts concerning studies on behaviour or welfare of farm, laboratory, companion or zoo animals can be sent to benelux.isae@gmail.com until the 6th of September. Visit the Benelux page on the ISAE website (<http://www.applied-ethology.org/benelux.html>) for full details on abstract submission and registration.



International Conference on Individual Differences

(20th KNDV Zoology Conference)

1-3 November 2013

Groningen, The Netherlands

This meeting aims to bring together different perspectives on the importance, mechanisms, function and evolution of consistent individual differences at different levels of biological organisation. Program runs from Friday November 1st (welcome reception and opening lecture) to Sunday November 3rd. Plenary speakers are Stephen Suomi (National Institute of Child Health & Human Development); Renee Duckworth (University of Arizona); Jonathan Seckl (University of Edinburgh); The Distinguished Zoologist Lecture will be by Judy Stamps (University of California at Davis).

In addition to the plenary lectures, there will be oral and poster contributions in the following seven symposia, that will be introduced by invited keynote speakers: 1) Individuality in neurobiology - *James Goodson*, Bloomington, USA; 2) Individuality in chronobiology - *Martha Merrow*, Muenchen, D; 3) Individuality in energetics - *Neil Metcalfe*, Glasgow, UK; 4) Individuality in behaviour - *Niels Dingemanse*; 5) Individuality in ecology, evolution and biodiversity - *Ilkka Hanski*, Helsinki, Fi; 6) Individuality in aging - *Jean Michel Gaillard*, Lyon, Fr; 7) Individuality: applications and implications (welfare, biomedicine and conservation) - *Mike Mendl*, Bristol, UK.

There is also the possibility to contribute oral and poster contributions to a general symposium. Abstracts need to be submitted before August 1st to indiv@rug.nl. For more information about abstract preparation and submission see: www.rug.nl/fwn/indiv. Deadline for discounted registration fee: 31 August 2013. The organization is done by the Groningen Centres for Behaviour and Neurosciences (www.rug.nl/research/cbn) and Ecological and Evolutionary Studies (www.rug.nl/research/cees/), under the auspices of the Royal Dutch Zoological Society (kndv.science.ru.nl).



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 groningen



Organising & scientific committee:
 Ton Groothuis (Chair); Sietse de Boer; Christiaan Both;

Gertjan van Dijk; Marlies Hof; Roelof Hut; Martine Maan; Jaap Koolhaas; Peter Korsten; Pleunie Kraak; Simon Verhulst; Franjo Weissing; Eddy van der Zee; and the Groningen Congress Bureau.



4 – 8 AUGUST 2013
NEWCASTLEGATESHEAD, UK

International Ethological Conference
Association for the Study of Animal
Behaviour

Behaviour 2013 is a joint meeting of the 33rd International Ethological Conference (IEC) and the Association for the Study of Animal Behaviour (ASAB). The conference will be held at The Sage Gateshead, Newcastle Gateshead, England between **4th and 8th August 2013**.

The conference will be the largest gathering of researchers working in the field of animal behaviour in 2013. Participants will be addressing all of Tinbergen's four questions, including function (behavioural ecology), mechanism (cognition, neuroethology), development and phylogeny (both with pure and applied research). The organizers especially welcome work at the intersection of disciplines such as 'EvoDevo' and 'EvoMech' research.



"Darwins Dating show: Wie kies je als partner en wie zorgt voor het kroost?" by: Johan van Rhijn - Veen Media, Diemen 2013, 228 pp, ISBN 9789085713494
Author: www.johanvanrhijn.nl
Publisher: www.veenmedia.nl

'Darwins dating show' is a popular science book on sexual selection, mate choice and the evolution of parental care. The author is no stranger to NVG members; they will know Johan van Rhijn as researcher in the field, as editor of Behaviour or as dedicated teacher at the Open University. His brand-new book brings all his talents as well as his biography together. Although the book



is written for a more popular audience, experts in the field (especially if they work in the Netherlands!) who are interested in Dutch Behavioural Biology will walk away with interesting pieces of information on names, places, field

sites and the never ending crossroads of life and research.

The book starts with a general introduction on the history and theory of sexual selection to then quickly move on to the core part of book with sections on the Dutch research on ruffs and gulls from the 60's to the mid 80's. While these sections zoom in on specific systems with very different mating systems, afterwards the book also addresses the field at large by looking at parental care and mate choice across a variety of taxa, including humans (but always with a main emphasis on birds).



The section on the ruffs was the most fascinating to me: imagine Johan amongst the ruffs (in a self-built hut) before anyone knew about the concept of alternative behavioural strategies and the concept of ESS. It is fascinating to read how the initial work on ruffs that are now a textbook example of sexual selection took place without anyone being aware of their behavioural strategies and lekking system. The author's frank descriptions of the many detours that were needed to unravel the facts and finding empirical support for newly emerging theory not only reads reassuringly familiar but also provides an interesting window on the early days of behavioural biology (or ethology as it was known at the time).

The next section of the book that covers the author's later work with various gull species is just as interesting. Here, one learns about (or recognises) the trouble of studying indistinguishable individuals before individual tagging methods were established but also how a good and well-trained observer of animal behaviour, if putting in the hours, will always come away with important new insights.

While the first half of the book unfold important biological theory step by step, often in chronological order of their discovery, the second half of the book combines a broad overview on mate choice and parental care across taxa with some interesting off-mainstream ideas on the evolution of parental care.

I enjoyed reading the book – many researchers, NVG members and conference visitors I know popped in and out of the story line, isolated facts on various of the earlier Dutch research lines were falling into place for a 'newcomer' like me... (given the time span of the book). But these are sidelines, the book really is the birds' show – it presents a colourful kaleidoscope of their advertising and searching for, choosing of and propagating and parenting with a partner!

Katharina Riebel, Leiden University



**Postdoc in Neuroscience
(38 hours per week, 3
years contract) Vacancy
13-209**

The Institute of Biology (IBL), part of the Faculty of Science at Leiden University is looking for a researcher with excellent qualifications,

- who can link animal behaviour to processes at the neural, physiological or molecular level;
- who works on topics such as behavioural neuroscience, molecular neuroscience, neurogenomics, developmental neurobiology or stress research;
- who can connect to, and support, current research interests and model organisms within the IBL, in particular zebra fish or zebra finch with a comparative perspective;
- who will contribute to the teaching program at BSc and MSc levels in the area of neurobiology and animal physiology.

Information

Prof. dr. Carel ten Cate (e-mail: c.j.ten.cate@biology.leidenuniv.nl) – phone +31-71-527 5040

For more information about employment at Leiden University, visit: www.staff.leiden.edu.

Additionally, you can visit the websites of the Faculty of Science and IBL: www.science.leidenuniv.nl and www.biology.leidenuniv.nl.

Applications

Written applications, referring to the vacancy # and including the names and addresses of at least three persons who have agreed to be contacted for references, should be submitted **before**

the 15th of August, via email, to: Mrs. S. Wijfjes-Chang:
Sylvius@biology.leidenuniv.nl

WEB ALERT



~ website suggestions by a colleague with information relevant to our community.



Low visibility of female scientists at evolution conferences

By Hannah Dugdale

Researchers from the University of Groningen, and colleagues have shown that women are underrepresented as invited speakers at evolutionary biology symposia.



The study, published in the *Journal of Evolutionary Biology*, was lead by Dr Julia Schroeder (on the right) at the Max Planck Institute for

Ornithology in Germany, and Dr Hannah Dugdale (on the left) at the University of Sheffield in the UK, and the University of Groningen.

They found that over six congresses of the European Society for Evolutionary Biology, only 16% of invited symposia speakers were women.



At first glance, this is not surprising given that there are fewer women in senior academic positions. However, even after accounting for this, there were fewer women than expected (compared to sex ratios of faculty at the World top-10 Universities for Life Sciences, and first authors in top-tier journals).

So, why are there fewer female invited speakers?

At ESEB 2011, this was because 50% of invited women declined to speak compared to 26% of invited men. Julia and Hannah are currently investigating whether this finding occurs more widely. If so, understanding the reasons behind why more women than men declined talks is vital, so that this underrepresentation can be addressed.

But why is this important?

This work shows that high-quality scientific research by women is less visible than that of men. This means that aspiring scientists are exposed to fewer female role models, in an already male biased field. Overall, this could constrain the field of evolutionary biology from reaching its full potential. It is therefore important that scientists and

students are aware of this phenomenon and that measures based on sound data can be implemented to address this bias.

RELATED WEBSITES:

<http://news.sciencemag.org/scienceinsider/2013/06/study-finds-women-biologists-mor.html>

<http://www.the-scientist.com/?articles.view/articleNo/18708/title/Women-Scientists-Stress-Need-For-Visibility-At-Conferences/>



FINANCIAL SUPPORT OPPORTUNITY FOR MEETINGS AND SYMPOSIA IN BEHAVIOURAL BIOLOGY

AIM: The NVG wants to support small events with financial contributions if they yield a significant spread of interest, increase the understanding, or stimulate research ideas and collaborations in Behavioural Biology in the Netherlands or Flanders.

Guidelines follow below for applying and receiving financial support from the NVG for Behavioural Biology events (as approved by the board on the 29th of June, 2012).

Budget & Decision Process:

- 1) A total of maximally €750 is available per budget year (Adjustments can only be determined at the annual meeting);
- 2) The possibility of support is advertised at the annual meeting and in the newsletter;
- 3) A board majority is required to award a support request;
- 4) Board members involved in a request are excluded from the decision making process;
- 5) Support decisions are communicated through a letter from the treasurer.

Eligibility & Applications:

- 1) Only NVG-members can apply;
- 2) Support requests need to be submitted at least six weeks before the event;
- 3) The application involves a brief explanation of how the event matches our aim;
- 4) The application should include a budget with costs, benefits and other co-sponsors.

Obligations & Reimbursement:

- 1) The applicant is obliged to inform NVG-members at least two weeks in advance about the NVG-supported event;
- 2) The applicant is obliged to write a brief report for the next newsletter about the event;
- 3) Payment takes place after the event, based on actual receipts, and after having received a newsletter report;
- 4) All documents will be provided to the audit committee for the annual financial report.

THESIS DEFENSE



~ Recently defended PhD-theses on animal behaviour. Target is to provide some background and to highlight an interesting finding in a single figure.



Aniek Ivens from the University of Groningen defended her thesis '*The evolutionary ecology of mutualism*' on the 23rd of November 2012. This PhD-research was conducted in close collaboration with the University of Copenhagen, Denmark.

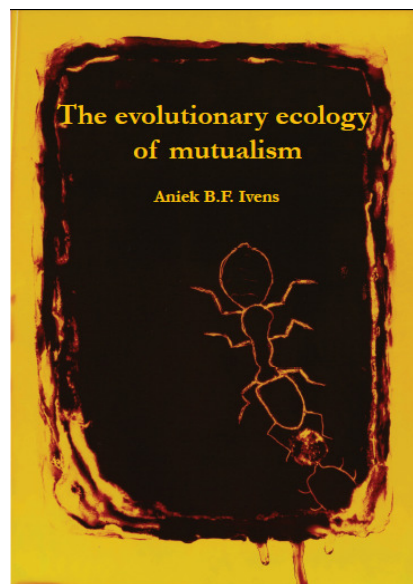
http://www.rug.nl/research/theoretical-biology/_pdf/thesis_iven_12.pdf

By: Aniek B.F. Ivens
aivens@rockefeller.edu

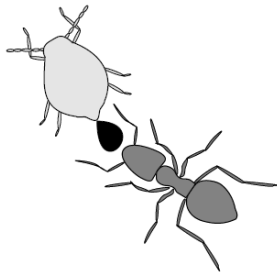
Mutualism, cooperation between different species, is wide-spread in nature. From bees pollinating plants to bacteria aiding digestion in the human gut: mutualism is essential for life on earth. But how does mutualism evolve? And what mechanisms keep mutualisms stable over evolutionary time and

prevent mutualistic partners from parasitizing each other?

I explored these questions for my thesis combining empirical and theoretical approaches. In the empirical part of the thesis, I report on a behavioural study of one particular mutualistic interaction: that between yellow meadow ants (*Lasius flavus*) and the three most common root aphid species it tends in its nest. The focus of the theoretical part of my thesis (with computer simulation models) is on the importance of conditional behaviour for the evolution of cooperation, both within- and between-species.



The yellow meadow ant tends root aphids in its underground nest for 'milk' (the sugary honeydew that aphids excrete) and 'meat' (by eating the aphids). In return, the ants build specialized aphid chambers in their nest and protect the aphids actively from predators. Both partners are dependent on this interaction: without aphids, the ants will not be able to meet their



nitrogen and carbon needs; without the hygienic removal of honeydew by the ants, aphids do not survive.

I studied this so-called 'farming mutualism' on the island of Schiermonnikoog (NL), combining genetic microsatellite studies and behavioural experiments. The three most common aphid species turned out to reproduce predominantly clonally and they rarely dispersed. I also found out that most aphid chambers only contained a single clone of a single aphid species and that clonal lineages remain in the same ant nests over consecutive years.

Such clonal reproduction and restricted dispersal of monocultural 'crop' or 'cattle' is also known from fungus-growing ants. In these other systems, the observed low levels of symbiont diversity have been shown to result from active partner choice by the farming ants. Behavioural experiments suggested that the pattern of low aphid diversity in my model system is more likely to result from constraints on aphid dispersal inherent to their subterranean lifestyle.

In the theoretical part of my thesis I investigated the evolution of cooperation. Although cooperation provides benefits to all parties involved, it does not evolve easily, because cooperators can be exploited by cheaters. This problem may be overcome if cooperative individuals predominantly interact with other cooperators. A conditional behavioural mechanism

leading to such positive assortment is partner fidelity (staying in cooperative and leaving non-cooperative neighbourhoods). I used individual-based simulations to investigate whether partner fidelity indeed favours the evolutionary emergence and subsequent stability of within- and between-species cooperation in a patchy population. I organized my simulations on within-species cooperation as a public goods game, where investment in cooperativeness could jointly evolve with the tendency to leave a patch to join another patch. Dispersal decisions were allowed to be conditional on average cooperativeness in source and target patches.

The simulations on between-species cooperation were modelled analogously, with cooperative behaviour modelled as substance exchange between two species co-inhabiting the patches. In both scenarios (intra- and interspecific cooperation), conditional dispersal had a strong effect on the evolution of cooperation. In case of within-species cooperation, if the cost-benefit ratio of public good investment was very low (making any investment profitable for the investors themselves), conditional dispersal destabilized cooperation that readily evolved when dispersal was kept constant. If the

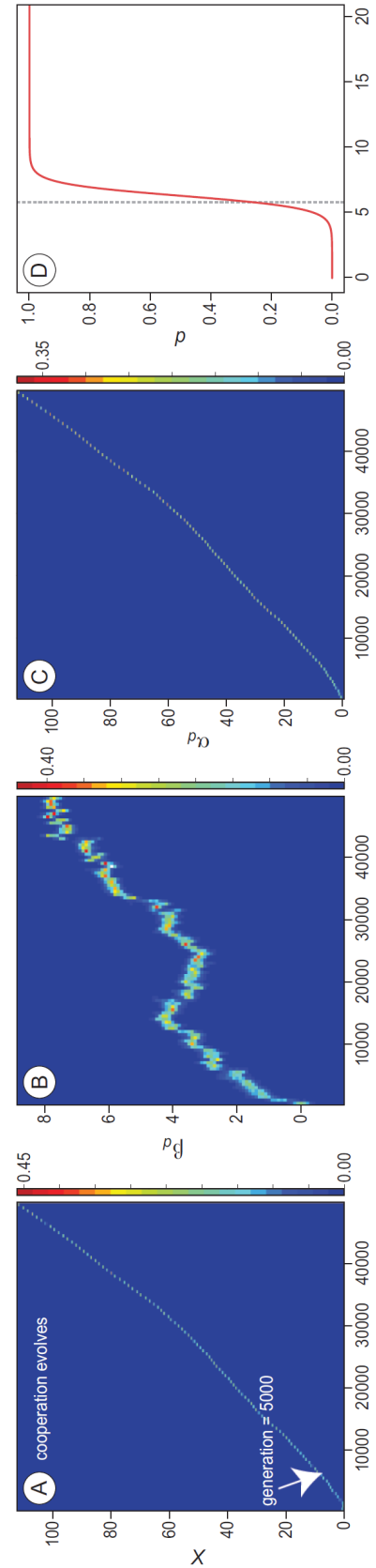


Photo: Jeroen Kuijpers

cost-benefit ratio of investing in public goods was high (making the public goods game a social dilemma where investors lose while their group gains) conditional dispersal strongly promoted the evolution of cooperation, but only in simulations where individuals evolved the tendency to leave cooperative patches (see figure).

In simulations where individuals tended to stay in cooperative patches (partner fidelity), cooperation quickly went extinct. This unexpected finding is explained by the fact that a high level of cooperation is associated with a high intensity of local competition in our model, making it profitable to leave cooperative environments and cash the benefits of cooperation elsewhere.

Figure: Joint evolution of cooperativeness and conditional dispersal in a representative simulation run leading to the evolution of cooperation. The three panels to the left are heat plots illustrating the evolution of the frequency distribution of the alleles for cooperativeness x (A) and the parameters β_d (B) and α_d (C) characterizing the evolving conditional dispersal strategy. For generation 5,000, panel D shows the representative dispersal strategy and the average cooperativeness in the population (vertical line). A single dispersal strategy is predominant with individuals tending to leave their patch when its cooperativeness is higher than the population average.



My results imply that conditional dispersal can both promote and destabilize intraspecific cooperation, and that the evolutionary consequences of conditional strategies may thus be difficult to predict. In the model on between-species cooperation, cooperation also evolved, but only under extremely low cost-benefit ratios. When these conditions were met, conditional dispersal indeed promoted cooperation following the same dynamics as observed in our model on intraspecific cooperation.

Although the two species considered in our model were identical, evolved patterns of cooperation were typically unilateral, with one species contributing a lot and the other very little. This finding matches the observation that many natural mutualisms exhibit strong asymmetry between partners. Moreover, our findings on the importance of low cost-benefit ratios show that this kind of interactions can readily evolve when they are initially based on by-products, such as for example the honeydew of aphids.

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Dispersal and reproduction in an ant-associated root aphid community. *Molecular Ecology*, 21, 4257-4269.

Ivens A.B.F., Kronauer D.J.C., Pen I., Weissing F.J., Boomsma J.J. 2012

Ants farm subterranean aphids mostly in single clone groups – an example of prudent husbandry for carbohydrates and proteins? *BMC Evolutionary Biology*, 12, 106.

Ivens, A.B.F., Kronauer, D.J.C. and Boomsma, J.J. 2011 Characterisation and cross-amplification of polymorphic

microsatellite loci in ant-associated root-aphids. *Conservation Genetics Resources*, 3, 73-77.

Aniek Ivens received a *Niels Stensen Fellowship* to join the Laboratory of Insect Social Evolution at The Rockefeller University, New York City, USA. Her postdoctoral research focusses on the multipartite mutualism between North American *Lasius* ants, the root aphids they farm and their gut bacteria.



Yvonne van Zeeland defended her thesis '*The feather damaging Grey parrot: an analysis of its behaviour and needs*' on the 21st of June 2013. The PhD-study was conducted at the Faculty of Veterinary Medicine of Utrecht University.

<http://igitur-archive.library.uu.nl/dissertations/2013-0531-200524/UUindex.html>

By: Yvonne van Zeeland

Feather damaging behaviour (FDB) is a common behavioural disorder in captive parrots, with an estimated prevalence of 10-15%. FDB may have aesthetic, medical and welfare consequences and often results in relinquishment or euthanasia. Little evidence-based insight, however, is available on the aetiology,

associated risk factors, preventive and/or therapeutic interventions.

A review of the literature identified many similarities between FDB in parrots, feather pecking in laying hens and so-called trichotillomania in humans (the compulsive urge to pull out, and in some cases, eat one's own hair, leading to noticeable hair loss, distress, and social or functional impairment). I suggested new focus areas for studies into FDB in parrots, which concern both environmental (extrinsic) and animal-bound (intrinsic) factors. First, however, I developed a new feather scoring system for evaluating changes in plumage condition. When compared to an existent feather scoring system, this novel system resulted in higher absolute and relative intra- and inter-observer reliabilities, rendering it useful for monitoring changes in plumage (and FDB) in response to preventive or therapeutic interventions.



Environmental enrichment may be an effective tool to reduce FDB. In particular the provision of foraging enrichment is important, as indicated by the presence of *contrafreeloading* [CFL] in African Grey parrots (*Psittacus erithacus erithacus*), which demonstrates that parrots are motivated to work for food in presence of free food. The effect of currently available foraging enrichments, however, is too limited to increase foraging times to levels comparable to that of wild conspecifics. These findings emphasize that gaining insight into the value of other types of enrichment may be just as important as the necessity to develop more effective feeding strategies. For this purpose, a closed-economy, two-chamber set-up was designed, which appears promising to establish parrots' motivation to gain access to different enrichments, thereby allowing for specific recommendations to be made regarding the living environment of specific captive parrots.

Interestingly, feather damaging parrots were less motivated to work for food compared to healthy individuals, suggesting alterations in

their behaviour and 'needs'. This finding stresses the importance for studies into potential intrinsic factors involved in FDB.

Behavioural tests demonstrated that feather damaging parrots display a proactive *coping style*, suggesting that temperamental traits may play a role in the development of FDB. In addition, neurotransmitters such as serotonin may be involved. To obtain evidence supporting its role, the efficacy of selective serotonin reuptake inhibitors (e.g. paroxetine) in the treatment of FDB may be studied. A pharmacokinetic study helped to establish a dosing regimen (twice daily 4 mg/kg paroxetine HCl dissolved in water, orally) which may subsequently be used in double-blinded, randomised, placebo-controlled clinical trials.

The current studies focused on the behaviour and needs of (feather damaging) grey parrots. The findings laid a basis for future studies to elucidate the role of various intrinsic and extrinsic factors in the onset and maintenance of



FDB. The new insights should prove to be useful in the evaluation of therapeutic and preventive intervention methods that are currently under development.

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Yvonne van Zeeland graduated as a Doctor in Veterinary Medicine (DVM) with honours at the Faculty of Veterinary Medicine of Utrecht University in 2004. After working for a short period in a companion animal clinic, she completed an Internship in Companion Animal Medicine at Utrecht University, followed by a Residency in Avian Medicine at the Division of Zoological Medicine. She successfully finished this residency and passed her board exam in April 2013 to become a Diplomate of the European College of Zoological Medicine (ECZM-Avian) and European recognized specialist in Avian Medicine (for which there are only five in the Netherlands).

Conferences & Meetings

- **BGA–2013**, 43rd Annual meeting of the Behavior Genetics Association, 28 June-2 July, Marseille University, France, <http://www.bga.org/>
- **ABS-2013**, 50th Annual Conference of the Animal Behavior Society, 28 July-1 August, Boulder, Colorado, USA: <http://www.colorado.edu/ABS2013/>
- **Behaviour 2013**, Joint meeting of the International Ethological Conference (IEC) and the Association for the Study of Animal Behaviour (ASAB), 4-8 August, Newcastle/Gateshead, UK <http://iec2013.com/>
- **AquaticNoise-2013**, 3rd International Conference on the Effects of Noise on Aquatic Life, 11-16 August, Budapest, Hungary: <http://www.an2013.or>
- **ESEB–2013**, 14th Congress of the European Society for Evolutionary Biology, 19-24 August, Lisbon, Portugal: <https://www.eseb2013.com/>
- **BCZ–2013**, 20th BeneluxCongress of Zoology, 1-3 November, Groningen University, the Netherlands: <http://www.rug.nl/research/behavioural-biology/symposia/>
- **NVG–2013**, Annual Meeting of the Netherlands Society for Behavioural Biology, 27-29 November, Kontakt der Kontinenten, Soesterberg: www.gedragbiologie.nl
- **ASAB–2013**, Annual Winter Conference of the Association for the Study of Animal Behaviour, 5-6 December, ZSL London Zoo, England, DEADLINE for abstract submission 16 August: <https://sites.google.com/site/winterasab2013/>
- **ISBE–2014**, 15th International Behavioral Ecology Congress, 12-17 August, Hunter, City University of New York, USA: <http://cabi.hunter.cuny.edu/isbe2014c>
- **ISAE–2014**, 48th Congress of the International Society for Applied Ethology, 28 July - 1 August, Vitoria-Gasteiz, Spain: <http://www.applied-ethology.org/isaemeetings>