PERSONAL INFORMATION

Family, First name: **Komdeur, Jan**
ORCID: 0000-0002-9241-0124
Date of birth: 13 April 1959
Nationality: Dutch
Website: https://www.rug.nl/research/gelifes/bpe/komdeur/people

EDUCATION

1991 **PhD**, Dept. Zoology, University of Cambridge, UK
1983 **MSc**, Dept. Ecology, University of Wageningen, Netherlands

ACADEMIC POSITIONS

1998 - present **Professor of Evolutionary Ecology**, University of Groningen (UG), Netherlands
1996 - 1998 **Assistant Professor Behavioural Ecology**, Dept. Zoology, University of Melbourne, Australia
1994 - 1996 **Postdoc**, Dept. Animal Ecology, UG, Netherlands
1991 - 1994 **Senior Scientist**, National Environmental Research Institute, University of Århus, Denmark
1988 - 1991 **PhD study**, Dept. Zoology, University of Cambridge, UK
1986 - 1988 **Researcher**, Seychelles, BirdLife International, Cambridge, UK
1983 - 1985 **Research Assistant**, Dept. Ecology, University of Wageningen, Netherlands

FELLOWSHIPS AND AWARDS

- **Finalist, PROSE Award** for Biological Sciences (2022) for book *The Evolution of Social Behaviour*.
- **Best PhD Supervisor Award,** Faculty of Science and Engineering, UG (2018, 2019, 2021)
- **Bio Art & Design Award, 1st prize,** Netherlands Organization for Health Research and Development (2014)
- Highest score ('**international excellence**') in the three most recent national research assessment evaluations by an international Peer Review Committee (2004, 2011, 2017)
- **Innovation in Research Award** of the Dutch Research Council (NWO), NWO-TOP (2011)
- **Excellence in Research Award** of NWO (2004)
- **Innovation in Research Award** of NWO, Vici (2003)
- **Excellence in Research Award, 1st prize,** of the Netherlands Zoological Society (2000)
- **Frank A. Pitelka Award for Excellence in Research**, International Soc. Behav. Ecol., USA (1998)
- **Teaching Excellence Recognition Awards,** Faculty of Science and Engineering, UG (2000, 2004, 2008, 2017)

SELECTION OF GRANTS 2003-2012: €7.5M; 2013-2023: €14.2M, of which €9.3M as main applicant

Personal grants:

- **Double Degree Programme**, UG, Stellenbosch, Santiago, Mexico, 2022, 5 PhD positions €**1.4M**
- **NWO: TOP Grant**, 2012, €**1.0M**; **Vici Grant**, 2003, €**1.3M; Graduate Programme,** 2012, 2 PhD positions, €**0.5M; 5 Visitor Grants for professors to spend 6 months in my group**, 2014, 2016-2018, €**0.8M**
- **Adaptive Life Programme**, UG, 2017 and 2020, 5 PhD positions, €**1,3M**
- **EU research grant, FP7-PEOPLE-2011-CIG**, 2009, €**0,07M**
- 22 competitive, externally funded grants (>€250k each) for 25 PhD and 8 postdoc positions, €**7,2M**

Consortium grants:

- **EU research grants, STREP-NEST**, 2009, 2012; funding for 1 PhD and 2 postdoc positions, €**0.7M**
- **Cape Horn International Center Grant** (Chile), with RA Vasquez, 2020, €**0,8M**
- **Austrian Science Fund** (FWF, Austria), with BR Scheiber, 2019, €**0.7M**
- **EU grant to establish the Erasmus Mundus Joint Master Course in Evolutionary Biology**, with FJ Weissing, J Parsh, I Olivieri, J Höglund, H Ellegren, 2009, €**4.5M**
- **Work package leader of the European Commission Programme** 'New and Emerging Science and Technology', FP6-2004-NEST-Path (2007, €**3.2M**) and **of the European Commission Sixth Framework Programme 'Priority Nests'** (Incore grant (2008, €**1.2M**)
- **National Environmental Research Council** (NERC, UK) grants, with T Burke, DS Richardson, H Dugdale; 2020, €**0.8M**; 2017, €**0.9M**; 2013, €**0.6M**; 2010; €**0.2M;** 2009, €**0.4M**)

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

I have individually supervised >50 BSc students writing their BSc thesis, >190 MSc students writing their Master's thesis, 59 PhD students writing their PhD thesis, and 15 postdoctoral fellows (see Track Record)

TEACHING ACTIVITIES AND INITIATIVES

- **Current courses (coordinator and lecturer): BSc**: Genetics, Ecology & Evolution, Behavioural Research,

Animal Ecology Research, Evolutionary Ecology; Biodiversity & Conservation. **MSc**: Behaviour, Ecology & Genetics (MEME-Top Master), Current Themes in Ecology & Evolution, Research Proposals for Evolutionary Ecology

- **Initiatives:** I have set up two international teaching curricula at the BSc and MSc levels, Faculty of Science and Engineering, UG and two one-semester programmes (Genetics, Ecology & Evolution and Behaviour, Ecology & Genetics) that started in September 2018. In total, I have set up and taught >21 different courses at undergraduate, graduate and postgraduate level
- **Educational committees:** Member of Curriculum Committees of 3 BSc and 2 MSc programmes, Member of Faculty Board Educational and teaching reform committees (2006 – present)
- **Sub-Saharan Africa advisory committee:** I have visited universities of Stellenbosch and Cape Town to develop/intensify joint interdisciplinary curricula with priories for education and research (2023)

ORGANISATION OF SCIENTIFIC MEETINGS (role as organiser; selection)

2023 Symposium on Soundscape Approach to Biodiversity and Well-Being in the City (September)
2022 Member Scientific Committee, *All of life is social*, 10th European Conference on Behavioural Biology, Groningen (1500 Ps)
2018 Workshop on *Causes and consequences of individual variation in behaviour*, Beijing Normal University and Beijing Environmental Forestry University, China (150 Ps)
2018 Symposium on *Implications of adult sex ratio variation in birds: breeding systems, demography and biodiversity conservation,* 27th International Ornithological Congress, Vancouver, Canada (200 Ps)
2017 Symposium on *Developmental plasticity as driver of adaptation to environmental change,* International Ecological Conference/Association for the Study of Animal Behaviour, Estoril, Portugal (200 Ps)
2015 Workshop on *The Economics of Evolution,* Netherlands Organization for Health and Development, Eindhoven, Netherlands (200 Ps)
2009 – present Various international symposia (>50 Ps) at UG, including: Social Evolution (2014, 4 days), Individual Variation (2015, 3 days), Evolution of Sociality (2018, 3 days)

INSTITUTIONAL RESPONSIBILITIES

2009 - present **Head of Evolutionary Ecology Group**, UG
2021 - present **Board Member**, Groningen Institute for Evolutionary Life Sciences (portfolio support staff)
2006 - present **Director, Top Master's Programme in Evolutionary Biology**, UG
2014 - present **Chair, Selection Committees for Top Master's Course and Erasmus Mundus Joint Master Course Evolutionary Biology (MEME)**, run by the universities of Groningen, Montpellier, Munich, Uppsala, and Harvard
2010 - 2014 **Board Member**, Centre for Ecological and Evolutionary Studies, UG

REVIEWING ACTIVITIES

- **Member Editorial Boards (selection):** *Behavioural Ecology* (since 2020), *Behavioural Ecology and Sociobiology* (2013-2017), guest editor *Frontiers in Ecology and Evolution* (2023)
- **Member of various Evaluation Committees:** NWO: Geo- and Biosphere (since 2004; chair in 2008, 2012, 2017); Talent Programme (Rubicon, Vidi, and Vici, since 2004, chair in 2012, 2014, 2016), National Polar Research (2006-2007); Nuffic (since 2014); SSE Rosemary Grant Advanced Awards (Chicago, 2018-2022)
- **Member of Peer Review Committees**: Institute Avian Research (Wilhelmshaven, 2010), Biosciences (Exeter, 2014), Institute Ecology and Evolution (Bern, 2016), Faculty Biology (Bielefeld, 2019).
- Chair/Member of **Appointment Advisory Committees** (>40) and **Doctoral Defence Committees** (>80)

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- **Member Sector Plan Committee**, Universities of the Netherlands, national programme for expanding research and staff capacity (since 2021)
- **Coordinator University Groningen-based Adaptive Life programme** for establishing Strategic European Partnerships Initiatives (since 2022)
- **Member of University of Groningen Sub-Saharan Africa advisory committee** to develop and intensify joint interdisciplinary curricula prioritizing teaching, research, and societal impact (since 2022)
- **Board Member Netherlands Ornithological Union**: organizer bi-annual symposia (2001-2011)
- **Member of Advisory Boards**: Councils Endangered Species Research Seychelles Islands (since 2000) and Galápagos Islands (2006-2010), Protekta Biological Pest Control (2010-2015)

MAJOR COLLABORATIONS:

Collaborations based on their relevance to the proposed research and involving the joint supervision of PhD or post-doc projects: Tamas Székely (Bath), Michael Taborsky (Bern), Rodrigo Vásquez (Santiago), Lu Xin (Wuhan), Rebecca Kilner (Cambridge), Sandra Steiger (Bayreuth), Peter Korsten (Aberystwyth), De Chen, Zhengwang Zheng (Beijing), Ido Pen, Franjo Weissing, Hannah Dugdale (UG), Terry Burke (Sheffield), David Richardson (Norwich).

ACADEMIC LEADERSHIP AND ACHIEVEMENTS

I am an integrative behavioural and evolutionary ecologist studying the evolution of social behaviour and life history patterns in social animals, to discover why and how animals cooperate or compete. My research focuses on behaviour as this is the level at which organisms interact most directly with their physical and social environment. I integrate empirical and theoretical studies to obtain deeper knowledge of the evolution of adaptive behavioural responses. I focus on long-term studies of wild birds in naturally varying environments; these are complemented by experimental studies at the individual and local population levels (also on non-avian model systems). My first main achievement is that, starting in 1985, I established one of the most prominent model systems in evolutionary ecology: the Seychelles warbler (e.g.[58,102,103]). My work on Seychelles warblers (and other social systems) substantially advanced the fields of behavioural ecology and social evolution in at least three areas:

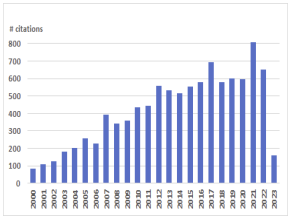
(i) The evolution of group living and cooperative breeding[41,42,58,82,104-106] Offspring often delay dispersal and remain in their natal territory. My work confirmed two much-debated alternative hypotheses on the ecological factors influencing delayed dispersal[40,60,78,107] and led to a new synthetic view. I discovered that the main cause of such delay is the degree of habitat saturation[60,78,105] However, the amount of insect prey available in a territory is also an important factor. For a young bird, the breeding success and survival benefits of remaining and helping in good territories (high food abundance) outweigh the benefits of independent breeding in poor areas, and offspring from good territories rarely disperse to breed in poor areas (e.g.[52,60,108]).

(ii) The evolution of sex allocation[e.g.103,109,-115] I showed that mothers in high-quality territories mainly produce daughters (the helping sex), while in low-quality territories they mainly produce sons (the dispersing sex)[51,114-116]. For breeding pairs living in high-quality territories, having helpers increases their reproductive success and survival, but in low-quality territories, helpers compete with breeders for food resources[61,72,96,117].This skew in offspring sex ratio is striking, because birds were previously thought not to be able to adjust the sex ratio at birth (as in birds sex is determined by chromosomes)[116,118]. I did not only find out that Seychelles warblers can adjust the sex ratio of their offspring, but in a series of meticulous studies, I also unravelled that they do so in a highly adaptive manner[115,117,119-125]. My research (which includes the evolution of sex allocation on other systems[e.g.126-138]) has stimulated wider interest in how vertebrates manipulate offspring sex ratios.

(iii) Social effects on senescence[62-64,125]. I showed that in cooperative breeding systems, breeders reduce their parental care and increase in health (lower oxidative stress and telomere attrition, higher body mass, less susceptibility to diseases) when assisted by helpers, resulting in delaying breeder senescence and enhances life expectancy[62-64,125]. I also showed that helping deteriorates health and accelerates senescence in helpers, thereby reducing life expectancy[65]. I have published (and co-edited) two important books on social evolution.

IMPACT

I have published 302 ISI publications (144 as first or senior author), 2 books, and 18 book chapters. In April 2023, *Web of Science* reports 10,208 citations and h-index of 52, *Google Scholar* 15,575 citations and h-index of 65. I strive for quality: 20 of my papers are in prestigious journals (Nature, Trends Ecol Evol, Nature Comm, PNAS, Current Biol, Ecol Letters) and 125 in other excellent journals,7 articles were cited >200 times, 22 cited >100 times; of these, I am single author of 6, and first or senior author of 9 articles.



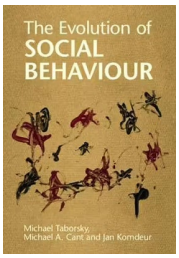
TOP 10 PUBLICATIONS IN THE LAST TEN YEARS

1. Zheng J, **Komdeur J,** Weissing FJ (2023). Effects of season length and uniparental care efficiency on the evolution of parental care. *J. Anim. Ecol*. (in press)
2. **Komdeur J**, Ma L (2021) Keeping up with environmental change: The importance of sociality (invited perspective paper). *Ethology* 127, 790–807.
3. Hammers M, Kingma SA, van Boheemen LA, Sparks AM, Burke T, Dugdale HL, Richardson DS, **Komdeur J (**2021) Helpers compensate for age-related declines in parental care and offspring survival in a cooperatively breeding bird. *Evol. Lett.* 5, 143–153.
4. Kingma SA, Bebbington K, Teunissen N, Peters A, **Komdeur J** (2021) The evolution of delayed dispersal and different routes to breeding in social birds. *Adv. Study Behav.* 53, 163-224.
5. Hammers M, Kingm a SA, Spurgin LG, Bebbington K, Dugdale HL, Burke T, **Komdeur J*,** Richardson DS* (2019). Breeders that receive help age more slowly in a cooperatively breeding bird. *Nature Commun.* 10: 1301 [*joint last author].
6. Groenewoud F, Kingma SA, Hammers M, Dugdale HL, Burke T, Richardson DS, **Komdeur J** (2018). Subordinate females in the cooperatively breeding Seychelles warbler obtain direct benefits by joining unrelated groups. *J. Anim. Ecol.* 87: 1251–1263.
7. Scheiber IBR, Weiss BM, de Jong ME, Braun A, van den Brink NW, Loonen MJJE, Millesi E, **Komdeur J** (2018) Stress behaviour and physiology of developing Arctic barnacle goslings (*Branta leucopsis*) is

affected by legacy trace contaminants. *Proc. Roy. Soc. B. Biol. Sci* 285, 1893.

8. Van de Crommenacker J, Hammers M, van der Woude J, Louter M, Santema P, Richardson DS, **Komdeur J** (2017). Oxidative status and fitness components in the Seychelles warbler. *Funct. Ecol.* 31, 1210-1219
9. **Komdeur J**, Székely T, Long X, Kingma SA (2017). Adult sex ratios and their implications for cooperative breeding in birds. *Phil. Trans. R. Soc. B. Biol. Sci.* 372: 5–9.
10. Kingma SA, Santema P, Taborsky M, **Komdeur J** (2014). Group augmentation and the evolution of cooperation. *Trends Ecol. Evol.* 29, 476–484.

BOOKS



- **Komdeur J**, Tieleman BI, Lens L (eds special issue) (2023). Keeping up with global change: How plasticity shapes the adaptive potential of long-lived species. *Frontiers in Ecology and Evolution* (in progress).
- Taborsky M, Cant M, **Komdeur J** (2021). The Evolution of Social Behaviour. CUP, UK.
- Székely T, Moore AJ, **Komdeur J** (eds) (2010). Social Behaviour: Genes, Ecology and Evolution. CUP, UK.
- **Komdeur J** (ed – special issue) (2010). The Dynamics of Social Behaviour - The Importance of Dispersal and the Environment. *Behaviour* 147, 1501-1632.

INVITED PRESENTATIONS AND HONORARY LECTURES (selection; *cancelled due to covid-19)

226 speaker/keynote lectures at international conferences, **78 seminars** at universities/research institutes. Visiting professor: Dept. Zoology, University of Melbourne, Australia (1998 – present); Dept. Life Sciences, Beijing Normal University, China (2017 - present); Dept. Zoology, Cambridge University, UK (2019 - present).

2023 Behaviour Conference, Symposium on Plasticity in social behaviour under environmental change, - *keynote*, Bielefeld, Germany; Invited Lectures, Beijing Normal University, Beijing, China.
2022 Invited Lectures Evolution of Social Behaviour for BSc, MSc and PhD students (3 weeks, online), 12 universities in China (2022: online).
2021 Symposium on The Evolution of Social Behaviour – *keynote*, Bern, Switzerland.
2020 24th Evolutionary Biology Meeting – *plenary*, Marseilles, France*; Invited Lectures, Beijing Normal University, Beijing Forestry University, Beijing, China*, and University of Chile, Santiago, Chile*.
2019 Conference on Evolution of Social Dynamics - *plenary*, Debrecen, Hungary; Invited Lectures, Cambridge University, UK; Biodiversity Research Centre, Taipei, Taiwan.
2018 27th International Ornithological Congress (IOC), Long-term Studies Vehicles for Detection of Change- *keynote*, Vancouver, Canada; Invited Lectures, Beijing Normal University and Beijing Forestry University, Beijing, China; Organizer and lecturer, workshop 'How to write a scientific article/grant applications?' Beijing, China.
2017 14th China Ornithological Congress - *plenary*, Xi'an, China; International Ecological Conference/Study of Animal Behaviour - c*ontributed talk*, Estoril, Portugal; Conference on Sex-role Evolution - *plenary*, Tihany, Hungary; Conference on Adult Sex Ratios and Reproductive Decisions - *plenary*, Berlin, Germany.
2016 Conference on Sex Roles and Adult Sex Ratios - *plenary*, Debrecen, Hungary; Invited Lectures - Bern University, Switzerland, and Lyon University, France.
2014 26th IOC - *keynote*, Tokyo, Japan; NWO Symposium Polar Change - *invited speaker*, The Hague, NL.
2013 Interdisciplinary Conference 'Obstacles and Catalysts of Peaceful Behaviour' - *plenary*, Leiden, NL.

RESEARCH EXPEDITIONS LED BY APPLICANT

I initiated long-term collaboration with Nature Seychelles and have led scientific expeditions for 2-8 persons to Seychelles (1988-2023, including four translocation programmes of warblers), Svalbard, Norway (2004-2019), Panama (2007-2009), Ecuador (2009), Australia (1998-2015), New Zealand (2006-2009), China (2009-2020-2023), Chile (2017-2023), Tibet (2017-2019), Tenerife (2013), Mauritius (2019), Mexico (2023), South Africa (2020-2023).

CONTRIBUTIONS TO THE CAREERS OF YOUNG RESEARCHERS

I stimulate my students, including BSc and MSc, to publish their research as first author in peer-reviewed international journals. I aid them to find jobs and with grant applications. Since 1998, I have supervised **59 PhD students,** to date 49 have received their doctorate. Of my PhD students and 15 postdoctoral fellows, 56 are still active in academic research. They include: **8 Professorships:** Richardson, U East Anglia; Dugdale, Nicolaus, Both, UG; Dingemanse, München U; Kingma, WUR; Botero, U Texas; Isaksson, Lund U; **13 Tenure-track Ass Professors, 14 Senior scientists, 9 independent research fellows on personal grants, 13 post-docs** and **11** have **positions at applied institutions**. Quite a few of my PhD students have received prestigious early-career grants (selection): **4 NWO Rubicons**; **5 NWO Venis**; **2 NWO Vidis**; **3 Marie Curie grants**; **1 BBSRC Fellowship** (Spurgin); **2 NERCs** (Dugdale, Hadfield); **1 Dutch Zoology Prize**; and **3 Australian Science Fund Holders**.