

SIMEON QUIRINUS SMEELE

CONTACT INFO

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ABOUT ME

I'm a post doctoral researcher at Ecoscience, Aarhus University. I'm broadly interested in the evolution of complex cognition and culture, and more specifically in the emergence of socially learned vocal behaviours. I'm currently working on implementing a deep neural network to help monitor bat activity above Danish terrestrial and marine environment.

EDUCATION

- Dr. rer. nat.** 2019-2023
University of Konstanz | Konstanz, Denmark
- Behavioural Ecology, *magna cum laude*
 - Within and between species approaches to the study of communication and cognition in parrots
 - Supervisors: Dr. Mary Brooke McElreath and Dr. Lucy Aplin
- Master of Biology** 2016-2018
University of Southern Denmark | Odense, Denmark
- Courses in behavior, bio-acoustics, terrestrial ecology, statistics, research projects, Matlab, sound and hearing, marine mammals, biodiversity.
 - Thesis topic: "Pinniped cognition: the ability to recall own behaviour on cue"
- Bachelor of Biology (minor in Mathematics)** 2013-2016
University of Southern Denmark | Odense, Denmark
- Courses in zoology, botany, ecology, ecotoxicology, statistics and mathematics.
 - Thesis topic: "Spatial memory in Daubenton's bats"

EXPERIENCE

Post doctoral researcher **2023 - current**
Wildlife Ecology, Ecoscience, Aarhus University | Aarhus, Denmark

- Passive acoustic monitoring of bats
- Supervisors: Morten Elmeros and Ole Roland Therkildsen

IMPRS doctoral researcher **2019 - 2023**
Max Planck Institute of Animal Behavior and Max Planck Institute for Evolutionary Anthropology | Radolfzell, Germany

- Within and between species approaches to the study of communication and cognition in parrots
- Supervisors: Dr. Mary Brooke McElreath and Dr. Lucy Aplin

Staff member **2022**
Museum Haus Otto Dix | Hemmenhofen, Germany

- Helping visitors (in German) in the museum during weekends in the summer season

Research assistant **2019**
University of Southern Denmark | Odense, Denmark

- Analysing large datasets on species demography and conservation
- Supervisor: Professor Dalia Amor Conde

Study group supervisor **2015-2017**
University of Southern Denmark | Odense, Denmark

- Helping first year Natural Science students work in groups on biology and mathematics projects

Teaching assistant **2014-2015**
University of Southern Denmark | Odense, Denmark

- Teaching first year Natural Science students in the general biology course

VOLUNTEERING

Research assistant (internship) **2018 - 2019**
University of Southern Denmark and Fuglezo | Odense, Denmark

- Co-supervising master student working on cooperative and vocal behaviour in parakeets
- Supervisor: Professor Ole Næsby

Animal trainer **2017 - 2018**
Marine Biological Research Centre | Kerteminde, Denmark

- Training grey seals, great cormorants and common murre
- Assisting with data collection for psychophysics, conservation and cognition
- Supervisor: Dr. Kirstin Anderson Hansen

Trainer and member general board **2014 - 2018**
Odense SportsKlatreKlub (climbing gym) | Odense, Denmark

- Training the youth elite team, adult advanced team and schools
- Moving the club to new facilities and setting up the new management structure

Field assistant **2014**
University of Southern Denmark | Odense, Denmark

- Collecting data from tit nest boxes
- Conducting observational study of great tit foraging behaviour
- Supervisor: Prof. Owen Jones

TEACHING

Biology field course **2021**
Max Planck Institute of Animal Behavior | Radolfzell, Germany

- Gave a lecture on bio-acoustics and co-supervised a group of master students working on local dialects and aggression in great tits

General introduction biology **2014-2015**
University of Southern Denmark | Odense, Denmark

- I worked as a teaching assistant during the biology part of a larger course that introduced natural science students to different subjects in the wider field
- I had the responsibility for groups of 20-30 students that worked on exercises and presented the solutions

ACHIEVEMENTS

Awards

- 2022 Small Cluster Grant CASCB (€ 10,000)
- 2021 Small Cluster Grant CASCB (€ 10,000)

ACTIVITIES

Peer reviews

- 2023 Methods in Ecology and Evolution
- 2022 PLOS Computational Biology
- 2022 Scientific Reports
- 2022 Ethology
- 2022 Ethology
- 2022 Scientific Reports
- 2021 Ecology and Evolution

Organisation

- 2021-current Preprint Team, Proceedings of the Royal Society
- 2021-2023 member Sustainability Group MPI-AB
- 2021 co-host Virtual ESLR Workshop (GatherTown)
- 2021 co-host Virtual IMPRS Grand Challenges Symposium (Zoom)
- 2020-2022 external PhD representative Max Planck Institute of Animal Behavior

2023

- **Smeele, S. Q.***, Tyndel, S. A.*, Aplin, L. A. & McElreath, M. B. (2023). **Multi-level analysis of monk parakeet vocalisations shows emergent dialects between cities in the European invasive range**. Behavioral Ecology, arad093, <https://doi.org/10.1093/beheco/arad093> [* co-first author]
- **Smeele, S. Q.**, Senar J. C., Aplin, L. A. & McElreath, M. B. (2023). **Evidence for vocal signatures and voice-prints in a wild parrot**. R. Soc. open sci. <https://doi.org/10.1098/rsos.230835>
- *preprint* **Smeele, S. Q.***, Tyndel, S. A.*, Klump, B. C., Alarcon-Nieto, G. & Aplin, L. M. (2023). **callsync: an R package for alignment and analysis of multi-microphone animal recordings**. BioRxiv. <https://doi.org/10.1101/2023.02.07.527470> [* co-first author]
- Mooney, A., Teare, J. A., Staerk, J., **Smeele, S. Q.**, Rose, P., Edell, R. H., King, C. E., Conrad, L., & Buckley, Y. M. (2023). **Flock size and structure influence reproductive success in four species of flamingo in 540 captive populations worldwide**. Zoo Biology, 1–14. <https://doi.org/10.1002/zoo.21753>

2022

- **Smeele, S. Q.**, Conde, D. A., Baudisch, A., Bruslund, S., Iwaniuk, A., Staerk, J., Wright, T. F., Young, A. M., McElreath, M. B. & Aplin, L. M. (2022). **Coevolution of relative brain size and life expectancy in parrots**. Proceedings of the Royal Society B, 289(1971), 20212397. <https://doi.org/10.1098/rspb.2021.2397>
- **Smeele, S. Q.** (2022). **Using relative brain size as predictor variable: Serious pitfalls and solutions**. Ecology and Evolution, 12, e9273. <https://doi.org/10.1002/ece3.9273>
- Bergler, C., **Smeele, S.Q.**, Tyndel, S.A. et al. **ANIMAL-SPOT enables animal-independent signal detection and classification using deep learning**. Sci Rep 12, 21966 (2022). <https://doi.org/10.1038/s41598-022-26429-y>
- Torres Ortiz, S., **Smeele, S.Q.**, Champenois, J. & von Bayeren A. M. P. (2022). **Memory for own actions in parrots**. Sci Rep 12, 20561. <https://doi.org/10.1038/s41598-022-25199-x>

2021

- Cantor, M.*, Chimento, M.*, **Smeele, S. Q.***, He, P., Papa-georgiou, D., Aplin, L. M., & Farine, D. R. (2021). **Social network architecture and the tempo of cumulative cultural evolution**. Proceedings of the Royal Society B, 288(1946), 20203107. <https://doi.org/10.1098/rspb.2020.3107> [* co-first author]

2020

- Nielsen, R. O., da Silva, R., Juergens, J., Staerk, J., Sørensen, L. L., Jackson, J., **Smeele, S. Q.**, & Conde, D. A. (2020). **Standardized data to support conservation prioritization for sharks and batoids (Elasmobranchii)**. Data in brief, 33, 106337. <https://doi.org/10.1016/j.dib.2020.106337>
- Bergler, C., Schmitt, M., Maier, A., **Smeele, S.**, Barth, V., & Nöth, E. (2020, October). **ORCA-CLEAN: A Deep Denoising Toolkit for Killer Whale Communication**. In INTER-SPEECH (pp. 1136-1140). <http://dx.doi.org/10.21437/Interspeech.2020-1316>

2019

- **Smeele, S. Q.**, Anderson Hansen, K., Ortiz, S. T., Johansson, F., Kristensen, J. H., Larsson, J., Siebert, U. & Wahlberg, M. (2019). **Memory for own behaviour in pinnipeds**. *Animal cognition*, 22(6), 947-958. <https://doi.org/10.1007/s10071-019-01286-x>

CONFERENCES

Vocal Complexity and Social Learning Workshop

2023

Max Planck Institute for Evolutionary Biology, Germany

- Talk: 'Vocal flexibility in monk parakeets'

CES Hybrid Conference

2022

Aarhus University, Denmark

- Talk: 'Monk parakeets exhibit individual vocal signatures and population-level dialects in their vocalisations'

ASAB Easter Virtual Meeting

2021

University of Bristol, UK

- Talk: 'Brainy lives: do larger brained parrots live longer?'

SKILLS

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R, driving licence, GitHub, acoustic analysis

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L^AT_EX, Python, Bayesian statistics, teaching and supervision, international collaborations, field work

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Matlab, Bash, Git

Languages

- English (fluent)
- Danish (fluent)
- Dutch (fluent)
- German (intermediate)

REFERENCES

Dr. Lucy M. Aplin

Affiliated Scientist
Department of Migration
Max Planck Institute of Animal Behavior
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laplin@ab.mpg.de

Dr. Mary Brooke McElreath

Research Scientist
Department of Human Behavior, Ecology and Culture
Max Planck Institute for Evolutionary Anthropology
+49 341 3550 330
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Prof. Dalia. A. Conde

Associate Professor and Director of Science
Department of Biology and Conservation Science Alliance
University of Southern Denmark and Species360
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PERSONAL

Date of Birth 02-08-1992

Place of Birth Assen, The Netherlands

Nationality Dutch

Location Aarhus, Denmark