

SIMEON QUIRINUS SMEELE

CONTACT INFO

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ABOUT ME

I'm an IMPRS doctoral student at MPI Animal Behaviour and MPI Evolutionary Anthropology. I'm broadly interested in the evolution of complex cognition and culture. More specifically I focus on the emergence of socially learned vocal behaviours in parrots. I study vocalisations and social behaviour of the monk parakeet, an invasive parrot in many European cities. I also do comparative work trying to link vocal complexity, social complexity, brain size and longevity across parrots. I'm supervised by Dr. Lucy Aplin and Dr. Mary Brooke McElreath.

EDUCATION

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

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

- Parrot vocal and social complexity
- Supervisors: Dr. Mary Brooke McElreath and Dr. Lucy Aplin

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|---|------------------|
| Staff member | 2022 |
| <i>Museum Haus Otto Dix Hemmenhofen, Germany</i> | |
| <ul style="list-style-type: none"> • Helping visitors (in German) in the museum during weekends in the summer season | |
| Research assistant | 2019 |
| <i>University of Southern Denmark Odense, Denmark</i> | |
| <ul style="list-style-type: none"> • Analysing large datasets on species demography and conservation • Supervisor: Professor Dalia Amor Conde | |
| Study group supervisor | 2015-2017 |
| <i>University of Southern Denmark Odense, Denmark</i> | |
| <ul style="list-style-type: none"> • Helping first year Natural Science students work in groups | |
| Teaching assistant | 2014-2015 |
| <i>University of Southern Denmark Odense, Denmark</i> | |
| <ul style="list-style-type: none"> • Teaching first year Natural Science students in the general biology course | |

VOLUNTEERING

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|---|--------------------|
| Research assistant (internship) | 2018 - 2019 |
| <i>University of Southern Denmark and Fuglezoos Odense, Denmark</i> | |
| <ul style="list-style-type: none"> • Co-supervising master student working on cooperative and vocal behaviour in parakeets • Supervisor: Professor Ole Næsby | |
| Animal trainer | 2017 - 2018 |
| <i>Marine Biological Research Centre Kerteminde, Denmark</i> | |
| <ul style="list-style-type: none"> • 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 |
| <i>Odense SportsKlatreKlub (climbing gym) Odense, Denmark</i> | |
| <ul style="list-style-type: none"> • 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 |
| <i>University of Southern Denmark Odense, Denmark</i> | |
| <ul style="list-style-type: none"> • Collecting data from tit nest boxes • Conducting observational study of great tit foraging behaviour • Supervisor: Prof. Owen Jones | |

TEACHING

VtK 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 student 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-current 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

PUBLICATIONS

2023

- **Smeele, S. Q.**, Senar J. C., Aplin, L. A. & McElreath, M. B. (2023). **Evidence for vocal signatures and voice-prints in a wild parrot**. BioRxiv. <https://doi.org/10.1101/2023.01.20.524864>
- **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>
 - **Smeele, S. Q.***, Tyndel, S. A.*, Aplin, L. A. & McElreath, M. B. (2022). **Multi-level analysis of monk parakeet vocalisations shows emergent dialects between cities in the European invasive range**. *BioRxiv*. <https://doi.org/10.1101/2022.10.12.511863> [*co-firstauthor]
 - 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

- | | |
|---|-------------|
| CES Hybrid Conference
<i>Aarhus University, Denmark</i> | 2022 |
| <ul style="list-style-type: none"> • Presented our work on vocal behaviour in monk parakeets | |
| ASAB Easter Virtual Meeting
<i>University of Bristol, UK</i> | 2021 |
| <ul style="list-style-type: none"> • Presented our work on life expectancy and brain size in parrots | |

SKILLS



R, \LaTeX , Microsoft Office, GitHub, acoustic analysis, comparative statistics



Python, Bash, Git, Bayesian statistics, teaching and supervision



Matlab, international collaborations

Languages

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

REFERENCES

Dr. Lucy M. Aplin

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Department of Migration
Max Planck Institute of Animal Behavior
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Dr. Mary Brooke McEl- reath

Research Scientist
Department of Human Behavior, Ecology and Culture
Max Planck Institute for Evolutionary Anthropology
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