

Cognitive and Cultural Ecology Group
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Personal profile

Innovative and autonomous, I am able to lead projects from conception and raising funds to the writing of original articles. I am proficient in developing novel research protocols to address scientific challenges and am particularly skilled in the analysis of “big” and complex data sets, such as accelerometer or geographic data. I am experienced in managing personnel and logistics in the field over long periods (>4 months), coordinating international teams up to 6 people. With >6 years’ experience in managing and researching human-wildlife conflicts, I am competent in maintaining good relationships and communicating efficiently with partners from all fields - scientific, agricultural or technical.

Research interests: Behavioural adaptations, behavioural ecology, movement ecology, human-wildlife conflict, conservation biology, wildlife management.

Current position

Postdoctoral fellow

Mar. 2018-present

*Cognitive and Cultural Ecology, Research group Aplin,
 Max Planck Institute for Ornithology, Germany*

My post doc focuses on how sulphur crested cockatoos, an urban persister in the region of Sydney, are optimizing their foraging trips over the urban landscape. Combining GPS and acceleration data, I am building habitat permeability models that are used to inform the foraging routines of these birds. Moving on from these models I am investigating the evidences for spatial cognition and its importance when ranging in complex environments.

Education

PhD in zoology, understanding baboon ecology in a human altered landscape

Oct. 2013 – Jul. 2017

Swansea University, College of Biosciences

My PhD developed a complete understanding of human-baboon conflict dynamics in the Cape Peninsula, South Africa. I used bespoke animal-attached sensors and geographic information systems. This enabled the direct mapping of a range of fine-scale baboon behaviours in unprecedented quantity and quality, linking these to habitat types and the risk landscape of baboons. Using this information, I generated proactive mitigation methods which resulted in a diminution of the human-baboon conflict.

Master of Ecophysiology and Ethology

Sept. 2010 - June 2012

Université de Strasbourg, Faculté des sciences de la vie, France

- Functional ecology
- Tools for the study of ecosystems
- Population biology
- Biodiversity and environmental stressors
- Environmental management
- Behavioural ecology

Undergraduate in cellular biology and physiology

Sept. 2007 - May 2010

Université de Strasbourg, Faculté des sciences de la vie, France

Research experiences

Bio-logging consultancy

Jan. 2018 – Feb. 2018

Research technician, Swansea University, College of Biosciences

Managed by Dr Andrew King

Organisation, leadership and engineering

- Conceived, designed and built 60 GPS-accelerometer collars for cows and baboons
- Negotiated and purchased all parts necessary for the conception of the collars
- Coordinated a team of 3 PhD students and 1 technical assistant

Understanding baboon ecology in a human altered landscape

Oct. 2013 – Jul. 2017

PhD, Swansea University, College of Biosciences

Supervised by Andrew King, Emily Shepard, Justin O'Riain and Adrian Luckman

Organisation and leadership

- Managed the project's budget: grant application, budget allocation
- Scheduled and organised field seasons in South Africa lasting 4 to 5 months
- Recruited interns and assistants for technical support
- Coordinated an international team

Data acquisition

- Conceived, designed and built bespoke GPS-accelerometer collars
- Trapped and equipped baboons for behavioural studies
- Collected direct behavioural observations
- Evaluated management strategies

Data analyses

- Advanced linear or non-linear models, such as linear mixed models, or generalised linear mixed effects models and generalised least squares models including spatial autocorrelation analyses
- Machine learning algorithms such as random forest and classification and regression tree
- Compiled and handled spatial data via geographic information systems

Communication

- Contributed to the management of local management actions via the rapid communication of precise recommendations to the baboon technical team
- Conveyed the results to the public via vulgarisation of the research (TV: Discovery Channel (Canada), Radio: BBC News (UK), Internet: Science Daily (US), Cosmos (Australia)...)
- Published articles and participated to conferences

Classification of accelerometric signal for behavioural identification

Jan 2012 - Sept. 2013

Masters project, extended as assistant engineer, DEPE, IPHC, Strasbourg

Supervised by Yves Handrich

- Validated acceleration signals according to video data
- Defined criteria to classify behaviours from acceleration signals
- Built classification trees models

Development of a new tool for the estimation of badgers' population density

Jan. - July 2011

Vacations, DEPE, IPHC, Strasbourg

Supervised by Yves Handrich

- Mapped badgers' burrows
- Installed movement detectors to log entry/exit

Teaching experiences

Teaching assistant

Oct. 2013 - June 2016

College of Biosciences, Swansea University

Practicals: Evolutionary biology, collective behaviour, comparative physiology, statistics

Field trips: Biodiversity in intertidal zones

Supervision

Julie Escoffier, Master project, Université de Strasbourg,
« Study of raiding behaviour in chacma baboons »

Feb. - Sept. 2015

Grants, Fellowships

AgreenSkillsPlus,

Postdoctoral fellowship from the 01/02/2018 to 18/02/2018 (declined)

3500€/month

The Association for the Study of Animal Behaviour

Research grant

5000£

Swansea University

Research grant

5000£

The Society for Experimental Biology

Travel grant

500£

Swansea University: Swansea Paid Internship Network

Summer internships fund

1200£

Communications

Publications

- King, A. J., **Fehlmann, G.**, Biro, D., Ward, A. J., Furtbauer, I., Re-wilding collective behaviour: an ecological perspective, *Trends Ecol. Evol.* (in press), *Impact factor: 10.47*
- **Fehlmann, G.**, O'Riain, M. J., Kerr-Smith, C., Hailes, S., Luckman, A., Shepard E., King, A. J. Extreme behavioural shifts by baboons exploiting risky, resource-rich, human-modified environments, *Sci. Rep.* (2017), *Impact factor: 5.228*
- **Fehlmann, G.**, O'Riain, M. J., Hopkins P. W., O'Sullivan J., Holton M. D., Shepard E. L. C., King A. J. Identification of behaviours from accelerometer data in a wild social primate. *Anim Biotelemetry* (2017) 5: 6. doi:10.1186/s40317-017-0121-3
- **Fehlmann, G.**, O'Riain, M. J., Kerr-Smith, C. & King, A. J. Adaptive space use by baboons (*Papio ursinus*) in response to management interventions in a human-changed landscape. *Anim Conserv* (2017), 20: 101–109. doi:10.1111/acv.12293, *Impact factor: 2.788*
- **Fehlmann, G.** & King, A. J. Bio-logging. *Curr. Biol.* 26, R830–R831 (2016), *Impact factor: 8.983*

Talks

- **Fehlmann, G.**, O'Riain, Luckman, A., Shepard E., King, A. J. The effect of raiding upon socio-ecological strategies, 6th Biologging Symposium, Konstanz, Germany, 25-29 September, 2017
- **Fehlmann, G.**, O'Riain, Luckman, A., Shepard E., King, A. J. The consequences of raiding behaviour for socio-ecological strategies, 13th Ecology and Behaviour Conference, Chize, June 2017, *Prize of the best presentation*
- **Fehlmann, G.**, O'Riain, M. J., Kerr-Smith, C., Hailes, S., Luckman, A., Shepard E., King, A. J. Raiding baboons: sit and wait predators of the human realm, 16th congress of the International Society for Behavioral Ecology, Exeter, July 2016

- **Fehlmann, G.**, O’Riain, M. J., Kerr-Smith, C. , Hailes, S., Luckman, A., Shepard E., King, A. J. Bio-logging as a tool for human-baboon conflict remediation, *Ecolotech, Salon de l’ecologie*, Montpellier, November 2015
- **Fehlmann, G.**, O’Riain, M. J., Kerr-Smith, C. , Hailes, S., Luckman, A., Shepard E., King, A. J. Baboon monitoring from the baboon perspective, *Baboon Technical Team Meeting*, Cape Town, April 2015

Posters

- **Fehlmann, G.**, Kerr, C. , Shepard, E., Luckman, A., O’Riain, J., King, A., “In search of a free lunch: The behavioural ecology of raiding baboons, 6th Biologging Symposium, Konstanz, Germany, 25-29 September, 2017
- **Fehlmann, G.**, Kerr, C. , Shepard, E., Luckman, A., O’Riain, J., King, A., “Baboons in space: Human Baboon Conflict in South Africa, 5th Biologging Symposium, Strasbourg, France, 22-27 September, 2014
- **Fehlmann, G.**, Bodin, C., Leasser, R., Handrich, Y., “Following animal behaviours; go beyond boundaries” From energetics to Macroecology: carnivore responses to Environmental change”, Zoological Society of London, London, United Kingdom, 14-15 November, 2014.

Workshop

- **Fehlmann, G.** and Handrich, Y. “Présentation de données d’accélérométrie chez le blaireau”, *Atelier Bio-logging, bio-télémetrie et ingénierie écologique*, DEPE-IPHC, Strasbourg, March 2013

References

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