

Ecological drivers of social network dynamics

NERC PhD studentship

Supervision

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Project

Individuals can interact in several behavioural contexts (e.g., agonistic, affiliative, cooperative or aggregative behaviours) and the integration of these interactions is detectable in the form of relationships (1-3). Recent work shows that, in some species, this integration is not straightforward and can be likened to 'social niche' construction, an analogy borrowed from community ecology concepts (4). In this paradigm, individuals build social resource networks in different, yet dependent, behavioural dimensions and in doing so shape interactions throughout their network of conspecifics. It is postulated that this social niche construction process can enhance group-living benefits. Therefore, there should be an evolutionary pressure to safeguard the stability of social niches as this would allow individuals to profit from the behavioural resources that stable niches offer. This project will investigate the ecological drivers of social niche and social network dynamics, and their fitness consequences, using mathematical and statistical modelling approaches (5,6) coupled with natural experiments with troops of vervet monkeys in South Africa at the Samara Game Reserve.

Requirements

- Candidates must be eligible for UK/EU fee status and should hold a First or Upper Second Class Honours degree, a Masters degree or an equivalent qualification.
- Strong numerical skills with knowledge of a programming language (Matlab, R, C++, etc)
- Some experience collecting behavioural observations in the field would be an advantage but is not required.

References

1. Lusseau, D. (2007) *PLoS ONE* **2**, e348.
2. Barrett, L., Henzi, S. P., Weingrill, T., Lycett, J. E. & Hill, R. A. (1999) *Proceedings of the Royal Society of London Series B* **266**, 665-670.
3. Barrett, L., Gaynor, D. & Henzi, S. P. (2002) *Animal Behaviour* **63**, 1047-1053.
4. Flack, J. C., Girvan, M., de Waal, F. B. M. & Krakauer, D. C. (2006) *Nature* **439**, 426-429.
5. Lusseau, D., Whitehead, H. & Gero, S. (2008) *Animal Behaviour* **75**, 1809-1815
6. Henzi, S.P., Lusseau, D., Weingrill, T., van Schaik, C. P. & Barrett, L. (2009) *Behavioural Ecology and Sociobiology* **63**, 1015-1021.

Application

For informal discussions about the project contact David Lusseau: d.lusseau@abdn.ac.uk

To apply, send an application form with a covering letter and an up-to-date CV by email to m.pignotti@abdn.ac.uk. The application form can be downloaded from http://www.abdn.ac.uk/sras/word_docs/pgapp.doc

Send to Mrs M Pignotti, School of Biological Sciences, Cruickshank Building, Aberdeen, AB24 3UU. E-mail is the preferred mode of application – m.pignotti@abdn.ac.uk