Australian National University

PhD exit seminar: Information and behaviour in networks: social learning, personality and cultural transmission in a wild population of birds

Thursday 24 October 2013 1pm

Lucy Aplin Cockburn Lab, EEG

Gould Seminar Room (Rm 235) Gould Building (Bldg. 116), Linnaeus Way, ANU

Social interactions are important for many aspects of the life history of group-living species. Traditionally, many studies in behavioural ecology have focused on individuals without considering social association patterns, with an assumption of random interactions and free mixing. However such assumptions are often unrealistic. Social network theory provides a formal descriptive framework for the study of interaction patterns that integrates all levels from individual behaviour to population structure. During my PhD I used novel methods to study social processes on networks.

First, I explored the relationship between information use, cultural transmission and social organisation in two species of birds, the great tit (*Parus major*) and blue tit (*Cyanistes caeruleus)*. I found that tits can use social learning to acquire novel behaviours. Transmission of new behaviours occurs via social associations, and individuals use social network connections to gain information in ecological important contexts. Using automated tracking of individuals, I conducted a wild experiment to seed novel foraging innovations into replicate sub-populations. The results showed that new behaviours were transmitted faithfully through social networks, established and persisted to form local traditions. These local traditions were resilient to invasion from alternatives, suggesting transmission biases may be leading to a group-level conformity. Second, great tits are a wild model species for the study of personality. I assayed individuals for the personality trait 'exploration behaviour', and found that individual personality mediates social behaviour, both in short-term flocking and in longer-term social networks. This has potential consequences for the strength and direction of selection on personality. Overall, my findings highlight the importance of individual behavioural variation and information use to social ecology. I discuss implications for the non-genetic transmission of behaviour in animal populations.

Presented by

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