



YCCSA Seminar Series Autumn 2016

An interdisciplinary seminar series hosted by the York Centre for Complex System Analysis aimed at researchers from all disciplines

Social and ecological factors favouring the evolution of group living

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Ron Cooke Hub, RCH/204 at 13:30

Why do individuals live in groups? Since recognition of the principle that group living yields automatic costs but no automatic benefits, behavioural ecologists have sought to identify the conditions under which group living provides benefits that outweigh its costs. The diversity of group living systems in nature suggests that theoretical frameworks explaining the evolution of sociality must be both general and sensitive to the details of natural history. Here, I develop theory to understand group living in two puzzling cases: species that show cooperative breeding behaviour even though relatedness structures seem to disfavour group living, and species that shift seasonally from solitary to group living. In the first study, I ask how cooperative breeding can persist in bird populations with high rates of extra-pair paternity, which reduces the relatedness between helpers and the recipients of help. A viable explanation originates from a life history approach, considering lifetime fitness and the delayed benefits gained by individuals that help early in life. In the second study, I ask how seasonal changes in resources and competition influence the fitness consequences of sociality such that group living may be favoured in one season but not another. The model provides both a potential explanation for seasonal sociality across species, and clues as to why seasonally social species are usually more social during the non-breeding than the breeding season.

The seminar includes a refreshment break to fuel interdisciplinary discussion

***Ron Cooke Hub is on Heslington East Campus – accessible by free bus services
Nos. 66 and 44 running at frequent intervals from Heslington West.
The YCCSA Seminar room is on the second floor***