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Birds do it, bees do it; even *Acacia* thrips do it. Exploring cooperative behaviour in a tiny insect.

Thursday 2 February 2012 – 1pm

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Gould Wing Seminar Room, Building 116, Daley Road, ANU



Cooperation in nature is a paradox for behavioural ecologists, who interpret most behaviour as fundamentally selfish. Usually, ecologists explain cooperation as a special case of genetic selfishness involving helping relatives to outcompete non-relatives, or where alternatives to cooperation are costly.

Species that can choose whether or not to cooperate are especially helpful in understanding how this behaviour evolved. Recent work has shown that tiny female *Acacia* thrips (*Dunatothrips aneurae*) often cooperate to build nests from tied phyllodes of mulga (*Acacia aneura*). However, they pay a cost for doing so, since cooperating females get fewer offspring than solitary females. Evolutionary logic suggests there must be a benefit to counterbalance this

cost. However, too little is currently known about the basic natural history of this species for us to move beyond speculation about what the benefit of cooperation might be.

This seminar will describe ongoing work exploring the natural history and cooperative behaviour of *D. aneurae* in the field and lab. *D. aneurae* are inbreeding regularly, but they are not protandrous, and males do not appear to fight. Females require male presence to initiate nests, and cooperation is simultaneous rather than females joining nests sequentially. Females lose their wings upon nesting by abscission. Larger nests contain middens, probably for hygiene.

Cooperating is costly. Cooperation is not a response to crowding, or orientation on a tree, but may help females exploit preferred phyllodes. *D. aneurae* promises to become an interesting model system for asking questions about how and why cooperation evolved.

Presented by

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