ANU Seminar

EVOLUTION, ECOLOGY, & GENETICS
RESEARCH SCHOOL OF BIOLOGY

Thursday 24 November 2011, 1pm

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Testing hypotheses about sexual selection and species recognition using principles of visual physiology and sensory ecology

Bowerbird males build and decorate bowers which are used only for attracting mates and mating, and they steal from and destroy each others' bowers. This and the fact that bird vision is fairly well understood gives an unparalleled opportunity for experimenting with various aspects of signaling in undisturbed wild birds. Using principles of bird colour vision physiology we can show that they choose coloured objects which significantly contrast with their own plumage, the bower and the visual backgrounds. We can also show that the choice of colours is innovative; the idea of bowerbirds choosing colours which elaborate their own plumage is an artifact of biases in human vision. Great Bowerbird males make a 0.6m long bower avenue opening up to 1 m courts at each end. The courts are covered with gray and white objects and coloured objects are displayed on or over them. The coloured objects are outside the female's field of view until he displays them and then tosses them outside her view again, further increasing colour contrast. The courts consist of gray and white objects which increase in size with distance from the female within the bower avenue and this creates forced perspective which gives the illusion of a very regular pattern. This pattern regularity could be a direct target of female choice but also generates further illusions with the coloured objects. The quality of the forced perspective illusion significantly predicts female mating preferences. Given that almost all visual displays of almost all animals are presented from a predetermined direction and orientation relative to the receiver this raises the possibility that illusions may be used in communication in a wide variety of species.

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Seminars are held in the Gould Wing Seminar Room, Building 116 Daley Rd, ANU

ALL STAFF AND STUDENTS ARE WELCOME TO ATTEND