

PHENOTYPIC PLASTICITY OR CO-EVOLUTION?
TESTING THE ACCEPTANCE THRESHOLD MODEL
IN A HOST OF A SOCIAL PARASITE.

E. Brunner, P. D'Ettoire, J. Heinze

LS Biologie I, University of Regensburg, D-93040 Regensburg, Germany

Behavioural flexibility of social responses, such as aggression, has rarely been investigated in solitary and social insects. According to the acceptance threshold model, a recognition system should not be fixed, but context-dependent (Reeve, 1989). Recent studies on brood parasites have shown an adaptive phenotypic flexibility in host populations depending on variation in parasitism rate.

We are currently testing the acceptance threshold model in a host-social parasite system: the slave-making ant *Polyergus rufescens* and one of its host species, *Formica rufibarbis*. Two host populations, one where the parasite is present and one where it is absent, are compared in their level of aggression against the parasite over a period of 6 months. We test the possibility of a seasonal change in the acceptance/rejection threshold of the host species (expressed as aggression-level) according to the parasite's peak in activity (raiding and colony-founding season). We expect that the aggression-level of *F. rufibarbis* workers with a *Polyergus*-colony nearby should rise during this period, whereas the aggression-level of *F. rufibarbis* in an area without *Poylergus* should not show substantial changes.

Reeve HK, 1989 The evolution of conspecific acceptance thresholds. Am Nat. 133: 407-435