

The influence of personality and cognition on antagonistic interactions

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Eligible for student prize

Cognitive ability and personality influence how animals perform essential tasks, such as foraging, predation and defence. Cognition comprises the mechanisms by which animals acquire, process, store and act on information from the environment; these mechanisms include perception, learning, use of memory and decision-making. Animal personality describes behavioural variation between individuals of a species which is consistent over time and context. Personality traits include aggression, boldness and neophilia, some of which are heritable. To date, personality has predominantly been studied in vertebrates. However, invertebrates also possess personalities and are excellent model species, due to their short life spans, abundance, small size and less complex central nervous systems. My doctoral research will explore the influence of personality and cognition on antagonistic interactions between Aussie bronze jumping spiders (*Helpis minitabunda*), their predators and their prey. Jumping spiders can be trained and are visual hunters, which makes them suitable candidates for vision-based, controlled experiments. I will assess the cognitive abilities and personality traits of laboratory-raised *H. minitabunda*, and subsequently assess how those traits influence the spiders' behaviour in inter- and intra-species interactions. I will also evaluate whether cognitive and personality traits influence individual fitness. Further, I will assess whether communities of animals possess a stable balance of personalities and cognitive styles, comprising a personality and cognitive "landscape", and whether these landscapes differ between populations. Finally, I will ask what part cognitive style and personality play in successful self-introduction of a species to a novel environment.

