**Problem Solving in Bumblebees**

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Behavioural flexibility, the ability to recognize change in the environment and respond appropriately, has long been considered a measure of animal intelligence. Animals’ ability to solve ecologically relevant problems is increasingly used as a measure of behavioural flexibility. Foraging bumblebees engage in two behaviours that fall under the broad definition of problem solving: complex flower handing requires petals to be lifted and moved to reach nectar rewards and nectar robbing requires chewing through the bottom of a flower to get nectar without having to enter the flower. Both of these behaviours are learned and there are individual differences in how successful bees are at each task. We developed two laboratory problem solving tasks comparable to flower handling and nectar robbing. We gave bees repeated trials with each task and compared their performance to a typical laboratory measure of behavioural flexibility, discrimination reversal learning. Discrimination reversal learning requires an animal to learn to discriminate between rewarded and unrewarded choices and then reverse their responding when the reward contingencies are changed. We found that bees’ performance on the problem solving tasks improved with experience, indicating that the tasks involved learning. We also found that persistence, the length of time that bees attempted to solve the problems, and variability in behavioural output, the number of different ways the bees tried to solve the problems, were correlated with success.