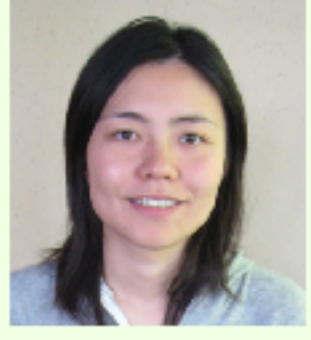


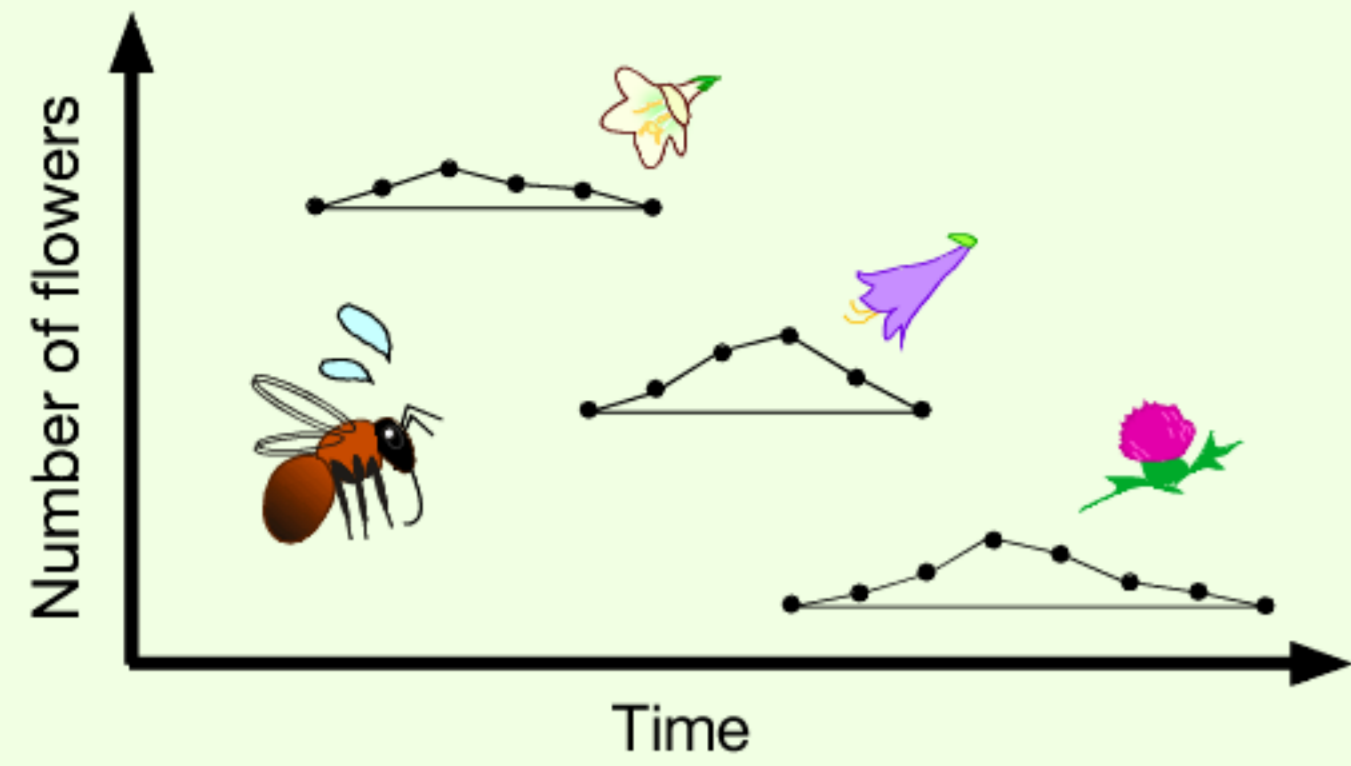
Contrasting responses of bumble bees to feeding conspecifics on their familiar and unfamiliar flowers



Lina Kawaguchi, Kazuharu Ohashi & Yukihiro Toquenaga (University of Tsukuba)

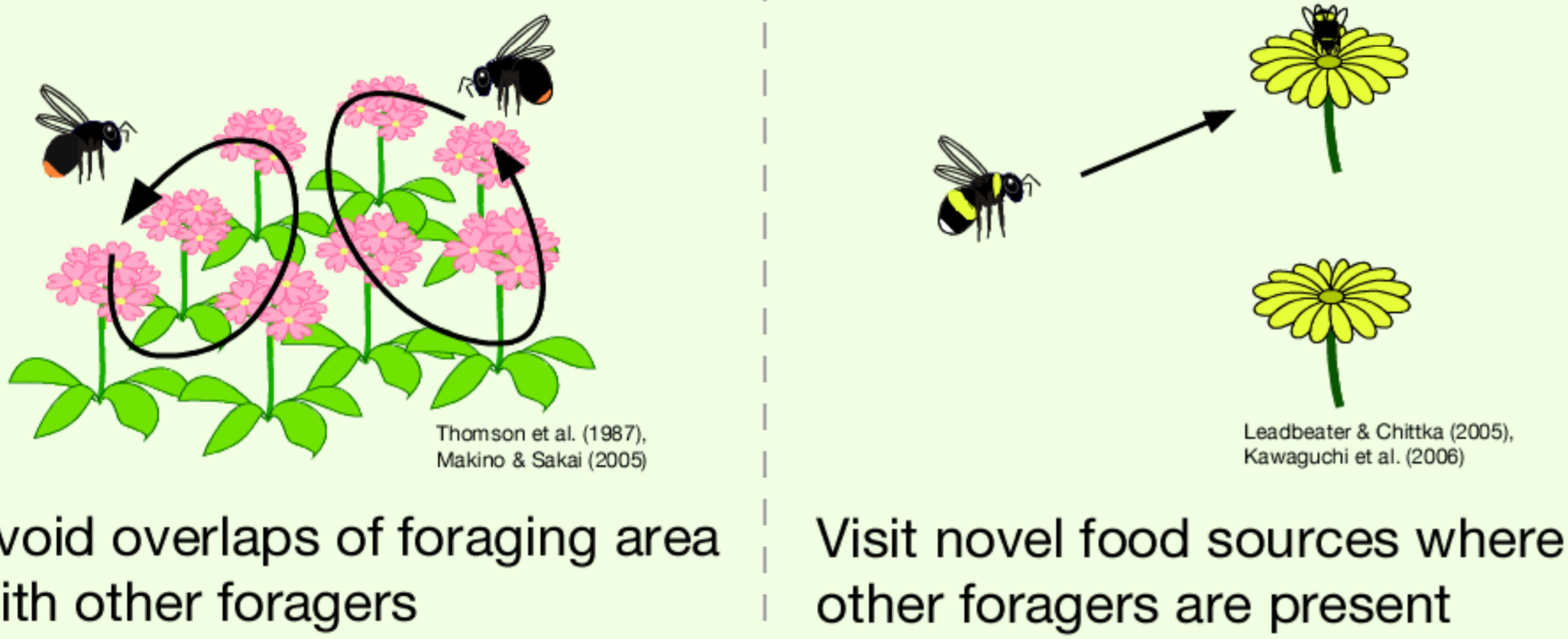
Introduction

Many flower visitors face considerable variability in food availability.



How do they explore and exploit floral resources efficiently?

To minimize competition for food... To reduce the costs of food-finding...

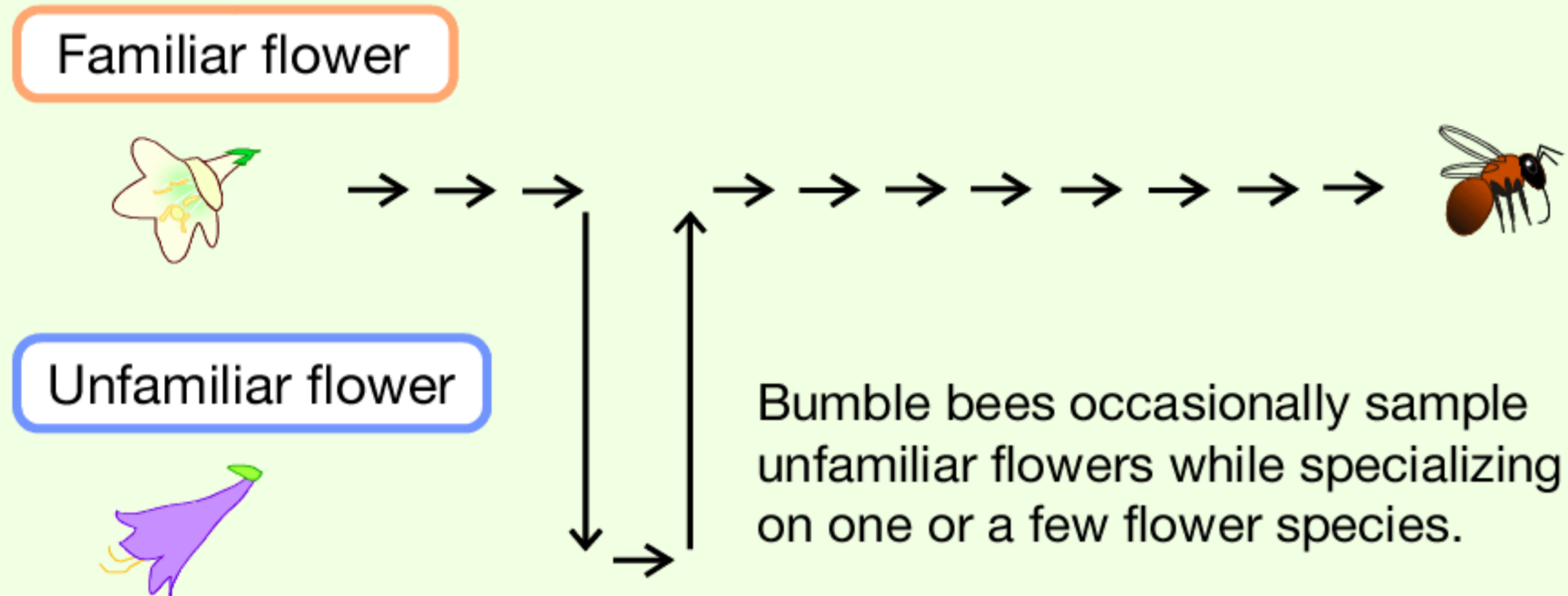


Avoid overlaps of foraging area with other foragers

Visit novel food sources where other foragers are present

Conditional use of alternative behavior?

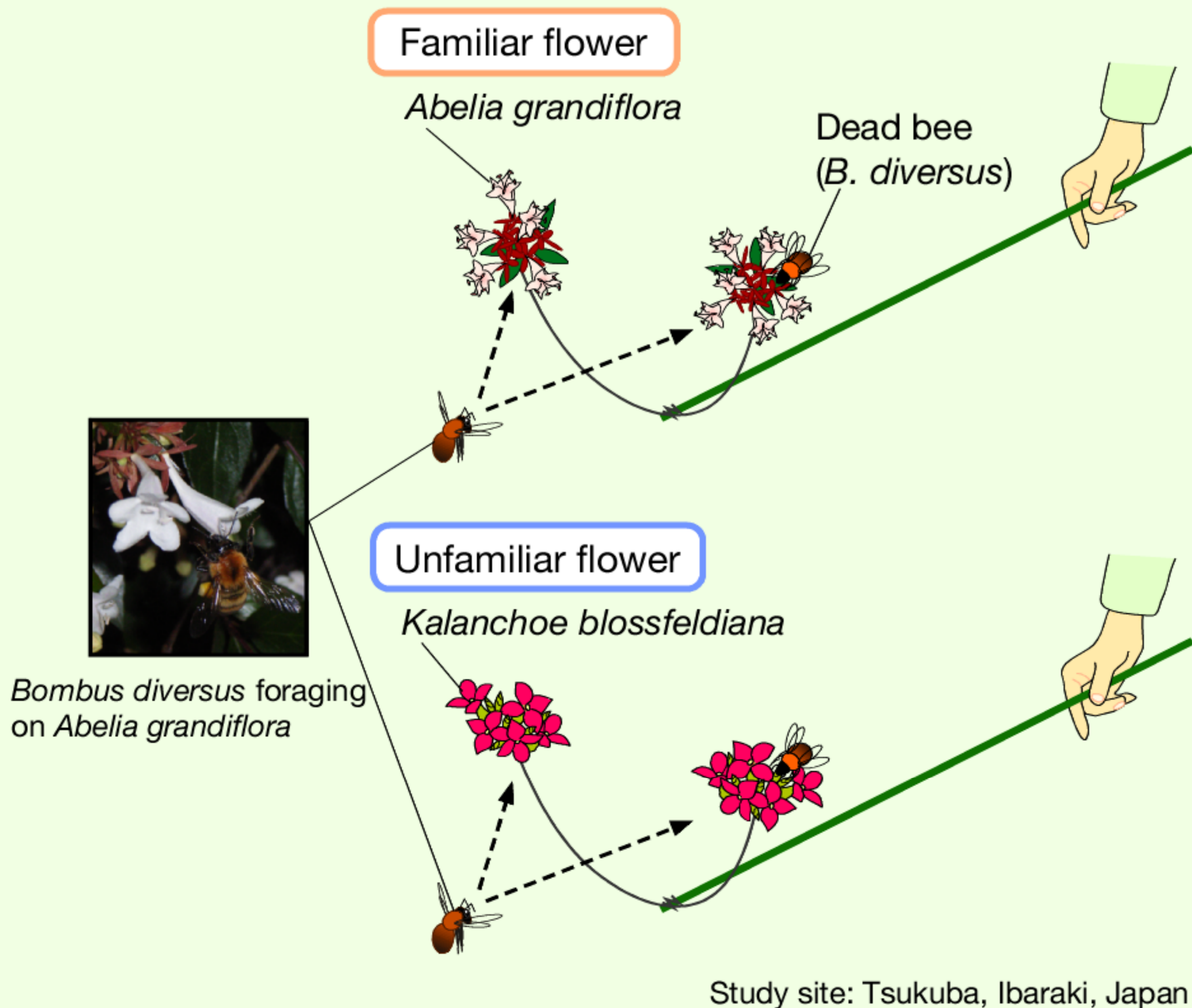
For example,



Do bumble bees alter their responses to conspecifics depending on the familiarity with the flower species?

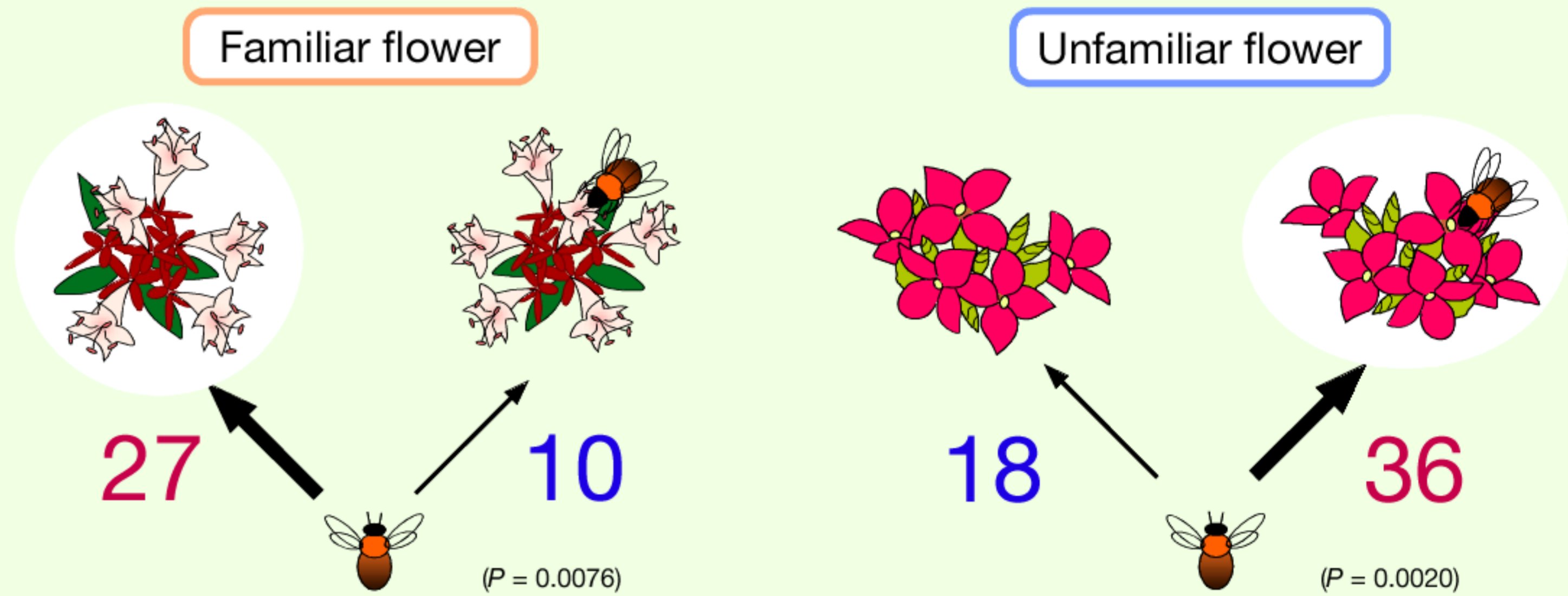
Materials & Methods

We allowed free-foraging bees to choose between two inflorescences, one occupied by a conspecific bee and another unoccupied.



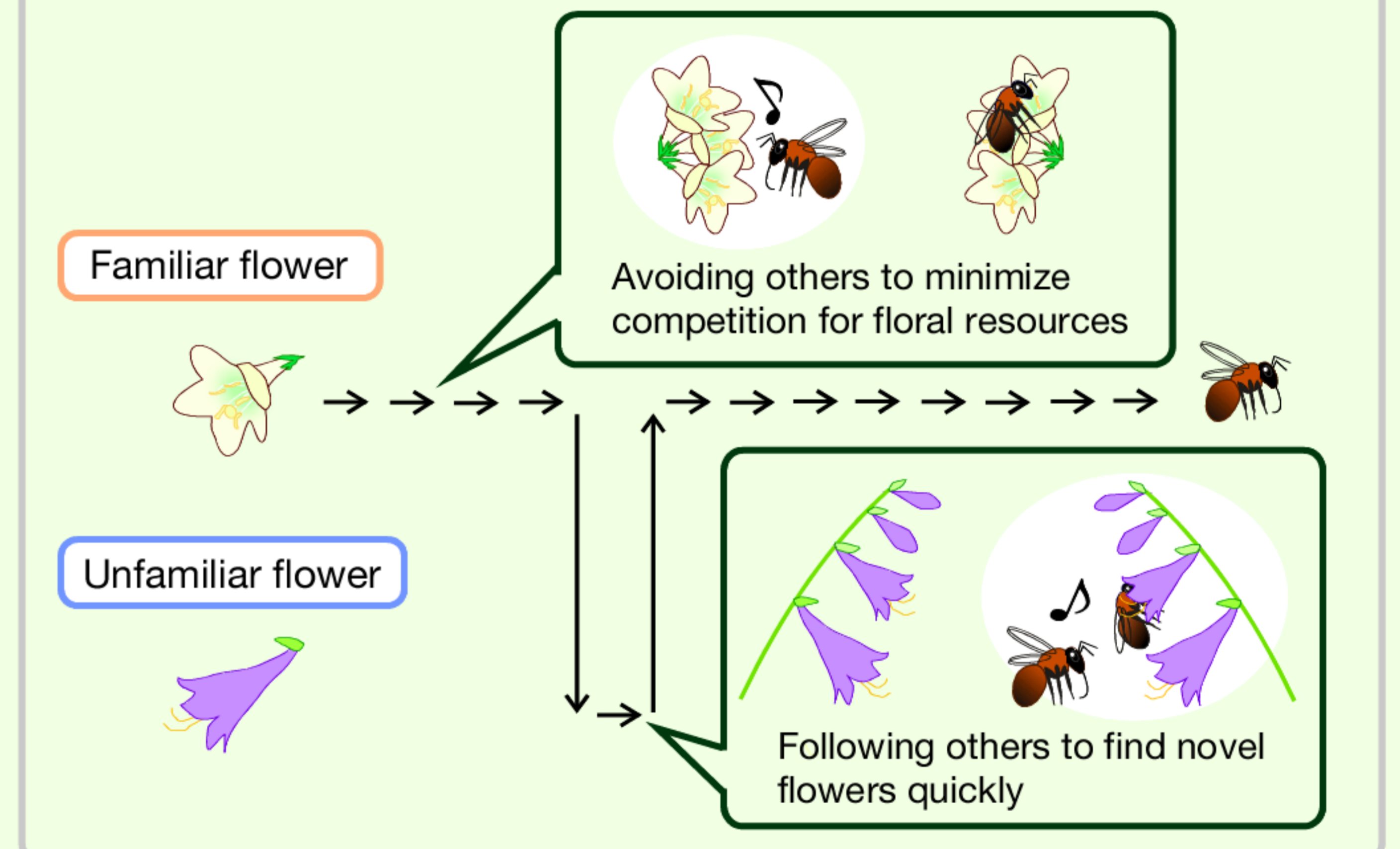
Results & Discussions

Number of bees' first landings on each inflorescence



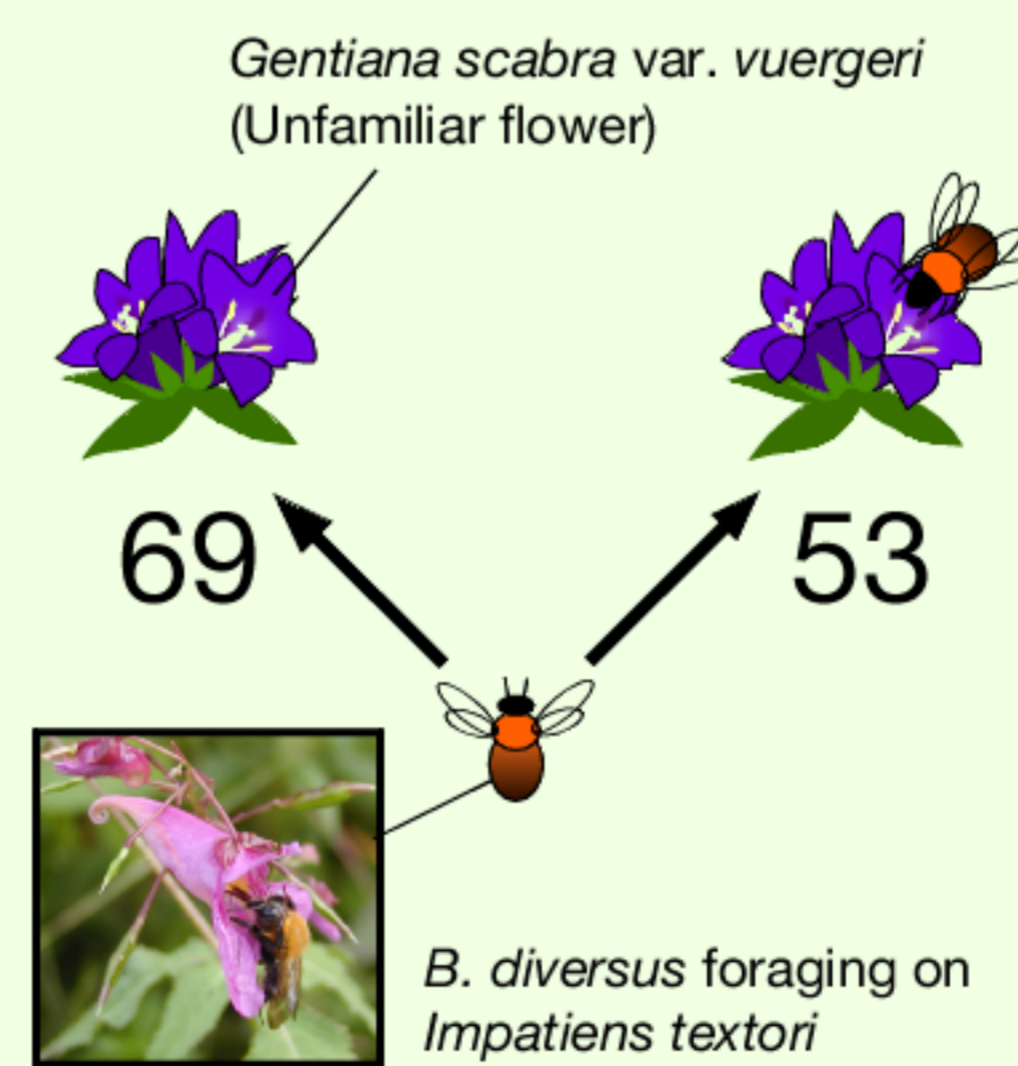
Bees showed contrasting responses to conspecifics according to the familiarity with the flower species.

This behavioral flexibility should allow foragers to both explore and exploit food resources efficiently.



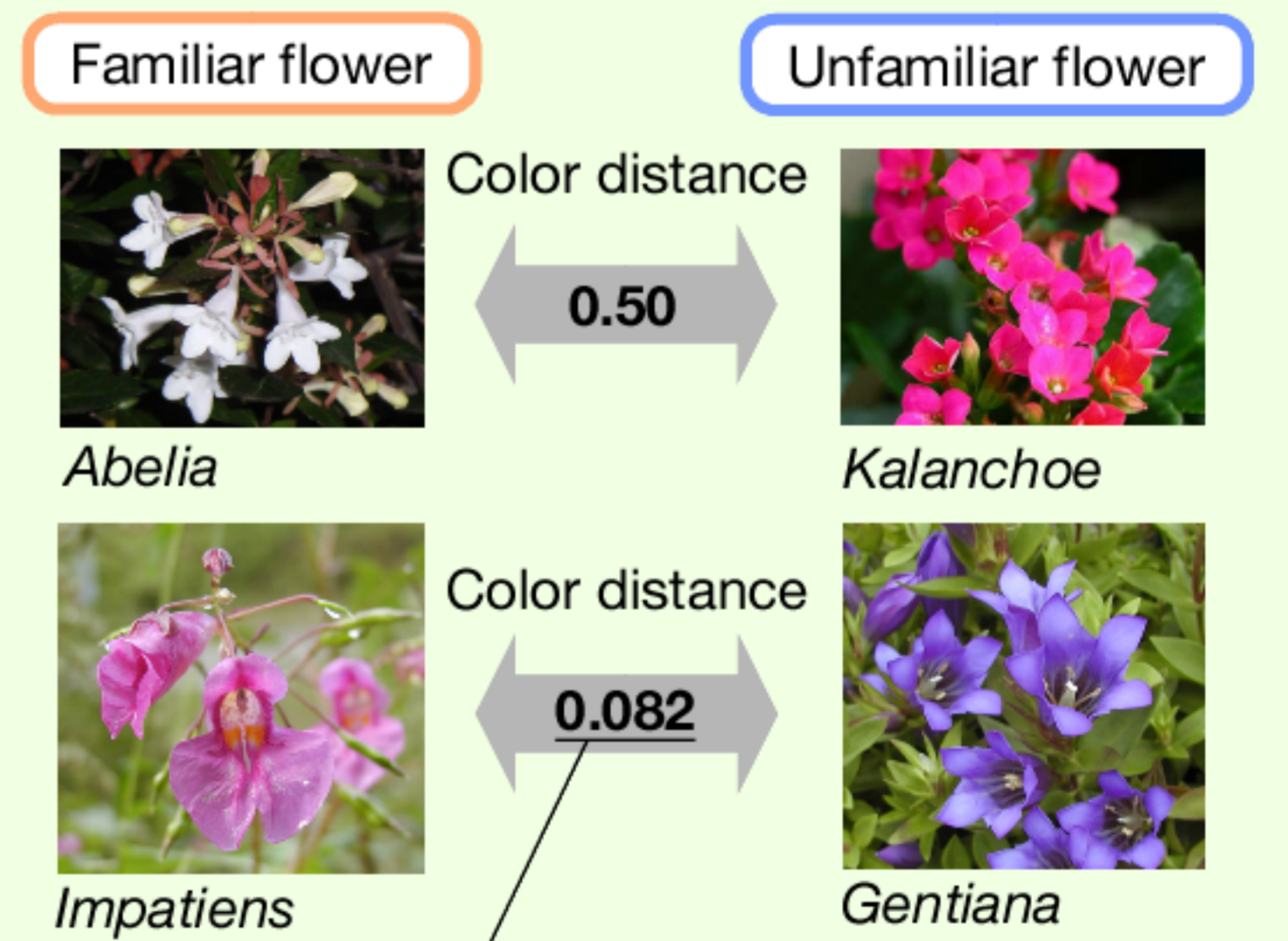
Interaction between floral traits and bees' information use

Experiment with another pair of familiar and unfamiliar flower species



Bees did not follow conspecifics. (P = 0.17)

Perceptual color distances* between familiar and unfamiliar flowers



Small enough for bees to generalize on different flower species * Chittka & Kevan (2005)

Bees may rely on the presence of other foragers only when sampling unfamiliar flowers whose traits differ greatly from the familiar one's.

Conclusion



Bumble bees can adjust their responses to other foragers depending on the familiarity with the flower species.