

# Study: How bees handle complex colors

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University College London scientists say learning how bumblebees discern flower colors under multiple lighting conditions may help in robotic development.

Researchers Beau Lotto and Martina Wicklein said although it's known how bees discriminate between surface colors when the color of the lighting changes, it is not clear whether they can solve more complex visual challenges, such as dappled light across a woodland floor.

To investigate, Lotto and Wicklein trained bumblebees to find artificial flowers of a particular color. The bees' ability to find that particular flower color was studied under four different lighting colors simultaneously -- UV yellow, blue, yellow, and green ambient light -- making it more difficult to discern than those seen in nature.

The bees were able to find the flowers under each light, even under lighting colors they had not previously experienced.

The scientists say that finding, suggesting bees have much more sophisticated color vision than previously thought, might help scientists understand how the human brain discriminates color in similar situations, and such information might also be used to create autonomous robotic systems.

The study appears in the online early edition of the Proceedings of the National Academy of Sciences.

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