

# Wasps able to tell the difference between 'same' and 'different'

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Northern Paper Wasp—*Polistes fuscatus*, Meadowood Farm SRMA, Mason Neck, Virginia. Credit: [Judy Gallagher](#)/Wikimedia Commons, [CC BY 2.0](#)

A trio of researchers at the University of Michigan has found that paper

wasps are able to distinguish between things that are the same or things that are different. In their paper published in *Proceedings of the Royal Society B*, Chloe Weise, Christian Cely Ortiz and Elizabeth Tibbetts describe experiments that involved training wasps and why they believe their results show similar abstract abilities likely exist in other insects.

Humans are, of course, quite capable of discerning the difference between things that are the same and those that are different, despite similarities. Most people can tell two objects are cars, for example, even if one is red and one is blue. Prior research has shown that other creatures have similar abilities; corvids, parrots, ducklings, dolphins and pigeons are able to discern differences between things that are the same or different and to make choices based on that understanding. And so can the European honey bee, a creature with a much smaller brain. In this new effort, the researchers tested the paper wasp due to its well-known ability to distinguish the faces of other wasps.

To test the wasps, the researchers trained groups by applying a small electric shock to respond to pairs of objects that were the same or had a different color. They then tested the wasps to see if they could apply what they had learned to different types of stimuli, such as different colors or smell. In so doing, they found that the wasps were able to do so approximately 80% of the time, which is far better than chance.

The experiments show that wasps are able to classify stimuli based on their relationships and to use that ability to make choices about their actions. This ability, the researchers suggest, shows that [paper wasps](#) are capable of abstract concept learning. They note that this ability in a creature with so few [brain cells](#) (less than 1 million) suggests that the ability is likely present in many other creatures with similar [brain](#) size.

**More information:** Chloe Weise et al, Paper wasps form abstract concept of 'same and different', *Proceedings of the Royal Society B*:

*Biological Sciences* (2022). [DOI: 10.1098/rspb.2022.1156](https://doi.org/10.1098/rspb.2022.1156)

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