



# Press Release

## Can plants learn to behave?

### VW Foundation funds Tübingen biologists investigating whether plants can be conditioned like Pavlov's dogs

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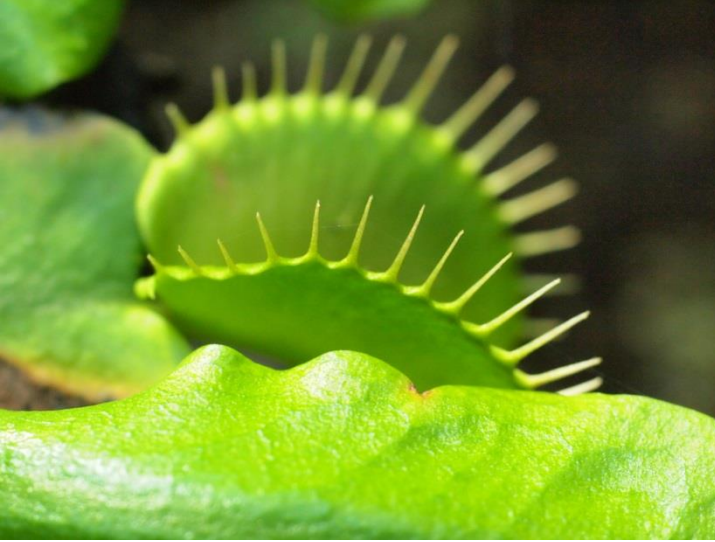
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Dr. Michal Gruntman and Professorin Katja Tielbörger from Tübingen University's Institute of Evolution and Ecology are to receive €100,000 in Volkswagen Foundation funding for their innovative project "Pavlovian Plants." In it, the researchers investigate whether plants, like animals, can be conditioned despite their lack of a brain.

If the biologists' idea is confirmed, it would mean the line between the animal and plant kingdoms is less clear than we think. Gruntman and Tielbörger suspect that plants do not differ from animals at the most basic level of behavior. Their model is the famous experiment by Russian Nobel Laureate Ivan Pavlov, who showed that dogs could be conditioned to drool even though no food was present - by giving them a signal which they linked with feeding; in Pavlov's experiment it was the ring of a bell.

"We believe that plants are certainly not passive green organisms, but that they can demonstrate learning," says Michal Gruntman. The researchers will be testing to see whether plants could likewise be conditioned using a signal - i.e., to demonstrate behavior which has nothing to do with the signal itself. They will use plants such as the Venus Fly Trap and Mimosa pudica to set off quick leaf movements which have nothing to do with food or danger. They will also use Arabidopsis, a common model plant in molecular biology, which can be used in follow-up investigations.

The Volkswagen Foundation's "Experiment!" funding program aims to challenge established knowledge; the program allows that the experiments may fail. However, in the past two years fewer than 3 percent of applications to the program have been approved.



Venus Fly Trap

Image: Alexandra Kehl/Tübingen University



Mimosa

Image: Alexandra Kehl/Tübingen University

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