

Smell of rotten fish detected faster than roses

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Johannes Frasnelli

(PhysOrg.com) -- Roses may smell better than rotten fish but the brain detects the latter faster and more accurately. This is according to a study published earlier this year in *Biological Psychology* by Johannes Frasnelli, a postdoctoral researcher at the Universite de Montreal Department of Psychology, along with colleagues at the University of Pennsylvania.

“This suggests the olfactory system reacts faster and more accurately to [stimuli](#) that signal a potential danger,” says Frasnelli. “We know the brain detects an aggressive facial expression faster than it detects a smiling face. This skill was likely retained by [natural selection](#) to help us identify immediate danger. An angry face is a potential enemy ready to attack.”

Frasnelli wondered if the same mechanism existed for [smell](#). “Until now experiments weren't constant because they compared a pleasant food

odor to an unpleasant non-food odor. This is wrong because unpleasant non-food odors aren't threats to our survival.” Therefore, Frasnelli and his colleagues at the University of Pennsylvania designed a new study.

Forty test subjects were asked to press a button as soon as they detected a smell at the same intensity level as the previous smell. The compared food odors were oranges and rotten fish. And the non-food odors were roses and dirty socks. On average rotten fish was detected in 1,300 milliseconds while all other odors were detected in 1,700 milliseconds.

“This tells us that for an [odor](#) to be detected quickly it must be food-based and unpleasant,” says Frasnelli. This is confirmed by the fact that the smell of dirty socks was described as more unpleasant than the rotten fish but the test subjects didn't detect it as quickly.

Therefore, the same protective measures that exist visually also exist in the olfactory system. In addition, both men and women reacted as quickly to the same threats.

Provided by University of Montreal

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