

Better odour recognition in odour-colour synaesthesia

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People who see colours while perceiving smells are better at distinguishing between different smells and different colours, and are better at naming odours, compared to a group without synaesthesia. Researchers from Radboud University have found this result.

"For centuries olfaction has been considered unimportant for humans, and people in the West are poor at naming odours," Dr Laura Speed, researcher at the Radboud University's Centre for Language Studies, remarks. "Yet there are individuals who experience vivid colour associations when they [smell](#) odours."

Rare: odour-colour synaesthesia

Synaesthesia is an extraordinary phenomenon where a sensation in one of the senses, such as hearing, triggers a sensation in another, such as taste. Letter-colour [synaesthesia](#) is the most common form, where people see letters as having colours, thought to be experienced by around 60% of people with synaesthesia. In comparison, [odour](#)-colour synaesthesia is more unique, with only 6% of people with synaesthesia having visual experiences when they smell odours.

Laura Speed—a psychologist interested in the relationship between [language](#) and perception—and Professor Asifa Majid—a linguist with a special interest in the diversity of languages, cultures and minds, are currently engaged in studying our ability to name smells. They wondered

if individuals with odour-colour synaesthesia might differ to people without synaesthesia in the way they think and talk about smells. "Could it be the case that having extra associations between colour and odour somehow helps language related to odour?"

Difficult: discriminating smells, naming odours

Speed and Majid asked synaesthetes and non-synaesthetes to name everyday odours on two separate days, and took established tests of odour and colour perception. The results provide evidence of better perception for both odours and colours. This is the first time improved [perception](#) in the sense that induces synaesthesia (smell), and the sense in which the synaesthesia is experienced (colour) has been documented.

"Synaesthetes are better at discriminating colours and smells, and in naming odours", Speed explains. "We demonstrate humans have greater potential abilities in odour language and thought than is usually observed for typical Western subjects. This is important evidence to understand the human sense of smell, our most neglected sense."

More information: Laura J. Speed et al. Superior Olfactory Language and Cognition in Odor-Color Synaesthesia., *Journal of Experimental Psychology: Human Perception and Performance* (2017). [DOI: 10.1037/xhp0000469](#)

Provided by Radboud University

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