

# Distracted people can be 'smell blind'

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Credit: Petr Kratochvil/public domain

'Inattentional smell blindness', or inattentional anosmia, has been proven to exist in a study from the University of Sussex. Just as it has previously been found that people can miss visual cues when they are busily engaged in a task, the same is true of smells.

And unlike visual stimuli, which would be noticed once the person stops being busy, the problem with a smell is that there is only a short window before the person becomes habituated to it, and the opportunity to notice it has passed.

Dr. Sophie Forster undertook the research with Prof Charles Spence at the University of Oxford.

Dr. Forster from the University of Sussex said: "We have discovered that people are less likely to notice a smell if they are busily engaged in a task. Many of us have experienced this: we've been working in a room when a new person has entered and said that the room smells of something such as someone's lunch, but that those already in the room had failed to notice it.

"What's more, we found that because habituation to smells is much stronger than other senses, if we habituate during a period of distraction we might never notice a smell. Previous research has told us that, unique to the sense of smell, there is only a window of approximately 20 minutes before the brain is no longer able to detect it—a phenomenon known as olfactory habituation.

"Our study could have a range of implications. For example, if you are busy focusing on a task you may be less likely to be tempted by food smells. Or if you don't want your friend to guess you are baking them a birthday cake in the other room, you could distract them with a puzzle for about 20 minutes.

"Our test was done with the smell of [coffee](#) but the next step for us will be to test 'threat smells' such as smoke and gas. Could it be, for example, that drivers who are concentrating on a busy motorway and perhaps are also engaged in a conversation, might may fail to notice a burning smell which should act as a warning sign? Or perhaps the same is true of

engineers who work busily in situations which place them at risk of a gas leak."

In the study the psychologists asked participants to enter a room in which they had previously hidden coffee beans, with the result that it smelled strongly of coffee. In the room the participants performed one of two versions of a visual task, designed to place either high or low demands on attention. After leaving the room participants were asked to describe the room, and then asked follow up questions to determine whether or not they had noticed the smell. Those participants whose attention was occupied by the more demanding task were 42.5% less likely to notice the smell. The participants were typically really surprised when they returned to the room afterwards to discover the strong coffee smell, which they had previously missed.

The second finding—that people may never notice a smell if they have habituated to it—was tested in a follow up experiment in which [participants](#) were asked what they could smell while they were still sitting in the room which smelt of coffee. The majority (65%) couldn't detect the coffee because they had habituated while they were doing the task.

The researchers were testing the 'perceptual load hypothesis', which is an idea that people can only perceive sensory information until their capacity is full. It explains the well known 'Did you see the gorilla?' inattention blindness study, where observers are asked to focus on the number of ball passes between players wearing white, and almost always miss the person in a gorilla suit who walks across the scene, does a little dance in the middle and walks off.

Dr. Forster said: "In the case of visual or auditory information, we tend to notice it once we are no longer busy. However, the brain can habituate to smells so strongly that they cannot be detected even when we are

specifically asked about smells in the [room](#). If this habituation occurs during the period that people are distracted by a [task](#), the opportunity to detect a smell may be missed. It is thought that the reason that there is a time limit for detecting smells relates to fact that the olfactory system evolved before the other senses, and therefore is more basic and animalistic."

"'What [smell](#)?' Temporarily loading visual attention induces a prolonged loss of olfactory awareness' will be published soon in *Psychological Science*.

Provided by University of Sussex

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