Study finds context is key in helping us to recognize a face

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Why does it take longer to recognise a familiar face when seen in an unfamiliar setting, like seeing a work colleague when on holiday? A new study published today in *Nature Communications* has found that part of the reason comes down to the processes that our brain performs when learning and recognising faces.

During the experiment, participants were shown faces of people that they had never seen before, while lying inside an MRI scanner in the Department of Psychology at Royal Holloway University. They were shown some of these faces numerous times from different angles and were asked to indicate whether they had seen that person before or not.

While participants were relatively good at recognising faces once they had seen them a few times, using a new mathematical approach, the scientists found that people's decisions of whether they recognised someone were also dependent on the context in which they encountered the face. If participants had recently seen lots of unfamiliar faces, they were more likely to say that the face they were looking at was unfamiliar, even if they had seen the face several times before and had previously reported that they did recognise the face.

Activity in two areas of the brain matched the way in which the mathematical model predicted people's performance.

"Our study has characterised some of the mathematical processes that are happening in our brain as we do this," said lead author Dr Matthew

Apps. "One [brain](link) area, called the fusiform face area, seems to be involved in learning new information about faces and increasing their familiarity.

"Another area, called the superior temporal sulcus, we found to have an important role in influencing our report of whether we recognise someone's face, regardless of whether we are actually familiar with them or not. While this seems rather counter-intuitive, it may be an important mechanism for simplifying all the information that we need to process about [faces](link)."

"Face recognition is a fundamental social skill, but we show how error prone this process can be. To recognise someone, we become familiar with their face, by learning a little more about what it looks like," said co-author Professor Manos Tsakiris from the Department of Psychology at Royal Holloway.

"At the same time, we often see people in different contexts. The recognition biases that we measured might give us an advantage in integrating information about identity and social context, two key elements of our social world."

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