

Can you guess what happened last?

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(Medical Xpress)—We can often predict what people are going to do. But is it possible to guess what it was that made them do it? Guessing what provoked a reaction by simply observing a brief sample of behaviour is something psychologists at The University of Nottingham Malaysia Campus (UNMC) believe we can do—by using much the same mentalising processes that we use to predict someone's future behaviour.

The study entitled 'Can People Guess What Happened to Others from Their Reactions?' was conducted by PhD student Dhanya Pillai using special eye-[tracking technology](#). The results have been published in the prestigious academic journal *PloS One*.

New research by Dhanya, supervised by Dr Elizabeth Sheppard and Professor Peter Mitchell in the School of Psychology at UNMC, has shown that people are able to infer backwards. In other words, successfully deduce from a small sample of behaviour what someone

had previously experienced.

The test

Dhanya said: "We developed a [methodology](#) to explore mentalising processes by taking into account the intricacies of real-[life situations](#).

"Putting my acting skills to the test I performed a range of events and filmed the person's response. By telling them a [joke](#), paying them several compliments, or keeping them waiting, I set out to provoke a variety of reactions. It was crucial that they didn't know the events were staged. They believed that they were waiting for an experiment which had not started so we were able to capture their natural reactions."

Thirty five [volunteers](#) were invited to guess what had just happened to the people they saw in the videos. Although the videos were only around seven seconds in length this proved sufficient for participants to identify the event correctly in the majority of cases.

Dr Sheppard said: "The people Dhanya filmed responded to the same event in a variety of different ways—so on receiving a series of compliments, some laughed, some looked confused and others looked embarrassed—yet volunteers watching the videos were able to figure out that they were responding to the same event."

Dhanya said: "To succeed in this task, it was necessary to retrodict, that is, to reason backwards from behaviour to infer a situation that had already happened. By recording the eye movements of each participant as they watched the videos I was able to analyse their decision making process."

The surprising results

It was expected that the volunteers would look more at the eye region of the face to gather crucial information about the person's reaction—such as emotion or mental state—to have the greatest success. But surprisingly, looking at the eye region didn't work as well as varied eye movement.

Dhanya said: "Although some previous research has implied that the eyes have a special significance for mentalising it was surprising to find that looking at the eye region was not associated with superior identification of the event. Instead our findings indicated that the eye movement strategy varied according to the reaction seen in the video."

The aim of Dhanya's research is to develop a paradigm that approximates many of the demands of real life situations where mental state reasoning might be required and to address some of the criticisms that might be levelled against previous research. The research might also help us discover how we flexibly understand the behaviour of others, even where it departs from how we would be inclined to act ourselves.

More information: www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0049859

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