

Facing the facts of autism

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Recognising a person's face can be challenging at the best of times, yet the task becomes all the more onerous for those with autism.

While popular theory suggests facial recognition deficit in people with [autism](#) stems from children actively avoiding faces and therefore not developing a specialised brain area for processing them, Flinders University PhD graduate student Darren Hedley is out to prove otherwise.

Using data from his just-completed thesis, Mr Hedley has come to the conclusion that people with autism may have an early or unconscious memory of faces – however the problem lies in the way they later process that information.

“People with autism have difficulty recognising peoples' faces and that's believed to contribute to social impairments such as understanding emotion and the thoughts and feelings of others, which is a characteristic of autism,” Mr Hedley said.

“But we think that part of the facial recognition deficit in autism may be because of difficulties with complex information processing, which may affect the person's ability to combine and process all that incoming sensory information and to then make an accurate response,” he said.

As part of his four-year PhD with the School of Psychology, Mr Hedley has performed a series of “eye-tracking” tests on adults with autism to determine their conscious and subconscious reaction to new and familiar

[faces.](#)

Participants were shown a face for the first time while a computer system recorded their eye movements and reaction time, with the test repeated later using the same, or a new and novel, face.

The results showed that although people with autism were overall impaired in their conscious recognition of the familiar face, their unconscious memory did, in fact, seem to recall the face.

“When you see something new you tend to make lots of short fixations looking at it and absorbing information but if you’ve seen it before the fixation patterns are different because your memory kicks in and you realise you remember it,” Mr Hedley said.

“So if a participant looked at a face they’d already been shown differently from the way they look at a new or novel face, this indicates they unconsciously recognised the face,” he said.

“But if we asked them outright whether they had seen the face before some of them would say no, even though the data showed they subconsciously remembered it.”

Mr Hedley said the findings indicated that people with autism may have “dissociation between implicit processing and explicit face recognition”, as opposed to an early memory deficit.

“It’s not so much the face isn’t recognised by the brain but there’s a problem in them being able to then use that information to say ‘I recognise this person’.”

In addition to his PhD research, Mr Hedley has been involved in a cross-cultural partnership to evaluate the effectiveness of an early detection

tool for children with autism that was developed at Flinders University and trialled in Mexico from 2004 to 2008.

A paper on the Autism Detection in Early Childhood assessment tool was recently selected as a winner of Flinders inaugural Best Student Paper Award, a now annual scheme which aims to recognise excellence in student research across the University.

Provided by Flinders University

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