Medical Xpress

Scientist studies brain activity, facial recognition as a step in autism research

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(PhysOrg.com) -- A video shows an actor telling the viewer happily, “clouds are in the sky.” But his facial expression is more akin to someone who’s about to spout off insults. Another video has an actress pleasantly relating that “the door is open,” but she appears to be afraid.

The seemingly confusing expressions are helping a Georgia State University researcher and colleagues to examine how people perceive the emotions of others during social interactions, as one step to better understand differences in the brain activity of people with autism.

Diana Robins, an assistant professor of psychology, studied the brain activity of study participants who viewed the videos. Using scans from an MRI machine, she examined the different areas of a part of the brain — called the superior temporal region — involved in emotional perception, as well as integrating both aural and visual cues.

Unlike other studies which have used static photos alone in testing facial and emotional recognition, Robins and colleagues used videos to test both auditory and visual perception at the same time.

“I was looking for a way to study more realistic social interaction, because individuals with autism have a lot of difficulty in interacting with other people,” said Robins. “So, we thought that taking the first step would be to combine both the face and voice, and to make it dynamic throughout the presentation of the stimulus.”

It's just one step in ongoing research to better understand the parts of the brain involved with social interaction, which may lead to behavioral interventions that could help people with autism gain better abilities to understand and relate with others.

Behavioral interventions include actively teaching the skills to recognize faces and emotional cues — something that typically is learned without effort for most people, but is difficult for those with autism.

"No one teaches you to recognize faces as a kid; you just learn to do it growing up," she said. "But with a very young child with autism, it may be that they need explicit teaching very early on to recognize faces and the meaning in facial expressions."

Robins and fellow researchers are working to screen toddlers with disorders along the autism spectrum — which range from mild to more profound behavioral disorders.

"We're finding out that in about a quarter of the kids who had autism spectrum disorders at age 2, they don't show the same signs by age 4," Robins said. "Some have residual problems, and some are indistinguishable from their typically developing peers."

To view videos used in the study in AVI or Quicktime format, visit Dr. Robins' faculty Web page at www2.gsu.edu/~wwwpsy/faculty/robins.htm

Provided by Georgia State University

facial-recognition-autism.html