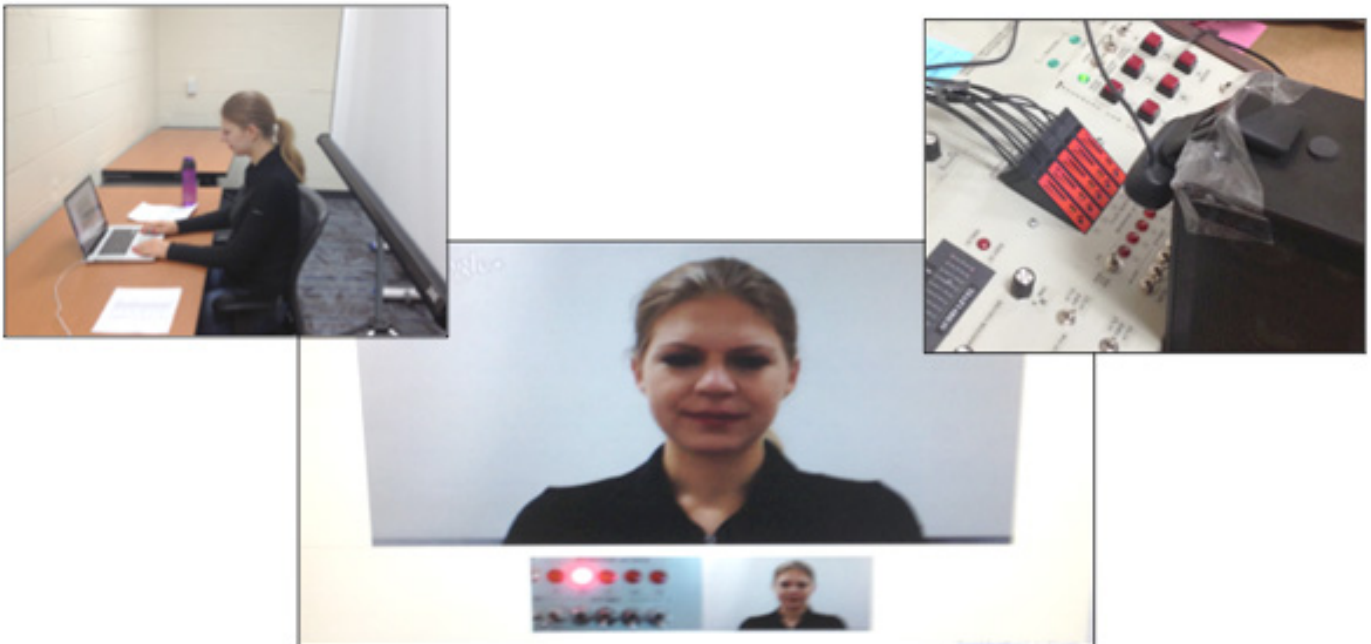


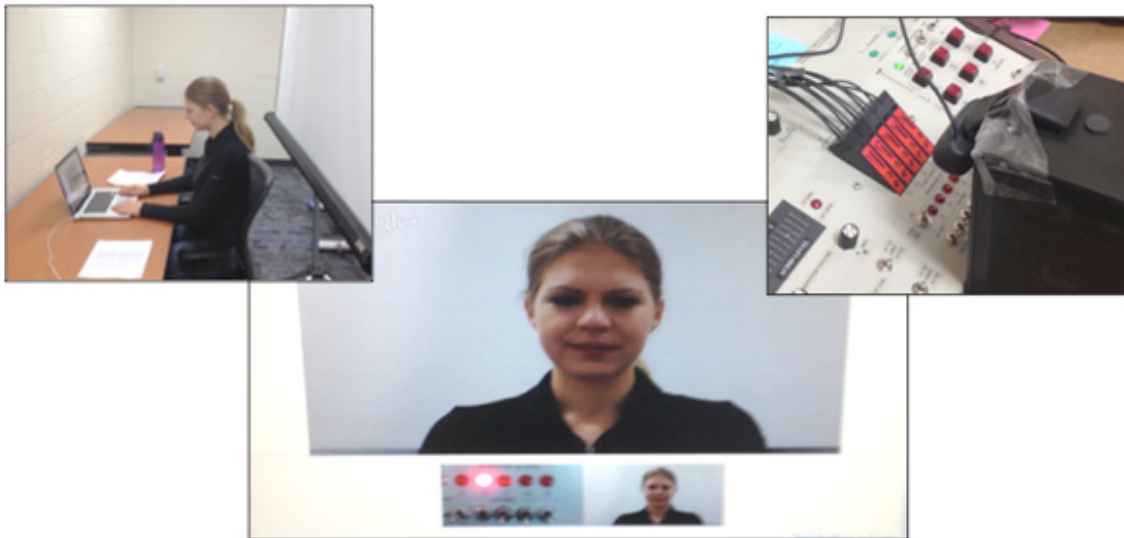
NEWS

Social brain is duped by fake personal interactions

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Face time: Researchers have designed a Skype-like setup inside a brain scanner to test responses to live interactions.

Believing that you're involved in a live interaction, even when you're not, is enough to activate the social brain, according to unpublished work presented today at the **2014 Society for Neuroscience annual meeting** in Washington, D.C.

Many studies have reported that individuals with autism have trouble with **theory of mind**, the ability to gauge what other people are thinking. One sticking point with this research, however, is that children and adults with autism often **pass theory of mind tests in the laboratory**, even when they have difficulty with the skill in the real world.

“What we really wanted to do is capture that real-life aspect — which has been so difficult for people with autism — and do it in the scanner,” says **Katherine Rice**, a graduate student in **Elizabeth Redcay**'s lab at the University of Maryland who presented the work.

Setting up a live interaction in a brain scanner is methodologically challenging, however, because live stimuli (such as people reading a sentence) cannot be precisely replicated in control conditions. So researchers instead tricked participants into believing that a prerecorded voice was live.

The experiment begins with a real, Skype-like social interaction between Rice, who's sitting in front of a laptop with a webcam, and a healthy adult participant, who sees Rice's face on a monitor

inside of a brain scanner.

Rice tells participants that they will hear her telling a story (such as: “There are two things on the breakfast menu. One is pancakes and one is a bowl of fruit.”). She also tells them that sometimes the computer will play prerecorded stories from two other female speakers. Then she switches off the video camera and the experiment begins.

“Either way, you’re hearing a human voice, but sometimes you think it’s me on a live feed, and other times you think it’s recorded,” Rice says. What participants don’t realize, however, is that there is no live interaction at all.

However, the brains of the participants react as if there is. In an analysis of 29 participants, regions of the social brain — including, notably, the **temporoparietal junction**, which is thought to be involved in theory of mind — were more active when the participants heard the voice they thought was live than when hearing the others.

“What’s amazing is, these effects are coming out of the exact same audio content, nothing social about it at all,” Rice says. The social brain switches on in the presumed live interaction “even when they’re just telling you about a breakfast menu.”

All of the participants believed the interaction with Rice was live, as they indicated on surveys after the experiment. Intriguingly, those with higher scores on the Autism Quotient, a scale of autism-like social behaviors, tended to rate the interaction as feeling less live, and also showed less activation in social brain regions, than those with lower scores. “Somehow it resonates less for them,” Rice says.

The researchers are repeating the experiment with 8- to 12-year-old children. If all goes well, they plan to also test children with autism.

For more reports from the 2014 Society for Neuroscience annual meeting, please [click here](#).