

NEWS

Toddler palace may house clues to social skills in autism

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A half-hour-long ‘playdate’ between a toddler and an adult could help answer a long-standing question about whether and how much a child with autism is interested in social interactions.

Researchers presented the new paradigm yesterday at the **2016 Society for Neuroscience annual meeting** in San Diego.

“There are two hypotheses about what’s driving why kids with autism have social deficits,” says **Barbara Thompson**, assistant professor of pediatrics at the University of Southern California in Los Angeles. One possibility is that children with autism **just aren’t interested in socializing**, and the other is that they actively dislike it.

It’s a difficult debate to resolve because even typically developing children can’t articulate much about their inner desires and motivations. That task would be even harder for children with autism, who have communication impairments.

To tilt at this windmill, the researchers built a ‘palace’ — a 7-foot-tall structure with gray faux-stone walls and a crenellated top — inside their lab. A set designer who worked on the television show “Six Feet Under” built the castle.

“That’s the advantage of being in [Los Angeles],” Thompson says.

Inside the castle are two toy-filled rooms, identical except for the color of their décor: green or orange. Over the course of a roughly half-hour-long exercise, children learn to associate one room with the presence of an adult who invites the child to play with toys — “Would you like to come and build a tower of blocks for King Kong to knock down?” — and cheerfully follows the child’s suggestions for play. The other room is empty except for an identical set of toys.

Conditioned contact:

The concept underlying this paradigm is known as conditioning, and goes back to Russian physiologist Ivan Pavlov's experiments with dogs and dinner bells. The specific design of the team's experiments is borrowed from rodent studies of addiction.

After the conditioning, the adult leaves the palace, and the researchers watch to see how much time the child spends in each room. So far, the researchers have tested typically developing children aged 2 to 5 years. These children spend four times as long in the room they associate with social contact after the conditioning as they did before. This confirms that typical children find social contact highly rewarding.

The researchers hope that learning how children with autism behave will help them understand the children's interest in socializing. If a child chooses to spend more time in the empty room, it indicates that she may have an aversion to social contact, for example. But if she chooses to spend equal time in both rooms, that is a sign that she may be indifferent to or uninterested in socializing.

Thompson and her colleagues have begun to test toddlers and preschoolers with autism, but the results are not yet available. They also plan to analyze whether a child's behavior in the castle is associated with his scores on autism questionnaires.

The paradigm could eventually be used as a tool to help guide treatment decisions for children with autism. A child who needs to overcome fear and anxiety about social interactions may require a different kind of therapy than one who needs to learn to tune in to them.

If it proves widely applicable, however, the palace paradigm might best be done in a virtual reality system, Thompson says. After all, not everyone has a Hollywood set designer handy.

For more reports from the 2016 Society for Neuroscience annual meeting, please [click here](#).