

OPINION

Animated theory

BY DEBORAH RUDACILLE

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Fans of Dancing With the Stars probably love the **Frith-Happé animations**, in which a big red triangle and a small blue one execute a series of deft maneuvers far more fluid than the awkward moves of B-list celebrities. The animations test 'theory of mind' — the ability to recognize and interpret **other people's desires, beliefs, and intentions** — in people with autism.

A new study by the researchers who created the animations pinpoints exactly which part of social understanding is interrupted in people with autism. The researchers found that the **basic building blocks of social cognition** are intact in people with autism, who spontaneously recognize and focus on social triangles to the same degree as healthy controls do, and are even able to adopt the triangles' perspectives. It's only at the final stage — correctly interpreting the social interactions — that they falter.

Dancing is a fairly simple interaction that people with autism have little trouble identifying — even when the 'dancers' are two triangles. They have more trouble decoding scenarios in which the triangles **'coax'** or 'mock' each other.

Interpreting those situations requires the observer to both assume the perspective of another and attribute intentions to the figures. Even when offered multiple-choice responses to questions about interactions between the figures, people with autism have **difficulty identifying the correct emotions**.

In the study, 19 adults with autism and 18 healthy individuals of roughly the same age and intelligence watched the animations as researchers tracked their eye movements. At various times the triangles floated randomly, moved purposefully or engaged in a social interaction.

Social Cognition-Animated Theory from [simonsfoundation.org](https://www.simonsfoundation.org) on [Vimeo](https://www.vimeo.com).

The researchers also incorporated scenes in which a triangle was given a 'nose' —a dot to the left or right of its 'face' — in order to assess participants' ability to take on the visuo-spatial perspective of the object.

When asked to press either a left or right button every time a dot appeared next to the red triangle, those with autism were able to correctly identify the nose, showing an ability to spontaneously adopt the object's perspective. Like the healthy controls, they also focused more intently on the triangles engaged in a complex social interaction.

But when asked to describe what the triangles were doing, people with autism tended to over-interpret, attributing intention to the triangles that were simply floating or moving in a straight line like billiard or tennis balls. In the more complex interactions, their interpretations weren't always accurate, mostly because they tended to use language expressive of mental states 'indiscriminately,' say the researchers.

I found these results particularly poignant — and not so different from the efforts of game but rhythmically-impaired celebrities to dance the tango. Paying attention to social cues does not ensure a correct interpretation, any more than knowing the right steps guarantees a graceful dance.