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[\[US\]\[Neuroscience\] Neurons That 'Mirror' The Attention Of Others Discovered](#)

ScienceDaily (May 20, 2009) — Whether a monkey is looking to the left or merely watching another monkey looking that way, the same neurons in his brain are firing, according to researchers at the Duke University Medical Center.

(Credit: Ben Hayden / Courtesy of Duke University Medical Center)

"We speculate that the neurons' activity may lie beneath critical social behavior, such as joint attention," said Michael Platt, Ph.D., Duke professor of neurobiology and evolutionary anthropology and senior author of the study published in the Proceedings of the National Academy of Sciences. "If social inputs to the neurons are disrupted, that might contribute to the social deficits seen in autism and other disorders."

People spontaneously follow the gaze of other people, and this joint attention helps promote social bonding, enhance learning, and may even be necessary for the development of language. People who can't do these things are at a decided disadvantage, and may fail to develop normal patterns of social interaction, Platt said.

In the experiment, the researchers first established whether a particular neuron responded when the monkey himself gazed to the left or to the right. Then they presented the monkey with photos of monkeys randomly looking left or right, thus matching the preferred direction of the neuron on half of trials. Images of monkey faces randomly lit up for 100 to 800 milliseconds (about the time it takes a fastball to leave the pitcher's hand and cross home plate) and then a yellow box appeared randomly either on the left or right. Monkeys had to shift their gaze from the center to the box as quickly as possible and maintain fixation for at least 300 ms to receive a juice reward. Typically, monkeys were faster to shift gaze to the box when they had previously seen a picture of a monkey looking in that direction—presumably because their own attention had shifted in the same direction.

The researchers learned that the time period in which they saw the response by the neuron was also the time period in which they saw the biggest behavioral effect. "If the monkey saw another monkey for 100 or 200 milliseconds looking in a certain direction, that's when he is most likely to follow the gaze of that monkey or share the monkey's attention," said Platt.

For the information, please find the reference provided.

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