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Don't Watch That Clumsy Player Too Closely



Expert Athletes May Perform Worse After Watching Novice Actions



By [Tori Rodriguez](#) | Jun 11, 2015



If you excel at a sport, you may want to look away when greener athletes take their turn. A new study finds that watching a novice's actions can deteriorate expert performance.

In experiments reported online last fall in *Scientific Reports*, researchers asked expert dart throwers to watch videos of novices and predict where their darts would land. The experts got feedback throughout the process, which helped to improve their predictive abilities. The findings show that as the experts became more accurate in predicting the novice dart throwers' actions, their own performance declined. The effect was task-specific: their performance was not affected by predicting the actions of novice bowlers.



JASON LEE (darts); ISTOCKPHOTO (action icons)

Researchers have long debated whether motor system neurons are involved in understanding others' actions because past studies have been correlative or inconclusive. In the new study, the fact that experts' performance degraded steadily as their predictive ability improved provides causal evidence that the motor system is involved in at least some aspects—specifically outcome prediction—of understanding others' actions, explains Gowrishankar Ganesh, a neuroscientist and roboticist at the National Institute of Advanced Industrial Science and Technology in Japan, who co-authored the study with Tsuyoshi Ikegami, a neuroscientist at the Center for Information and Neural Networks in Osaka.

The authors hope their work will one day help in cognitive and motor rehabilitation. More immediately, they suggest that athletes should avoid focusing too much on the performance of less skilled teammates. Teachers and coaches, on the other hand, may not need to worry about averting their eyes from their students' efforts. "Although the evidence is preliminary, our data found that experts who teach show less deterioration," Ganesh says. "We believe that because of their extensive experience with students, teachers can learn to not be affected by the process of understanding."

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Thinking with the Body

In a new study, expert dart players became worse at throwing after studying novice players. The effect is an example of embodied cognition: the motor system is necessary to comprehend the actions of others—and the body's movements are affected by the new understanding. Here we sketch out a few other examples of this type of bodily cognition, as revealed in past studies.

Baseball players' ability to predict where a fly ball will land depends on how they move in relation to the ball, not their brain's ability to calculate its trajectory. Players move in whatever direction keeps the ball at a constant speed in their field of vision.

When dancers watch someone perform a familiar style of dance, their brain activity looks like it would if they were making the movements themselves. Neural response is less focused when dancers watch an unfamiliar style.

Acting out a story helps people remember it. One study showed that participants who acted out a monologue had better recall of the text 30 minutes later compared with people who read, discussed or answered questions about the story.

This article was originally published with the title "Don't Watch That Clumsy Player Too Closely."

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