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SCIENCE FILE

## Blame the referee's brain

Researchers studying Wimbledon games find hu when hit close to the line.

November 01, 2008 | Karen Kaplan | Kaplan is a Times staff v

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UC Davis scientists have confirmed what tennis great Jo McEnroe so colorfully alleged on the court: Wimbledon referees make bad calls when judging balls hit close to th line.

It's not a matter of incompetence, as McEnroe frequently asserted. Rather, the human brain is hard-wired to misre the true position of fast-moving objects, including tennis balls whizzing by at more than 100 mph.

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It takes about 100 milliseconds for the image of an object and a little longer for the brain to become aware of it. The anticipating the object's location.

At the All England Lawn Tennis Club, the inevitable resubeing farther along in its trajectory than it actually is, acciournal Current Biology.

David Whitney, a vision scientist at the UC Davis Center 4,457 points from the 2007 Wimbledon championship a or close to the out-of-bounds line. Using slow-motion rej computerized ball-tracking system, the researchers identifications of the computerized computerized ball-tracking system.

Without any delay in the brain, the referees would be equal that are out. Instead, the researchers found that 70 of the called "out" but were actually in.

A follow-up analysis of the 2008 Wimbledon tournamen year went the same way.

"This is not a problem with referees," Whitney said. "Thi

Bad calls are probably evenly distributed between teams don't influence the outcome of a match.

"If there's a missed call, it could change your psychologic

The researchers concluded that tennis players should for ball was incorrectly called out, since they are more likely They also suggested that Hawk-Eye replace human judgi

Wimbledon spokesman Johnny Perkins said the tournar the entire sport embraced the idea, "and that would appe

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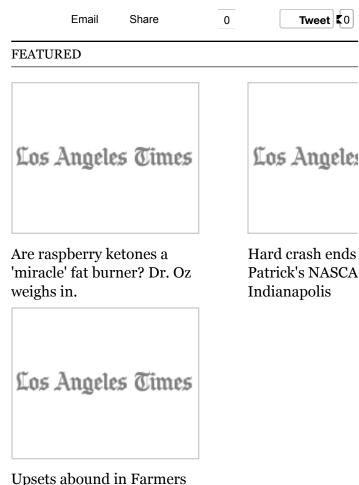
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