

All-star pitchers will hate instant replay, according to new research

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It's a historic year for Major League Baseball, as the organization introduces its expanded use of instant replay, allowing umpires to review home run calls, forced plays, foul balls and more. But the one decision still left fully in the hands of umpires is the calling of the strike zone. Should the rules be expanded for review of those calls? A new study from Columbia Business School's professor Jerry Kim says reviewing strike zone calls may be the one call All-Stars pitchers would want reversed.

"Instant replay will become public enemy no. 1 for All-Star pitchers this year," said Professor Jerry Kim, assistant professor at Columbia Business School and author of the research. "Our empirical evidence proves that most of the wrong calls during at-bat scenarios are in the ace's favor. The Clay Kerhsaws, and Yu Darvishes of the world better watch out."

The research is titled, "Seeing Stars: Matthew Effect And Status Bias in Major League Baseball Umpiring," and is soon to be published in *Management Science*. Kim and his research partner, Brayden King, associate professor of Management and Organizations at Kellogg School of Management, found that status, as measured by the average number of All-Star appearances (per year) the pitcher had made, clearly influenced umpires' calls. The results were as follows:

- 68, 863 mistaken pitches should have been called a ball and were called a strike
- An umpire is about 16% more likely to erroneously call a pitch outside the strike zone for an All-Star pitcher than he is for a player who has never gone to an All-Star game.
- An umpire is about 9% less likely to mistakenly call a real strike a ball for an All-Star.
- The strike zone gets bigger for All-Star pitchers and tends to shrink for non-All Stars.

Even more surprising is what the research identifies is the intriguing source of distraction for these men whose job is to make sure the integrity of the game is sound in an objective, unbiased way: the umpires can't help but be 'star-struck' over the All-Star pitchers.

Kim and King found that umpires, just like all humans are hard wired to place rankings on people and use that information to make decisions. Time and time again, the umpire's subconscious mind was influenced by status and reputation causing what the research refers to as the 'Matthew Effect', or an accumulated advantage.

"Ultimately, non All-Star players, with good performance, find themselves handicapped by comparison, while All-Star players may find themselves rewarded even when they are undeserving," said Kim.

The Research

Kim and King reviewed nearly 800,000 pitches using the MLB's four high-speed cameras installed in each League stadium. The cameras take 25 snapshots of each pitch, capturing the speed and spin rate of each pitch from different angles, and recording where in the strike zone each pitch lands.

This data, from almost 5,000 games in 2008 and 2009, gave the researchers exact measures of quality that they could compare to umpires' actual calls, which they compared with player stats and All-Star Ballot standing. The two used the MLB's official strike zone images, alongside the exact coordinates from the videos to determine whether the pitch was an actual ball or strike.

In order to understand the condition under which an umpire makes mistakes,

The researchers looked at pitches where the ball was outside of that strike zone, but the umpire

called a strike or conversely when the pitch was inside of that strike zone but the umpire called a ball.

Provided by Columbia Business School

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