THE OMISSION BIAS IN SPORTS

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WHERE ARE THEY NOW?

Sports Illustrated

Wimbledon

Tennis Epic

Nadal Defeats Federer in the Greatest Match Ever

Tobi Westheide

SCORECASTING

"The closest thing to FREAKANOMICS
I've seen since the original."

— Steven D. Levitt, coauthor of FREAKANOMICS

HOME GUTSY

DOWN YDS TO GO QTR

THE HIDDEN INFLUENCES BEHIND
HOW SPORTS ARE PLAYED
AND GAMES ARE WON

Tobias J. Moskowitz and L. Jon Wertheim

Sports Illustrated

TWO BRUTAL OR THE FUTURE?
Ultimate Fighting

America's Fastest Growing and Most Controversial Sport

Tobi Westheide
BRIAN WILSON, GIANTS RELIEVER
Motivation

- Experimental psychology finds an effect called the **omission bias**

- Humans are biased to favor **inaction over action**
  - Acts of *omission* are viewed as far less harmful than acts of *commission*, even if the outcomes are the same or worse
  - Inaction is viewed as less causal, less blameworthy, and more moral

**Example 1: Causation**
- A flu epidemic will kill 10 out of 10,000 children
- Vaccine for flu causes 5 deaths out of 10,000
- Question to parents surveyed: would you vaccinate?
Example 2: Morality/Blame

- John faces a tough opponent tomorrow in a critical match
- The opponent is allergic to a food substance
  - Scenario 1: John recommends food to his opponent containing the allergen
  - Scenario 2: Opponent unknowingly orders allergenic food, John says nothing
- Which is worse?

Legal environment: sharp distinction between “doing harm” and “failing to rescue”

First oath of doctors: “do no harm” not “do some good”

Is telling a lie worse than withholding the truth?
So, is there significant (omission) bias in referee decision making?

 Officials make decisions throughout the game that we can group into 4 categories:

  1. Correct calls
  2. Incorrect calls
  3. Correct non-calls
  4. Incorrect non-calls

Omission bias implies officials will be more concerned about incorrect calls than incorrect non-calls.

Look at huge dataset of decisions made by officials:

• Large sample size of decisions
• Huge variation in situations (crucial vs. non-crucial)
• Examine across 5 sports and 10 different leagues
• If see same effect across sports, consistent with human psychology
MLB: Empirical Strike Zone, 3-0 vs. 0-2

Tick marks represent ½ inch. Box represents rules mandated strike zone.
More results:

- “Star” hitters get even smaller strike zone when facing two strikes
- “Star” favoritism or omission bias?
- Omission bias. Why? Because “star” hitters also get expanded strike zone when facing three balls

- *Everyone wants to see Albert Pujols swing!*
- Opposite results for “star” pitchers

- Umpires letting players, especially star players, determine their own fate, but not necessarily favoring them
Chris Webber
The NBA

➤ Omission bias also predicts that the rate of calls should diminish as the game nears the end and score gets closer
The NFL: 2001-2009 (~0.5 million plays)
Eli Manning
Referee Penalty Calls Across Minutes Assigned Relative to First Period

- 1st period
- 2nd period
- 3rd period
- OT

Penalty Types:
- 2 MINUTE PENALTIES
- 4 MINUTE PENALTIES
- 5 MINUTE PENALTIES
- 10 MINUTE PENALTIES
- MATCH (REMOVED)
All Sports

- Results remarkably consistent across all sports (and countries)
- For all sports, effect stronger if game is close and weak when score is lopsided
- Omission bias strongest when game situation is crucial
Bias vs. Error

- Implies a bias in officiating, which may be worse than a random mistake

- Random errors can’t be predicted, can’t be gamed, and should balance out over time, not favoring one team vs. another

- Bias, however, is predictable, can be gamed, and doesn’t balance out

- We want games to be called accurately, but we really want them without bias
Conclusions

➤ Sports officiating a great place to test behavioral decision making

➤ **Omission bias** is alive and well among professional sports officials
  • E.g., they’re actually human!

➤ Large, predictable biases in referee calls
  • Can be gamed by savvy players and coaches

➤ Effect seems to **exist in all sports**
  • Evidence is particularly well-identified in MLB, highly suggestive in the NBA, NFL, NHL, and European soccer

➤ **Not necessarily a bad thing. As fans we may want the referees to “step back.”**
➤ But, at the same time, this means they aren’t always abiding by the rule book.