SCORECASTING

HOME GUESTS
DOWN MISCALLS QTR

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

TOBIAS J. MOSKOWITZ and L. JON WERTHEIM
Motivation

• Unconventional thinking has payoffs
• Challenges conventional “wisdom”
• Understand where it comes from
• Apply rigorous analysis to find (hidden) truths
• Economics + Behavioral + Data (lots of it)
Goals

• Test conventional thinking and clichés
• Deconstruct “sports myths”
  – Are they true?
  – If so, why? If not, why do they exist?
• Discover other hidden forces
  – New perspective on old ideas; new ideas

• Settle some bar fights, . . . but probably start many more.
Home Field Advantage

• Indisputably it exists
  – For all sports
  – At all times in history
  – In all geographies

• Why does it exist?

• Not for the reasons you might think.

• First, the facts . . .
by Tobias J. Moskowitz and L. Jon Wertheim
Home Field Advantage

• Some facts to remember:
  1. Exists in every sport
  2. Different across sports (soccer vs. baseball)
  3. Same for a given sport no matter where played
  4. Stable over time (same as 100 years ago)
Myth #1: Crowd Support

• How do you test for crowd effects exclusively?
  – Free throw shooting in the NBA
  – Shootouts in the NHL
  – Punters/kickers, QB’s in the NFL
  – Pitchers and batters in MLB

• If not much effect in these situations, how much impact could it have generally?
Myth #2: Travel Fatigue

• What happens when two teams from the same (or nearby) city play each other?
• What happens when two teams from vast distances play each other?
  – U.S. vs. Canada?
• Advantage is same as it was 100 years ago
• In soccer, no difference in advantage for vast vs. miniscule countries
Myth #3: Schedule Bias

- Road teams (in the NBA and NHL) play tougher schedules than home teams
  - More back-to-back games
  - More games concentrated in short time span
- NCAA

- But scheduling accounts for < 1/5 of HFA
- And, it does not affect NFL, MLB, or soccer
Myth #4: Home Familiarity

- Are teams built to take advantage of their unique home field characteristics?
  - Cold vs. tropical weather teams in the NFL
  - “Hitter” and “Pitcher” ballparks in MLB
  - NBA or NHL?

- Baseball has largest stadium differences, yet lowest home field advantage

- What about *dark arts* and sabotage?
The *Real* Reason Behind HFA

- Referee bias toward the home team
  - How do you identify this?
  - Need to examine something controlled by referees but not influenced by players

- Extra “injury” time in soccer
  - Also, red and yellow cards, fouls, free kicks
The *Real* Reason Behind HFA

- Strike-ball calls by umpires in MLB
  - Home batter and pitcher favoritism
  - Crucial vs. inconsequential situations
  - Umpire monitoring technology (QuesTec)

- Over a season visitors get 516 more strike outs and 195 fewer walks on the *same* pitches
The Real Reason Behind HFA

- July 3, 2009 Cubs vs. Brewers . . . At Wrigley
The *Real* Reason Behind HFA

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The *Real* Reason Behind HFA

- **NFL:** penalties, yards/penalty, turnovers
  - Instant replay challenge (1999)

- **NBA:** fouls, turnovers, violations
  - Subjective calls: travelling, offensive fouls
  - Objective calls: shot-clock violations

- **NHL:** same pattern
  - Subjective calls vs. objective calls
  - Remember shootout results?
Why Do Referees Favor the Home Team?

- No conspiracy, but psychology
- Social influence
  - Humans conform to group opinion because of:
    1. Social pressure
    2. Seeking information from the group
- Referees see things the way the crowd does
  - Stoppage time from social pressure
  - Uncertain calls from information
Behavioral Explanation

• If true, then effects should be larger
  1. The more ambiguous the call
  2. The larger and more relevant the crowd

• Both are true
  – HFA in every sport much larger in most attended games and insignificant in least attended (controlling for team quality)
Still Not Convinced?

- Psychology experiment with real soccer referees and video-taped matches
- Italian soccer league “experiment”
What About the Facts We Started With?

1. **Exists in every sport**---referees in every sport are human
2. **Different across sports**---referees have bigger impact in some sports than others
3. **Same for a given sport**---role of referee is the same no matter where played
4. **Hasn’t changed over time**---role of referee has been fairly constant
Broader Implications

• Social influence is powerful
  – Corporate boards
  – Business meetings
  – Industry standards/convention
  – Mutual fund and analyst “herding”
  – Personnel decisions
  – Even, possibly, the global financial meltdown
Other Topics

• Challenging convention
  – Does “defense win championships”?
  – Is there an I in Team?
  – The myth of momentum and the hot hand

• Discovering new territory
  – Swallowing the whistle
  – Steroid vs. recreational drug use
  – The Chicago Cubs futility?
Conclusions

• Challenging the status quo, and testing it
• Seeking alternative views and perspectives
• Applying critical thinking

... Will reveal the truth, which often lies hidden
• Sports are no exception
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