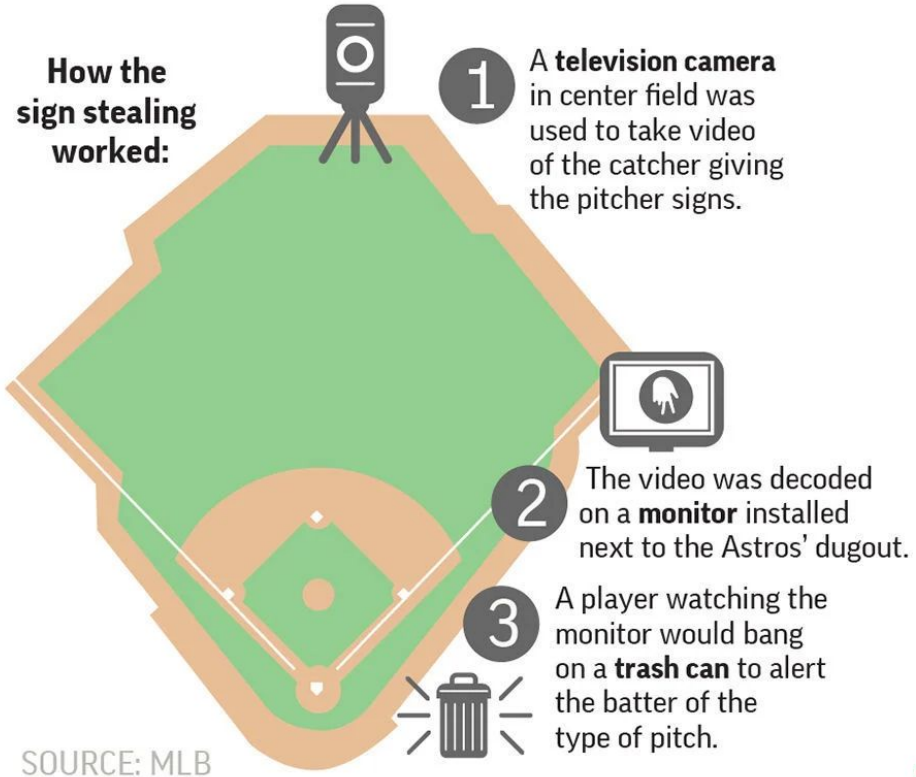
Predicting MLB Pitch Type

Louie Ligon

ASTROS GUILTY OF ELECTRONIC SIGN STEALING

Astros players devised a system to decode signs using a center field camera and a trash can during the 2017 season – the year Houston won its first World Series title.



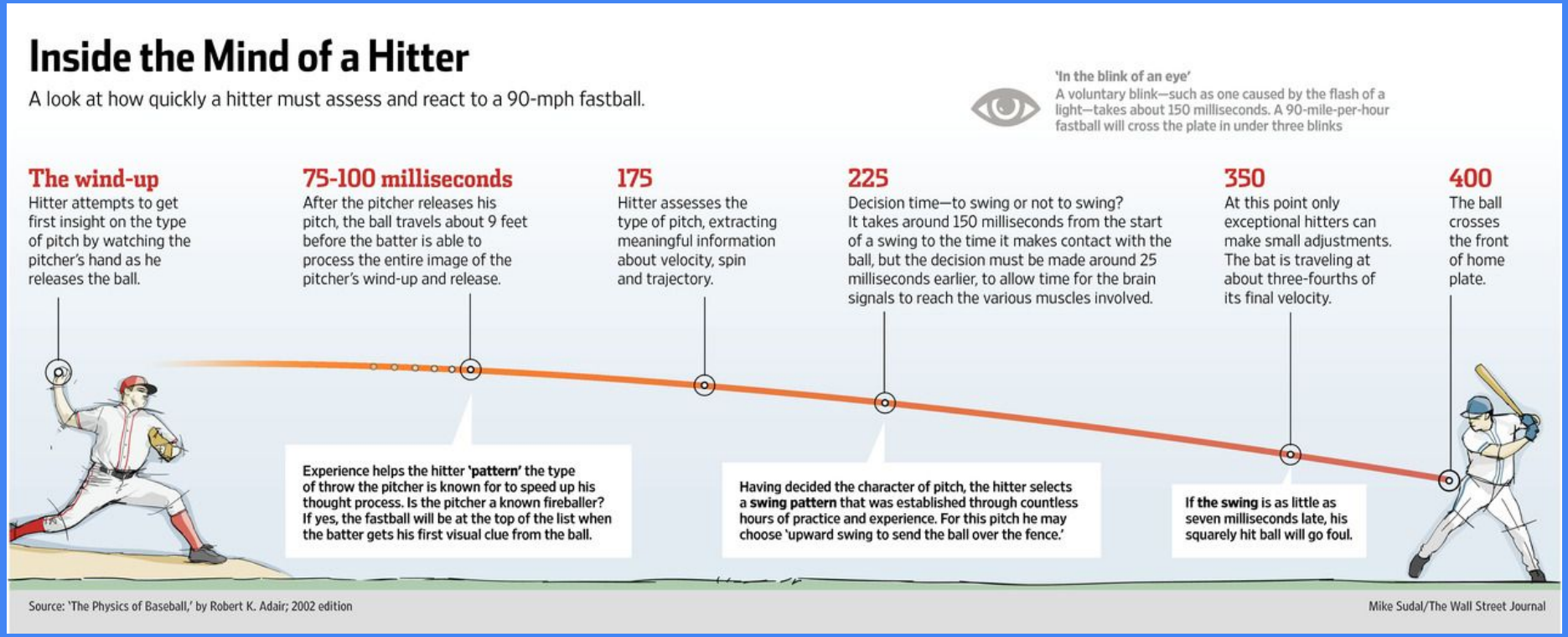
SOURCE: MLB

AP

All-Star Game Plan

- ★ Leadoff Hitter - Why pitch type?
- ★ Early Innings - Pitch type knowledge
- ★ 7th Inning Stretch - Lessons learned
- ★ Extra Innings - What’s next?

Why Pitch Type?



Pitch Types

Four-seam Fastball

Two-seam Fastball

Slider

Curveball

Changeup

Cutter

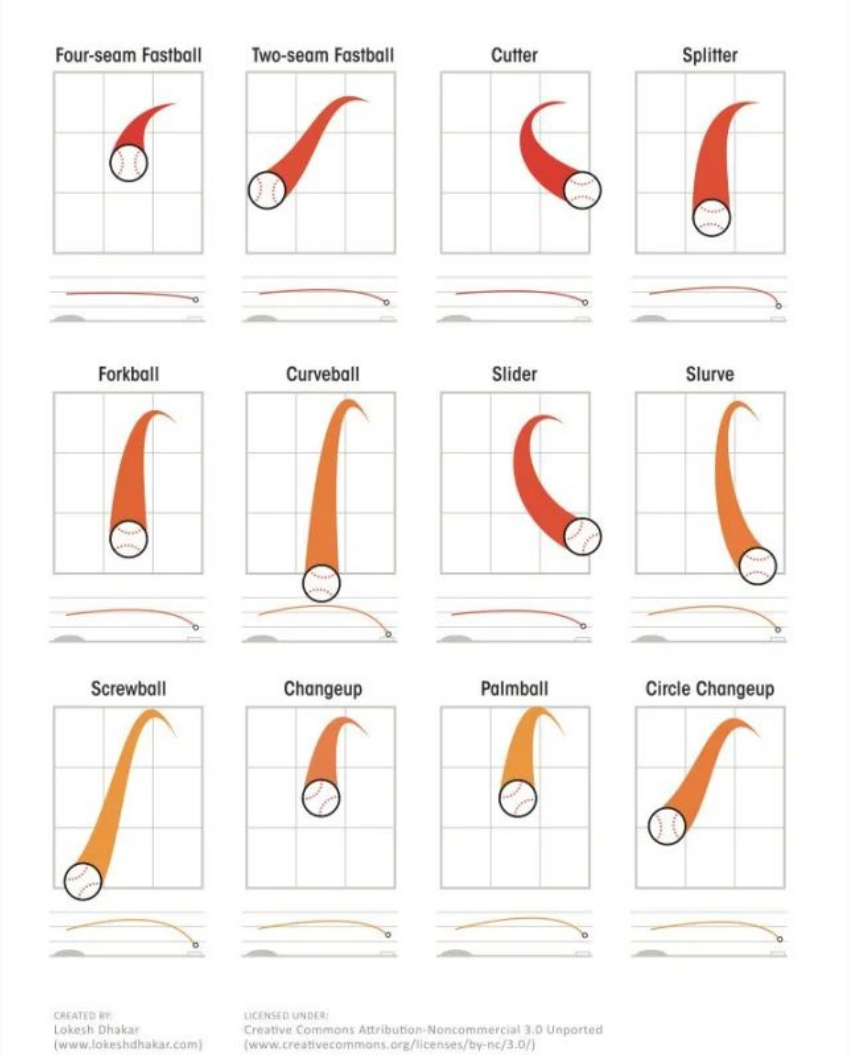
Splitter

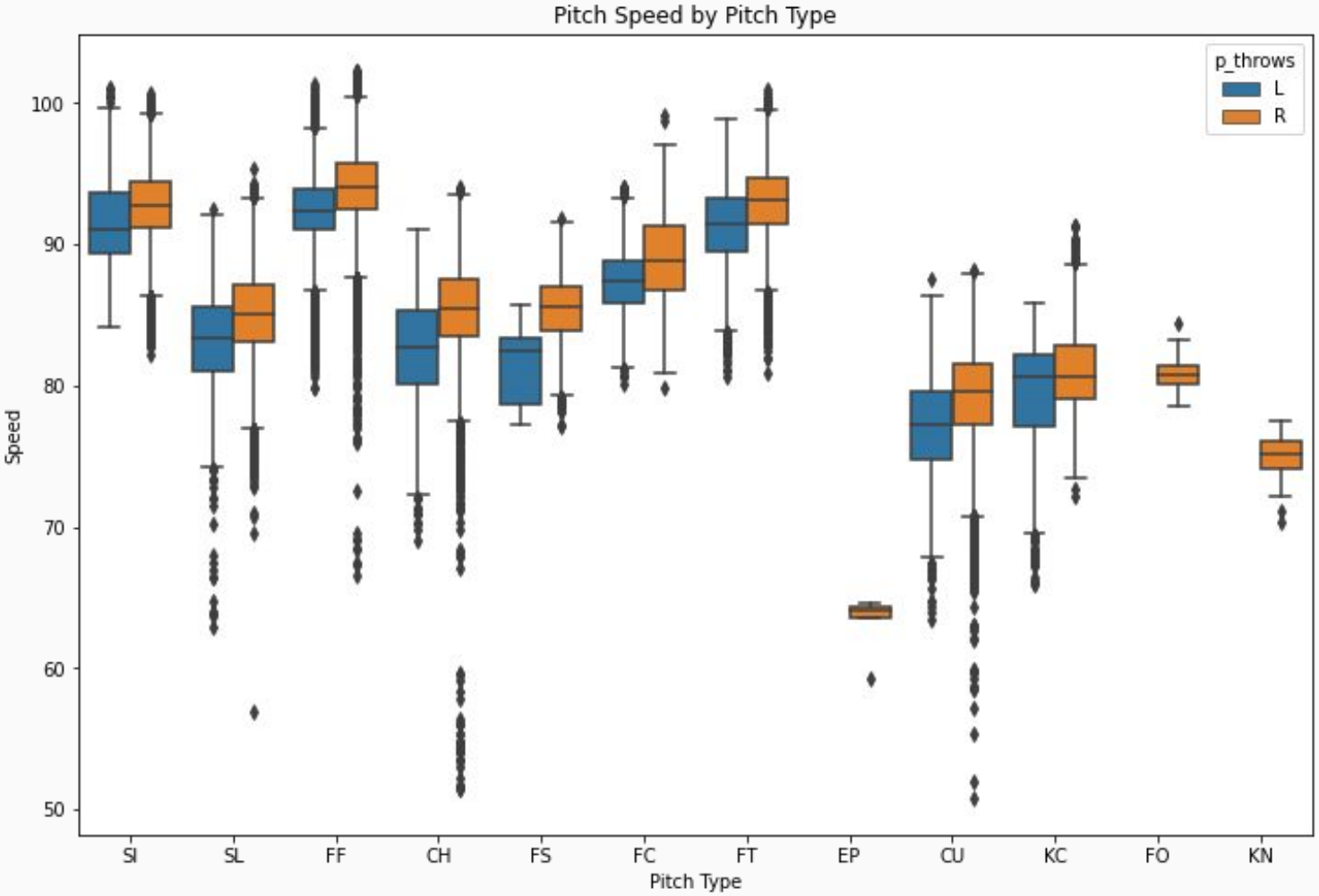
Forkball

Slurve

Screwball

Palmball




Pitch Speed by Pitch Type
p_throws
L
R
Speed
100
90
80
70
60
50
SI
SL
FF
CH
FS
FC
FT
EP
CU
KC
FO
KN
Pitch Type

Lessons Learned

- Who is pitching?
  - Each pitcher has their own unique combination of pitch types
- Which hand does the pitcher throw with?
  - More likely to see a slider if batting stance aligns with pitcher’s throwing hand
- What is the pitch count?
  - 80% chance of seeing a fastball with a 3-0 count
  - Slider becomes significantly more likely with a 0-2 count
- What inning is it?
  - Multiple models placed importance on inning and at-bat number

Only 3 pitch types represent 74% of all pitches thrown

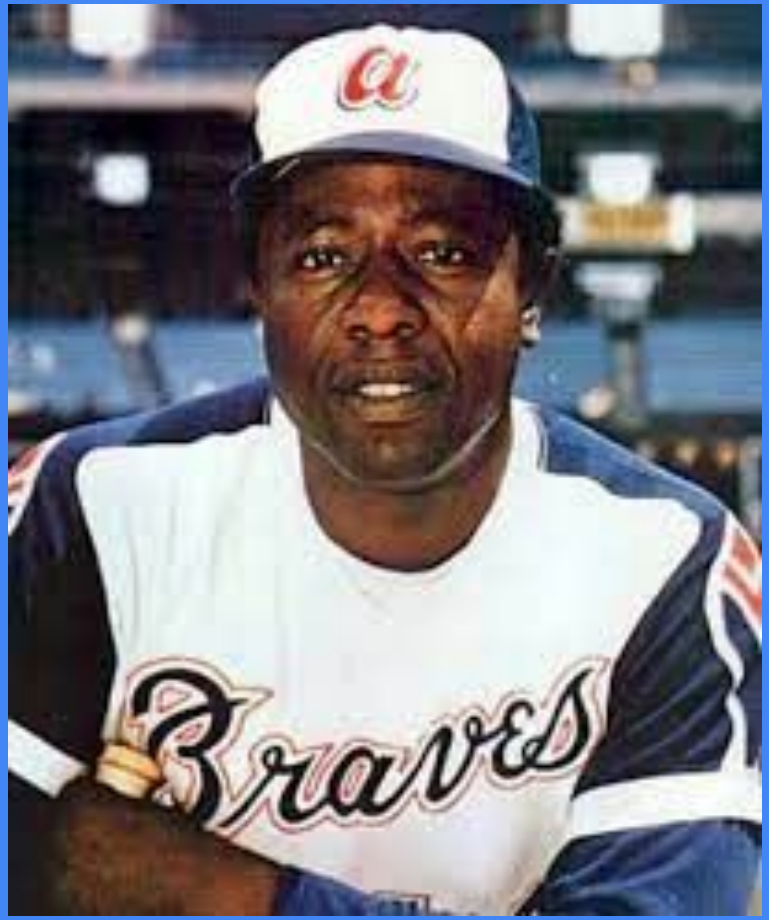
Fastballs, Sliders, Changeups

What’s Next?

- Group pitch types into 3 categories
  - Fastballs, breaking balls, off-speed pitches
  - Allows for simplification and addresses the biggest challenge - timing
- Add predictions to pitch zone location
  - Considers the next challenge - location
- Focus on specific teams and individual pitchers
- Combine data from specific batter-pitcher matchups

“Guessing what the pitcher is going to throw is 80 percent of being a successful hitter. The other 20 percent is just execution.”

-Hank Aaron



Thanks!

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