The First Lesson of Sport Analytics

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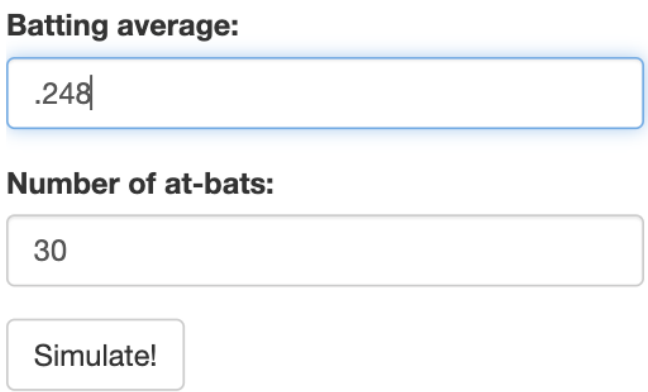
Sport Analytics

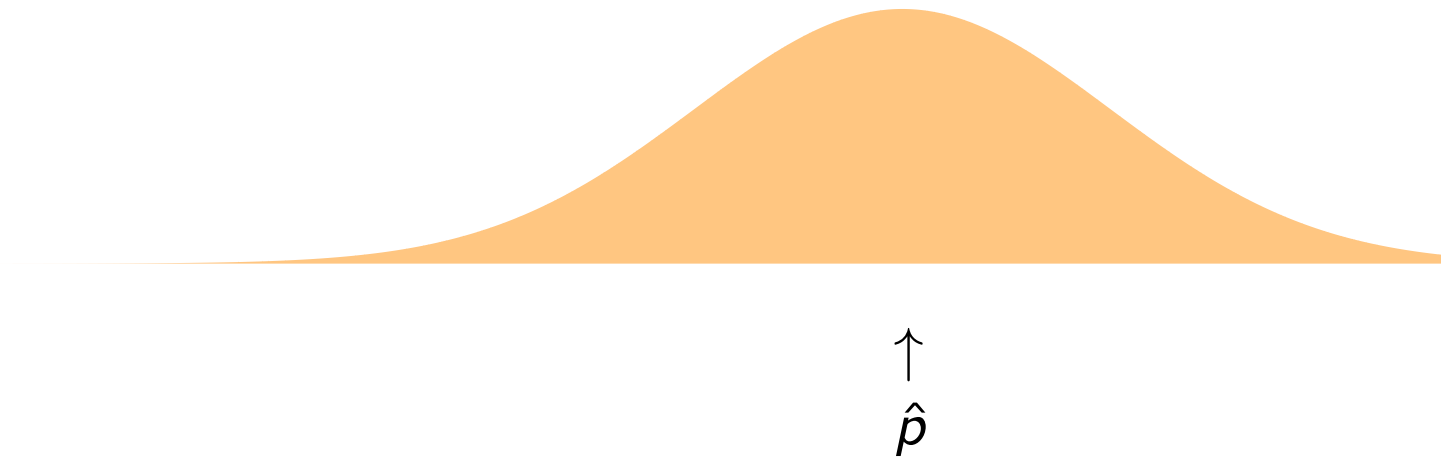
Play Ball!

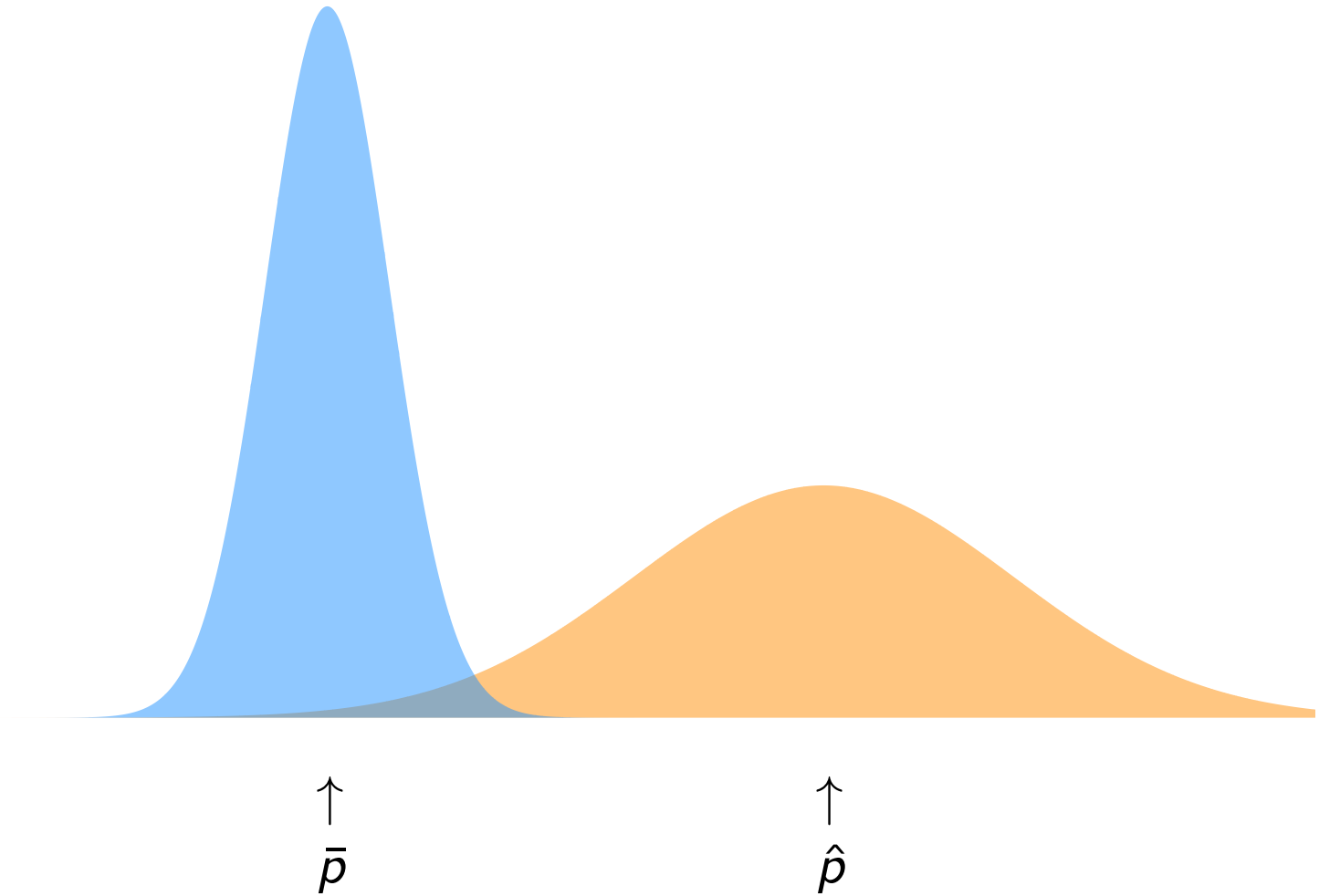
1. Scan the QR code
2. Enter your batting average (from your piece of paper)
3. Click **Simulate!** (ONLY ONCE)
4. How many hits did you get?

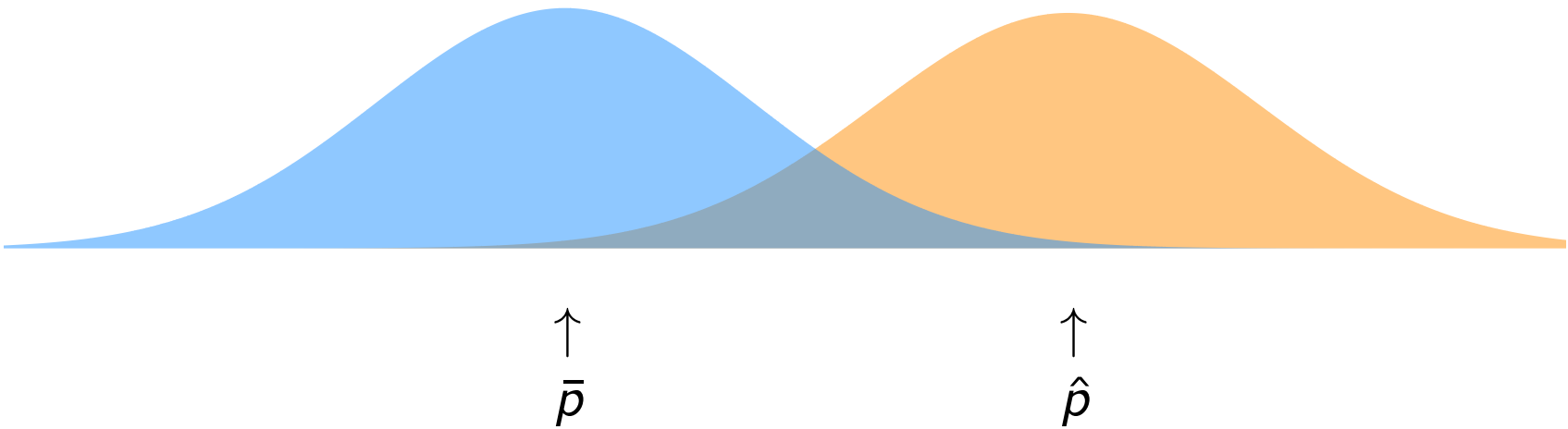


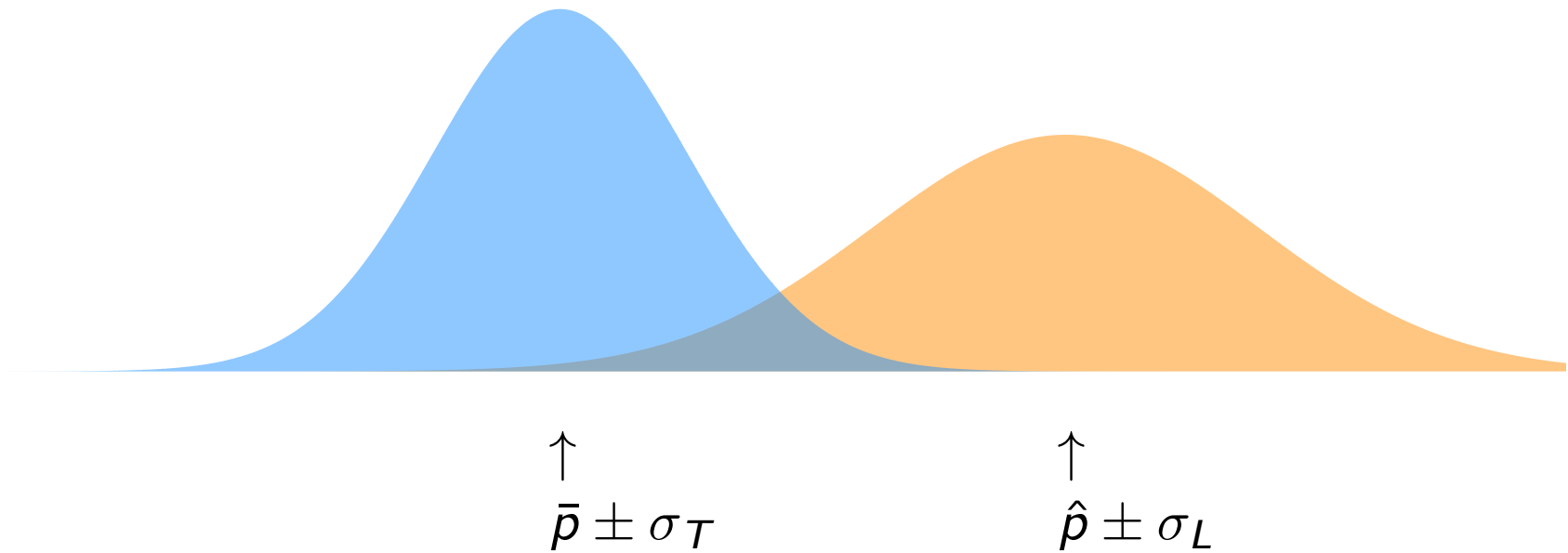
You Be the Scout

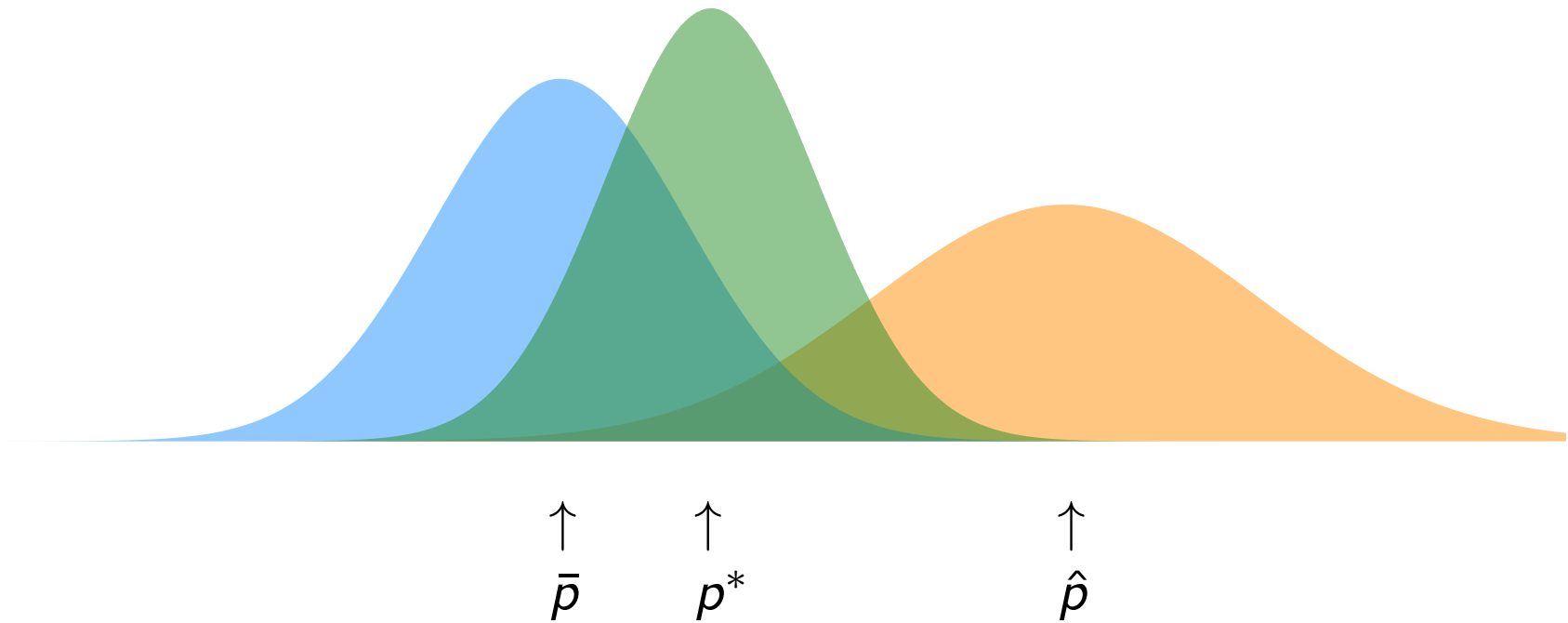
What is your guess of the number on the winner's piece of paper?
The closest guess wins. Format your guess as a number: .XXX


$\hat{p}$


$\bar{p}$
$\hat{p}$


$\bar{p}$
$\hat{p}$


$\bar{p} \pm \sigma_T$
$\hat{p} \pm \sigma_L$


$\bar{p}$
p^*
$\hat{p}$

Regression to the Mean

$$p^* = \frac{\bar{p}/\sigma_T^2 + \hat{p}/\sigma_L^2}{1/\sigma_T^2 + 1/\sigma_L^2}$$

In our game: $\bar{p} = .250$, $\sigma_T = .020$ and $\sigma_L = \sqrt{.25 \cdot .75/30}$

$$\Downarrow \qquad \Downarrow$$

$$1/\sigma_T^2 = 2500 \quad 1/\sigma_L^2 = 160$$

$$p^* = \frac{2500 \cdot \bar{p} + 160 \cdot \hat{p}}{2500 + 160} = 94\% \cdot \bar{p} + 6\% \cdot \hat{p}$$

The First Lesson of Sport Analytics

1. Don't be fooled by noise.

2. (Bonus) In sport analytics we are (almost) always wrong.
   The objective to be a little less wrong than our competitors.