

<Pitchers VS. Hitters>

-How the Count Can Affect the At Bat Outcome-
(Power VS. Contact)

Executive Summary

In this study, I am looking at how the hitter's count can affect the outcome of the at bat (AB). Specifically, I am looking at the 2006 regular season play (does not including pre- or post-season play) of three batters from the World Series Championship Team, St. Louis Cardinals. The three batters are David Eckstein (ShortStop - #22), Yadier Molina (Catcher - #4), and Albert Pujols (First Base - #5).

There are twelve different possible counts, and this project will analyze their outcomes separately and compare them with the batter's overall regular season averages. By looking at three categories, we can hypothesize if the batter's approach at the plate changes to or from hitting for power to focusing on making contact and putting the ball in play (power vs. contact) depending on the count. The three categories being analyzed are batting average (BA), on-base percentage (OBP), and slugging percentage (SLG).

One hypothesis for many batters would be that when behind in the count (pitcher's count), the batter would focus on making contact rather than hitting for power. When the batter is ahead of the count (hitter's count), they are more likely to try and hit the ball harder somewhere. With a neutral count, one where neither the pitcher or the hitter have an advantage, I would guess that the batter's averages would be around their regular season average. However, with the neutral count of 3-2 (a "full" count), I would guess that the batter would again focus on making contact and want to put the ball in play rather than strike out.

When looking at the data, the hypothesis is partially supported. For example, when analyzing the Slugging percentage (a measure of a hitter's power at bat), in some cases it is higher than the season average if the hitter has a favorable count. Other times when the count is in favor of the pitcher, the batter's SLG is lower.

Problem Description

In Baseball/Softball, there are 12 possible counts that a batter can have while at bat. Some of these counts can be considered in favor of the batter, some the pitcher, and two here are considered neutral. The idea of this project is to look at the different counts of each of the three chosen batters and analyze the data to see if their approach at the plate differs depending on their count. Does the batter swing more for power when they are ahead of the count? On the same note, does the batter swing to make contact and at least put the ball in play when they are behind in the count?

Analysis Technique

There is not a particular “solution” to this project, rather it is more of an analysis. When looking at all of the outcomes for the three batters during the regular 2006 MLB (Major League Baseball) Season, each individual batter’s separate count is compared with their regular season averages. For example, all three batters have a higher SLG when they have a 2-0 (hitter’s) count compared to their regular season SLG. And at the time, when these three hitters have an 0-2 (pitcher’s) count, their SLG is lower than their regular season SLG.

By comparing each batter’s count individually with their regular season averages, we can see the difference of how the batter might have changed their approach when at bat.

Assumptions/Other Factors to Consider

This is not an assumption so much as it is just another factor to consider: remember that having people on-base might have an affect on how the hitter approaches the plate ((even though as a player, you should try to have the same solid approach every time)). Also, there are times in an at bat where the opposing team brings in another pitcher and that could have a small effect on the batter’s outcome. Another thing to remember is that the pitcher is a person too; they can have different mind-sets depending on the batter and the batter’s count too. For example, if the pitcher is ahead in the count while facing a highly respected hitter like Albert Pujols, they are most likely not going to give him anything too decent to hit (they will try to get Pujols to chase a pitch outside of the [strike] zone instead of allowing him to see a better pitch).

One more factor to keep in mind is the beginning attitude that each hitter comes to the plate with every time. For example, Eckstein is a lead-off hitter and is more of a hit the ball and run type of player. His first approach at the plate is getting on base every time – he is more likely to try to hit the ball hard for contact until he is more behind in the count, in which case he might swing a little easier to have a higher chance of putting the ball in play. With Pujols, who hits in the third or fourth spot (a.k.a. the “clean-up spot”), his approach is more power more often. Different players have different approaches...

These are just a few factors that might have a small impact on the results...

Results

The easiest statistic to measure the affect of a count on the batter’s approach at the plate is probably SLG. SLG measures the hitter’s power. Therefore, the hypothesis that a hitter would focus **more** on making **contact** and **less** on **power** when they are **behind** in a count would be supported when the SLG for that hitter with that particular count is **lower** than the batter’s season SLG. On the flip-side, there would be a strong correlation when looking at when the batter’s SLG is higher than their season SLG when they are ahead of the count.

With a few exceptions, the higher the batter is ahead of the count, the higher their BA, OBP, and SLG is compared to their season averages (especially when looking at SLG). The reverse is noticeable too; the more behind in the count the batter is, the lower their BA, OBP, and SLG is when compared to their season averages. One such exception

is when the count is 3-0. A reason for this is it is widely practiced for hitters not to swing when the count is 3-0. Not only might they be walked, but it forces the pitcher to throw another pitch (more work). And besides that, if the pitcher throws a strike, the batter is still ahead in the count with a 3-1 count, and is still likely to see a better pitch to hit than if they were behind...

Issues

For the most part, the hypothesis is fairly supported. This is mostly visible when looking at the SLG data for each of the three hitters. However, there are a few instances in the data that do not support this theory. These are the averages in white, while the averages in black support the hypothesis (the neutral counts were not altered in color either way).

Appendices

#22 Eckstein – Regular Season Batting: 2006 |

SEASON	TEAM	G	AB	R	H	2B	3B	HR	RBI	BB	SO	SB	CS	AVG	OBP	SLG	OPS
2006	StL	123	500	68	146	18	1	2	23	31	41	7	6	.292	.350	.344	.694

#5 Pujols - Regular Season Batting: 2006 |

SEASON	TEAM	G	AB	R	H	2B	3B	HR	RBI	BB	SO	SB	CS	AVG	OBP	SLG	OPS
2006	StL	143	535	119	177	33	1	49	137	92	50	7	2	.331	.431	.671	1.102

#4 Molina - Regular Season Batting: 2006 |

SEASON	TEAM	G	AB	R	H	2B	3B	HR	RBI	BB	SO	SB	CS	AVG	OBP	SLG	OPS
2006	StL	129	417	29	90	26	0	6	49	26	41	1	2	.216	.274	.321	.595

$$AVG = \frac{H}{AB}$$

$$OBP = \frac{H + BB + HBP}{AB + BB + HBP + SF}$$

$$SLG = \frac{(1B) + (2 \times 2B) + (3 \times 3B) + (4 \times HR)}{AB}$$

$$(SLG = \frac{TB}{AB})$$

 Hitter's Count	 Neutral	 Pitcher's Count
0-0		

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>Yadier Molina</u>	72	0	25	7	0	3	41	15	0	0	.347	.382	.569	.216	.274	.321
<u>D. Eckstein</u>	41	0	14	1	0	0	15	3	0	0	.341	.429	.366	.292	.350	.344
<u>Albert Pujols</u>	43	0	14	2	0	5	31	15	0	0	.326	.333	.721	.331	.431	.671

0-1

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>Albert Pujols</u>	54	0	23	7	0	5	45	16	0	0	.426	.429	.833	.331	.431	.671
<u>D. Eckstein</u>	76	0	19	4	0	0	23	2	0	0	.250	.250	.303	.292	.350	.344
<u>Yadier Molina</u>	57	0	10	4	0	0	14	4	0	0	.175	.190	.246	.216	.274	.321

0-2

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>D. Eckstein</u>	54	0	11	0	0	0	11	1	0	11	.204	.218	.204	.292	.350	.344
<u>Albert Pujols</u>	36	0	6	1	0	3	16	4	0	15	.167	.167	.444	.331	.431	.671
<u>Yadier Molina</u>	37	0	6	3	0	0	9	4	0	15	.162	.162	.243	.216	.274	.321

1-0

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>Albert Pujols</u>	48	0	19	4	0	7	44	17	0	0	.396	.408	.917	.331	.431	.671
<u>D. Eckstein</u>	24	0	9	1	0	0	10	5	0	0	.375	.346	.417	.292	.350	.344
<u>Yadier Molina</u>	33	0	9	2	0	1	14	4	0	0	.273	.273	.424	.216	.274	.321

1-1

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>Albert Pujols</u>	79	0	29	5	1	10	66	22	0	0	.367	.375	.835	.331	.431	.671
<u>D. Eckstein</u>	65	0	21	2	1	1	28	2	0	0	.323	.343	.431	.292	.350	.344
<u>Yadier Molina</u>	42	0	8	1	0	1	12	5	0	0	.190	.209	.286	.216	.274	.321

1-2

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>Albert Pujols</u>	69	0	22	4	0	3	35	11	0	17	.319	.319	.507	.331	.431	.671
<u>D. Eckstein</u>	90	0	22	2	0	0	24	3	0	17	.244	.277	.267	.292	.350	.344
<u>Yadier Molina</u>	53	0	7	3	0	0	10	4	0	16	.132	.164	.189	.216	.274	.321

2-0

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>D. Eckstein</u>	3	0	2	0	0	0	2	0	0	0	.667	.667	.667	.292	.350	.344
<u>Albert Pujols</u>	21	0	8	1	0	4	21	12	0	0	.381	.381	1.000	.331	.431	.671
<u>Yadier Molina</u>	14	0	2	0	0	1	5	1	0	0	.143	.143	.357	.216	.274	.321

2-1

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>D. Eckstein</u>	48	0	23	4	0	0	27	3	0	0	.479	.479	.563	.292	.350	.344
<u>Albert Pujols</u>	52	0	17	2	0	4	31	12	0	0	.327	.327	.596	.331	.431	.671
<u>Yadier Molina</u>	25	0	7	0	0	0	7	3	0	0	.280	.280	.280	.216	.274	.321

2-2

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>Albert Pujols</u>	77	0	20	4	0	4	36	15	0	15	.260	.260	.468	.331	.431	.671
<u>D. Eckstein</u>	58	0	15	2	0	0	17	1	0	7	.259	.259	.293	.292	.350	.344
<u>Yadier Molina</u>	47	0	7	1	0	0	8	2	0	9	.149	.143	.170	.216	.274	.321

3-0

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>Albert Pujols</u>	0	0	0	0	0	0	0	0	39	0	.000	1.000	.000	.331	.431	.671
<u>D. Eckstein</u>	0	0	0	0	0	0	0	0	8	0	.000	1.000	.000	.292	.350	.344
<u>Yadier Molina</u>	0	0	0	0	0	0	0	1	7	0	.000	1.000	.000	.216	.274	.321

3-1

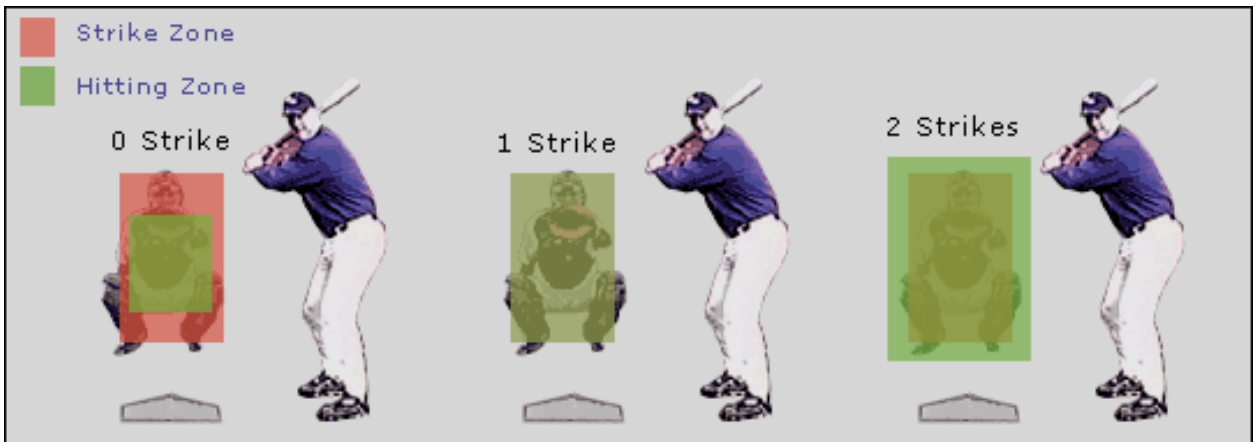
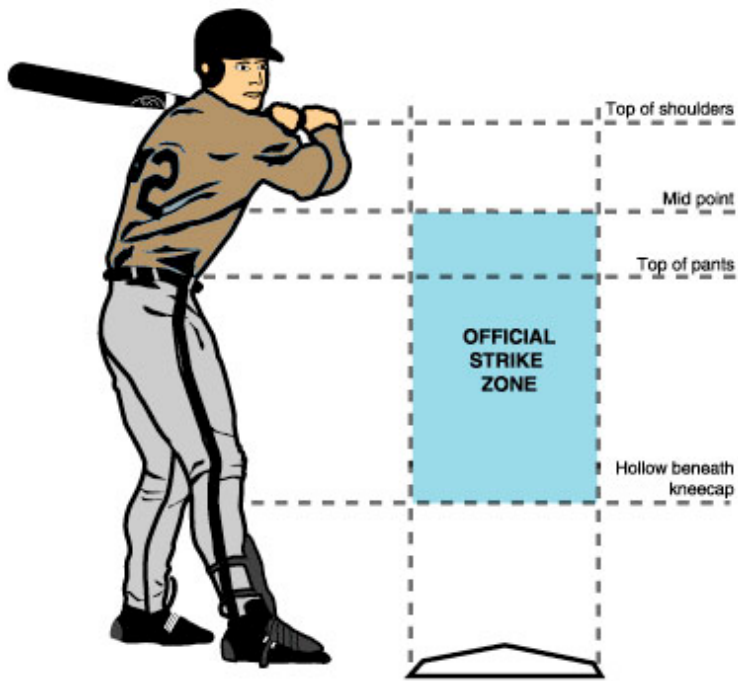
Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>D. Eckstein</u>	5	0	2	1	0	0	3	1	10	0	.400	.800	.600	.292	.350	.344
<u>Albert Pujols</u>	22	0	8	2	0	1	13	4	31	0	.364	.736	.591	.331	.431	.671
<u>Yadier Molina</u>	9	0	2	1	0	0	3	3	11	0	.222	.650	.333	.216	.274	.321

3-2

Batting Statistics

NAME	AB	R	H	2B	3B	HR	TB	RBI	BB	SO	BA	OBP	SLG	sBA	sOBP	sSLG
<u>Albert Pujols</u>	34	0	11	1	0	3	21	9	22	3	.324	.579	.618	.331	.431	.671
<u>Yadier Molina</u>	28	0	7	4	0	0	11	3	8	1	.250	.417	.393	.216	.274	.321
<u>D. Eckstein</u>	36	0	8	1	0	1	12	2	13	6	.222	.440	.333	.292	.350	.344



A higher strike zone

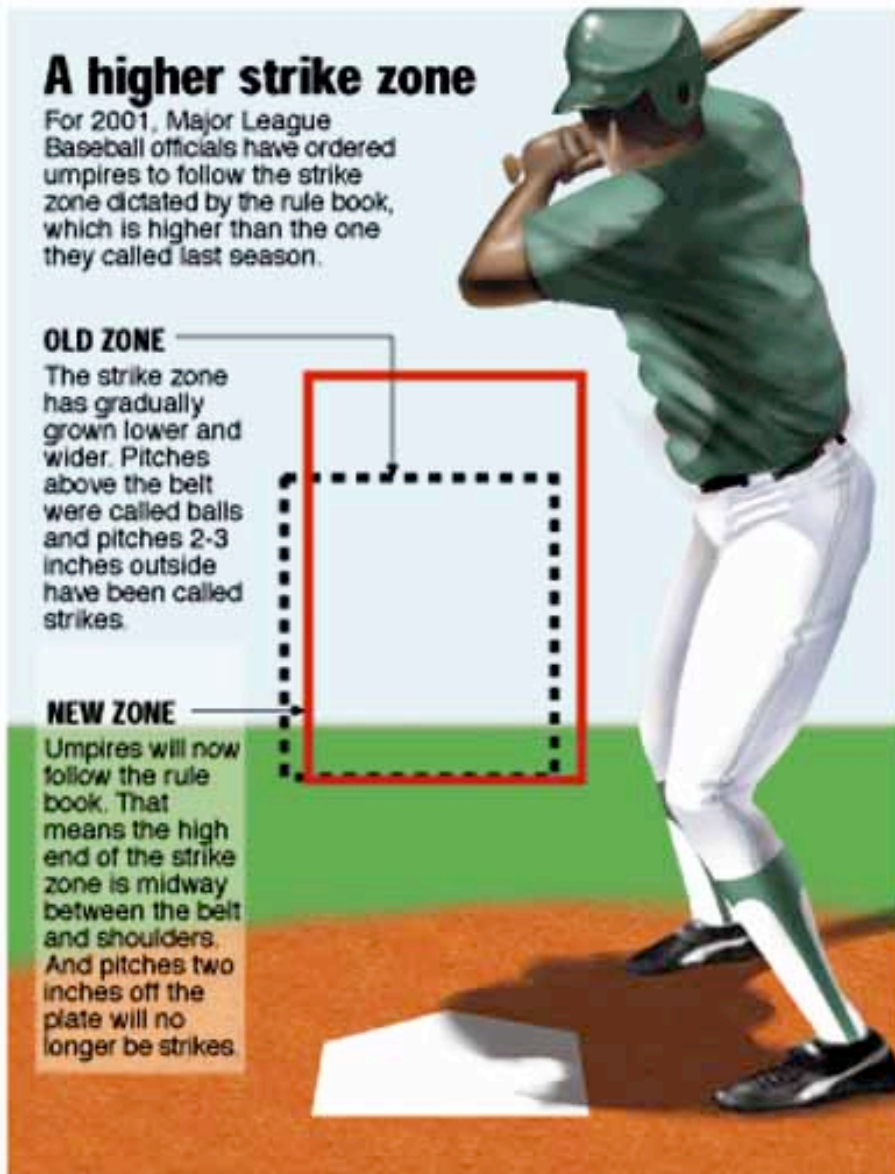
For 2001, Major League Baseball officials have ordered umpires to follow the strike zone dictated by the rule book, which is higher than the one they called last season.

OLD ZONE

The strike zone has gradually grown lower and wider. Pitches above the belt were called balls and pitches 2-3 inches outside have been called strikes.

NEW ZONE

Umpires will now follow the rule book. That means the high end of the strike zone is midway between the belt and shoulders. And pitches two inches off the plate will no longer be strikes.



Source: Associated Press

Times art—JEFF GOERTZEN

References

- www.google.com
- www.wikipedia.org
 - http://en.wikipedia.org/wiki/On_Base_Percentage
 - http://en.wikipedia.org/wiki/Slugging_percentage
- <http://sports.espn.go.com/mlb/teams/batting>
- www.official-rules.org
- www.sptimes.com
- www.joecannaday.com
- Mr. Aleshunas, J.

