BASEBALL PLAYER WON-LOST RECORDS

The 2019 Retrospective

By Tom Thress
https://baseball.tomthress.com

Table of Contents

Introduction

I have been a baseball fan for forty years. One of the things that drew me to baseball is the statistics. Baseball has always leant itself to the tracking and analyzing of statistics. Baseball statistics have been meticulously kept for more than a century and, as such, baseball statistics provide a way to see and understand baseball history, to compare today's players with those of the past.

For most of baseball history, there have been a few key statistics that have rated as primary in importance. Three is a magic number in baseball – three outs per inning – and the three key offensive statistics were the Triple Crown stats: batting average, home runs, and runs batted in, or RBI. For pitchers, the three key stats were strikeouts, earned run average, or ERA, and, most important, wins.

The beauty of these stats is that they measured real things: home runs and strikeouts are tangible events. RBIs measured real runs driven in. And pitcher wins measured the most important thing of all in baseball: who won the game.

More recently, a younger, more technologically and mathematically savvy generation of baseball fans have raised criticisms of these statistics. Batting average treats all hits equally and ignores walks. Runs batted in are as much a function of how good a player's teammates are at getting on base as of how good a player is at driving them in.

And wins. No traditional statistic has gotten more disdain than wins. Why do only pitchers get wins? Baseball is a team sport and winning a baseball game depends on batters and baserunners and fielders and, in the modern game, almost always, more than one pitcher. So, what sense does it make to assign a team win to a single player?

Instead, the new generation of statistics try to incorporate everything. A single is worth four-tenths of a run on average; a double is worth seven-tenths of a run; a triple is worth 1.0 run on average; and a home run is worth an average of 1.4 runs. So, a player's hits and walks and whatever else are converted to a common currency of runs. But not actual runs, they are converted to "expected" runs, how many runs they might be expected to generate on average. And runs are then converted into wins: it works out that a major-league team will win about one more game per season for every ten more runs they score. So, ten theoretical runs become one theoretical win. And one can convert every player's value into a win total. And one can compare that win total against some baseline – an average player, or, more recently a theoretical "replacement player".

Now, I am not "young" anymore, but I like to think that I am at least technologically and mathematically savvy. And I appreciate where the new generation is coming from. They're right: batting average misses a lot; RBIs tell you as much about a player's teammates as they tell you about the player. And giving one player – who must be a pitcher – credit for every team win doesn't make a lot of sense.

But the new statistics have their own weakness: they don't tell us what actually happened, only what we expected to happen. There's a place for that, but there's also a place for caring about what team really won a specific game and which players were most responsible for that win.

I saw a gap between these two worlds of baseball fans: a missing statistic. And so, I decided to fill that gap.

There was a phrase on social media a couple of years ago, #KilltheWin, arguing to do away with the pitcher win. But actual wins matter. Don't kill the win, improve the win.

Open up wins to not just pitchers, but to all players. And apportion them out to everybody who contributes to a particular win, in proportion to the player's specific contribution. Batters get credit for

hitting singles and doubles and triples and home runs. Baserunners get credit for stealing bases and for going first-to-third on a single. Fielders get credit for making plays in the field. Pitchers still get credit for striking guys out and inducing weak contact. But that credit is not tied to theoretical wins derived from theoretical runs; it's tied to actual wins.

And when you start from a different perspective – actual wins instead of theoretical runs – you learn different things. And when you start from a better perspective – and actual wins are, in my opinion, obviously a better perspective – the different things that you learn turn out to be better and more useful things.

This book looks at the 2019 season through the prism of Baseball player won-lost records. Chapter 1 looks at some of the best players of 2019, as measured by Player won-lost records. Chapter 2 looks at some of the notable aspects of 2019 baseball and compares 2019 baseball to earlier seasons. Chapter 3 looks at more players for whom 2019 was notable. Chapter 4 goes back in history and looks at some interesting historical players and teams. For those new to my Player won-lost records, there are two Appendices which discuss how I calculate Player won-lost records and how to use Player won-lost records to compare players.

You may also enjoy my two earlier books, *Player Won-Lost Records in Baseball: Measuring Performance in Context* (McFarland, 2017) and *Baseball Player Won-Lost Records: 150 Players, 50 Years* (Amazon, 2018), and exploring my website https://baseball.tomthress.com.

Enjoy!

Chapter 1: The Best Players of 2019

I calculate Player won-lost records two ways: pWins and pLosses tie to team wins and losses, while eWins and eLosses control for context and the ability of one's teammates. I describe the calculation of Player won-lost records in some detail in Appendix 1 of this book.

The primary output of my Player won-lost system are a set of wins and losses. In addition to pWins and eWins, however, I calculate Player won-lost records relative to three baselines: positional averages; replacement level, which I set one standard deviation below positional average; and star, which I set one standard deviation above positional average. Positional averages are discussed in detail in Appendix 2 of this book.

In constructing Player won-lost records, I have not constructed a single set of numbers such as is the case with, say, WAR or Win Shares. Rather, Player won-lost records are a set of numbers: in or out of context, relative to whatever baseline one might think appropriate, or whatever combination of these one might want to construct.

As I said, pWins tie directly to team wins while eWins attempt to control for context. That said, I do scale eWins so that total player decisions are the same for players as measured by either pWins or eWins. Differences between pWins and eWins, then, reflect differences in the extent to which a player's performance tied to actual team wins vis-à-vis expectations. Broadly speaking, these differences could be for two reasons.

First, a player may have genuinely performed better in "clutch" situations than in non-clutch situations, leading to more pWins than eWins. For example, on my 50th birthday (June 6, 2018), Jason Heyward hit a grand slam with two outs in the bottom of the ninth inning of a game which the Chicago Cubs were trailing 5 to 3. I calculate that play as having been worth 0.685 pWins versus only 0.132 eWins.

Second, a player may simply have good or bad luck in terms of teammates, so that the value of his performance is, essentially, undercut or magnified based on how well his teammates happened to perform. Jacob deGrom, for example, has earned a few more eWins than pWins the last two years because the New York Mets have a tendency not to score as many runs when he pitches.

A more game-level example could be Bob Horner's performance on July 6, 1986. Horner tied a major-league record that day with four home runs. Sixteen players have hit four home runs in a major-league game since 1900, but Horner is the only one to do so in a game his team lost.

Obviously, Bob Horner bears relatively little responsibility for the Braves' 11-8 loss to the Montreal Expos that day (Horner did make one out, which came with runners on first and second, and he committed an error, although no runs scored as a result of the error). But, because the Braves lost the game, his performance that day ends up being worth only 0.31 pWins versus 0.63 eWins.

I would leave it as an exercise to the reader to decide the extent to which they would choose to incorporate "context" in their evaluation of players: i.e., feel free to look at either pWins, eWins, or some combination of the two, however you see fit.

Player won-lost records are a wonderful tool for filling out an MVP ballot (except for the fact that my source, Retrosheet, didn't release 2019 play-by-play data until several weeks after MVP voting results were announced – I may try to work on that in 2020). But they are a tool that allows different people to come to well-informed, rational, and ***different*** results, depending on what one values: pWins or eWins, relative to what baseline?

The next four pages show the top 10 players in pWins and eWins in 2019 relative to four different baselines: raw wins (i.e., relative to a baseline of zero), wins over positional average (WOPA), wins over replacement level (WORL), and wins over star (WO*). The numbers presented here are regular-season only. Postseason player won-lost records are discussed somewhat in the relevant player comments (see Stephen Strasburg).

Top 10 Players, pWins

	Player	pWins	pLosses
1	Cody Bellinger	**24.6**	16.5
2	Ronald Acuña	**24.0**	16.0
3	Alex Bregman	**23.1**	15.4
4	Bryce Harper	**22.7**	17.7
5	Mookie Betts	**21.6**	17.1
6	D.J. LeMahieu	**21.4**	15.3
7	Juan Soto	**21.4**	18.2
8	Christian Yelich	**21.2**	14.0
9	Matt Chapman	**21.2**	15.0
10	Marcus Semien	**21.2**	17.2

Top 10 Players, eWins

	Player	eWins	eLosses
1	Cody Bellinger	**23.8**	17.3
2	Ronald Acuña	**22.6**	17.4
3	Whit Merrifield	**22.2**	20.9
4	Alex Bregman	**22.1**	16.3
5	Bryce Harper	**22.0**	18.5
6	Juan Soto	**21.6**	18.0
7	Eugenio Suárez	**21.4**	17.4
8	Mookie Betts	**21.2**	17.4
9	Marcus Semien	**21.1**	17.3
10	Christian Yelich	**20.9**	14.3

Player won-lost records are on a broadly similar scale to traditional pitcher wins, so that, for example, 20 pWins (or eWins) is an excellent season total and 300 pWins (or eWins) is an excellent career total. Raw player wins are not, however, evenly distributed across positions. In particular, outfielders tend to earn a few more raw wins (but also a few more raw losses) than infielders and pitchers and catchers, in particular, tend to have quite low pWin and eWin totals.

This is evident in the above tables, which are populated primarily by outfielders, with a few middle infielders mixed in.

While the numbers here are the raw output of my system, I think it is best to evaluate Player won-lost records relative to a non-zero baseline.

Top 10 Players, pWins over Positional Average

	Player	pWins	pLosses	pWOPA
1	Justin Verlander	15.4	8.8	**7.7**
2	Ronald Acuña	24.0	16.0	**7.6**
3	Alex Bregman	23.1	15.4	**7.4**
4	Gerrit Cole	14.2	8.1	**7.2**
5	Cody Bellinger	24.6	16.5	**7.2**
6	George Springer	19.4	12.3	**7.0**
7	Mike Trout	20.0	13.4	**6.7**
8	Christian Yelich	21.2	14.0	**6.4**
9	D.J. LeMahieu	21.4	15.3	**6.1**
10	Stephen Strasburg	15.2	11.1	**6.0**

Top 10 Players, eWins over Positional Average

	Player	eWins	eLosses	eWOPA
1	Mike Trout	20.5	12.9	**7.7**
2	Jacob deGrom	15.2	10.5	**6.5**
3	Zack Greinke	15.3	10.6	**6.3**
4	Gerrit Cole	13.6	8.7	**5.9**
5	Justin Verlander	14.5	9.7	**5.8**
6	Christian Yelich	20.9	14.3	**5.7**
7	Cody Bellinger	23.8	17.3	**5.6**
8	Alex Bregman	22.1	16.3	**5.4**
9	Jack Flaherty	14.9	11.6	**5.3**
10	Stephen Strasburg	14.7	11.5	**5.2**

The most straightforward baseline against which to measure Player wins is positional average. The term “positional” here refers to the fact that the way by which I account for players’ position(s) is through the calculation of separate positional averages for each position. Appendix 2 of this book looks at positional averages in great detail.

Top 10 Players, pWins over Replacement Level

	Player	pWins	pLosses	pWORL
1	Ronald Acuña	24.0	16.0	**9.7**
2	Justin Verlander	15.4	8.8	**9.5**
3	Alex Bregman	23.1	15.4	**9.4**
4	Cody Bellinger	24.6	16.5	**9.3**
5	Gerrit Cole	14.2	8.1	**8.8**
6	George Springer	19.4	12.3	**8.7**
7	Mike Trout	20.0	13.4	**8.6**
8	Christian Yelich	21.2	14.0	**8.3**
9	D.J. LeMahieu	21.4	15.3	**8.1**
10	Stephen Strasburg	15.2	11.1	**7.8**

Top 10 Players, eWins over Replacement Level

	Player	eWins	eLosses	eWORL
1	Mike Trout	20.5	12.9	**9.6**
2	Jacob deGrom	15.2	10.5	**8.2**
3	Zack Greinke	15.3	10.6	**8.1**
4	Cody Bellinger	23.8	17.3	**7.8**
5	Justin Verlander	14.5	9.7	**7.6**
6	Gerrit Cole	13.6	8.7	**7.6**
7	Christian Yelich	20.9	14.3	**7.6**
8	Alex Bregman	22.1	16.3	**7.5**
9	Jack Flaherty	14.9	11.6	**7.2**
10	Stephen Strasburg	14.7	11.5	**6.9**

I calculate replacement level as being equal to one standard deviation below positional average, so that replacement level will also vary by position. I also calculate separate standard deviations for pitchers and non-pitchers and, for non-pitchers, for fielding positions and purely hitting positions. I explain this somewhat in Appendix 2.

Shifting from positional average to replacement level will benefit players who had more playing time. So, for example, Ronald Acuña, who trailed Justin Verlander by 0.1 pWOPA but played in 156 games and led the National League with 715 plate appearances, pushes ahead of Verlander in pWORL, 9.7 to 9.5.

Top 10 Players, pWins over Star

	Player	pWins	pLosses	pWO*
1	Justin Verlander	15.4	8.8	**5.9**
2	Gerrit Cole	14.2	8.1	**5.5**
3	Ronald Acuña	24.0	16.0	**5.4**
4	Alex Bregman	23.1	15.4	**5.3**
5	George Springer	19.4	12.3	**5.2**
6	Cody Bellinger	24.6	16.5	**5.0**
7	Mike Trout	20.0	13.4	**4.9**
8	Christian Yelich	21.2	14.0	**4.5**
9	Matt Olson	16.9	10.8	**4.3**
10	Stephen Strasburg	15.2	11.1	**4.2**

Top 10 Players, eWins over Star

	Player	eWins	eLosses	eWO*
1	Mike Trout	20.5	12.9	**5.9**
2	Jacob deGrom	15.2	10.5	**4.7**
3	Zack Greinke	15.3	10.6	**4.5**
4	Gerrit Cole	13.6	8.7	**4.3**
5	Justin Verlander	14.5	9.7	**4.0**
6	Christian Yelich	20.9	14.3	**3.8**
7	Max Scherzer	12.2	8.7	**3.6**
8	Jack Flaherty	14.9	11.6	**3.5**
9	Cody Bellinger	23.8	17.3	**3.4**
10	Stephen Strasburg	14.7	11.5	**3.4**

Star level is one standard deviation above positional average – the exact mirror image of replacement level. The idea of wins over star is to highlight players who were more brilliant in less playing time. This is primarily useful in evaluating careers as a way to balance peak performance against career length, but the results at the season level can be interesting as well.

Max Scherzer makes his first appearance, for example, on this page. Scherzer was his usual dominant self in 2019 with league-leading strikeouts per nine innings (12.7) and strikeout-to-walk ratio (7.36), but in only 27 starts (172.1 innings pitched), his lowest innings total since 2009.

In the rest of this chapter, then, I am going to look at 50 key players from 2019. The list includes everybody who appears on any of the tables on the preceding three pages (i.e., the top ten in either pWins or eWins over positional average, replacement level, or star level), everybody who finished in the top 10 in actual (BBWAA) MVP voting or top 5 in Cy Young voting in 2019, and a few extra players. I chose the extra players primarily to ensure that my list of players included at least one player at every position and at least one player from every playoff contender.

These are probably not the 50 most valuable players of 2019, although I do think this list probably includes the top 20 – 25 players at least. But, of course, that's just my opinion; you are free to form your own opinion – just be sure you use Player won-lost records to inform that opinion!

Ronald Acuña, Jr.

The first table below shows Ronald Acuña's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
715	175	22	2	41	127	101	76	37	.280	.365	.518

Why Ronald Acuña made the list: Ronald Acuña finished fifth in the National League in MVP voting and won a Silver Slugger as the best hitting center fielder in the National League. He led the NL in plate appearances, stolen bases, and runs scored, and was the best player on an Atlanta Braves team which won 97 games as the NL East.

What do Player won-lost records say?

Ronald Acuña's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
24.0	16.0	7.6	9.7	22.6	17.4	4.8	6.9

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.7	0.7	0.0	1.0	4.3

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
4.3	0.4	4.8	2.1	6.9

Ronald Acuña was second in the major leagues in total pWins and pWins over positional average (pWOPA) and first in pWins over replacement level (pWORL). As pWins tie directly to team wins, an argument could therefore be made that Ronald Acuña contributed to more (regular-season) wins than any other player in the major leagues in 2019.

Acuña's eWOPA and eWORL are slightly less impressive but still very good. Not surprisingly, Ronald Acuña rates as above average in all three non-pitching factors. Acuña's baserunning and fielding, in particular, were elite.

The next two tables show the top 10 players in baserunning eWins and pWins over non-pitcher average.

Top 10 Players, Baserunning Wins over Non-Pitcher Average

	Player	eWins	eLosses	eWOPA
1	Jonathan Villar	2.1	1.2	0.9
2	**Ronald Acuña**	**1.7**	**1.0**	**0.7**
3	Elvis Andrus	1.5	1.0	0.6
4	Kolten Wong	1.4	0.8	0.6
5	Tim Locastro	0.9	0.3	0.5
6	Mallex Smith	1.6	1.1	0.5
7	Jean Segura	1.3	0.7	0.5
8	Manuel Margot	1.1	0.6	0.5
9	Tommy Edman	0.9	0.4	0.5
10	Nick Ahmed	1.1	0.7	0.4

Top 10 Players, Baserunning Wins over Non-Pitcher Average

	Player	pWins	pLosses	pWOPA
1	**Ronald Acuña**	**1.7**	**0.9**	**0.8**
2	Nick Ahmed	1.3	0.5	0.7
3	Paul Goldschmidt	1.5	0.7	0.7
4	José Ramirez	1.2	0.5	0.7
5	Tim Locastro	0.9	0.3	0.6
6	Mookie Betts	1.3	0.7	0.6
7	Niko Goodrum	1.1	0.5	0.6
8	Elvis Andrus	1.5	0.9	0.6
9	Trea Turner	1.5	0.9	0.6
10	Tommy Edman	0.9	0.3	0.6

In context, Acuña was (perhaps arguably) the best baserunner in baseball in 2019.

The next two tables, then, show the top players in fielding eWins and pWins above replacement level among all outfielders. Using replacement level as the baseline here has two effects (both of which benefit Acuña at least somewhat). First, it gives center fielders more credit than corner outfielders since center fielders will have a lower replacement level, to reflect the added difficulty (and/or value) of the position. Second, measuring against replacement level will value raw playing time more heavily than measuring against average.

Top 10 Players, Fielding eWins over Replacement Level
Outfield

	Player	eWins	eLosses	eWORL_f
1	Bryce Harper	6.3	5.4	1.6
2	**Ronald Acuña**	**6.0**	**5.0**	**1.6**
3	Tyler Naquin	4.2	3.1	1.5
4	Harrison Bader	3.8	2.9	1.3
5	Mike Trout	4.4	3.6	1.3
6	George Springer	4.0	3.2	1.2
7	Kevin Kiermaier	4.6	3.9	1.2
8	Aaron Judge	3.9	3.1	1.1
9	Byron Buxton	3.1	2.5	1.0
10	Victor Robles	5.6	5.2	1.0

Top 10 Players, Fielding pWins over Replacement Level
Outfield

	Player	pWins	pLosses	pWORL_f
1	George Springer	4.6	2.6	2.4
2	**Ronald Acuña**	**6.4**	**4.6**	**2.3**
3	Ramon Laureano	5.6	4.1	2.0
4	Tyler Naquin	4.4	3.0	1.9
5	Cody Bellinger	5.4	4.3	1.6
6	Aaron Judge	4.1	2.9	1.6
7	Alex Verdugo	3.5	2.3	1.5
8	Bryce Harper	6.3	5.4	1.5
9	Max Kepler	5.2	4.2	1.5
10	David Peralta	4.1	3.1	1.4

By both measures – eWORL_f and pWORL_f – Acuña was the second most valuable defensive outfielder in baseball in 2019.

And he's still only 22 years old!

Pete Alonso

The first table below shows Pete Alonso's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
693	155	30	2	53	103	120	72	1	.260	.358	.583

Why Pete Alonso made the list: Pete Alonso won the National League Rookie of the Year award and finished seventh in MVP voting. He set a rookie record for home runs and became the first rookie to lead the major leagues in home runs.

What do Player won-lost records say?

Pete Alonso's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
18.0	14.3	2.8	4.5	18.4	13.9	3.5	5.3

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.8	-0.1	0.0	0.0	3.7

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.7	-0.2	3.5	1.7	5.3

Pete Alonso's value was essentially all in his bat. Which is fine if your bat produces 53 home runs and 348 total bases. And Alonso was not a **bad** baserunner or fielder; he was a little below-average at the former and exactly average at the latter.

Alonso ranked fifth in the major leagues in batting eWins over non-pitcher average and, based on that, as the best first baseman in the major leagues in 2019. Pretty good for a rookie!

Top 10 First Basemen
(ranked by eWOPA, 1B only)

	Player	eWins	eLosses	eWOPA
1	**Pete Alonso**	**18.0**	**13.9**	**3.3**
2	Matt Olson	15.3	12.4	2.5
3	Anthony Rizzo	16.6	13.3	2.4
4	Freddie Freeman	18.0	14.9	2.1
5	Paul Goldschmidt	18.3	15.3	1.9
6	Max Muncy	6.1	4.0	1.9
7	Carlos Santana	14.8	12.6	1.8
8	Yulieski Gurriel	12.4	10.5	1.5
9	Josh Bell	14.9	12.6	1.5
10	Eric Thames	9.3	7.5	1.3

Nolan Arenado

The first table below shows Nolan Arenado's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
662	185	31	2	41	102	118	62	3	.315	.379	.583

Why Nolan Arenado made the list: Nolan Arenado finished sixth in NL MVP voting. He won his seventh Gold Glove (in seven major-league seasons) as the best fielding third baseman in the National League and his third platinum glove as the best fielder in the NL at any position.

What do Player won-lost records say?

Nolan Arenado's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
20.6	16.4	3.1	5.1	20.8	16.2	3.6	5.6

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.0	0.0	0.0	0.8	3.8

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.8	-0.3	3.6	2.0	5.6

Player won-lost records see Nolan Arenado as you would expect: an excellent batter and fielder who consequently ranks among the best players in baseball. Player won-lost records agree with the Gold Glove voters that Arenado was the best fielding third baseman in the National League, although two American League third basemen bested his 0.8 net fielding wins.

Top 10 Players, Net Fielding Wins
Third Base

	Player	eWins	eLosses	Net eWins
1	Matt Chapman	5.1	3.9	1.2
2	Yoán Moncada	3.9	3.0	0.9
3	**Nolan Arenado**	**4.8**	**4.0**	**0.8**
4	Josh Donaldson	5.6	4.9	0.6
5	Todd Frazier	3.5	2.9	0.6
6	Anthony Rendon	4.2	3.8	0.5
7	Alex Bregman	2.9	2.4	0.4
8	José Ramirez	3.7	3.3	0.4
9	Marwin González	1.1	0.7	0.4
10	Eduardo Escobar	3.5	3.1	0.3

Javier Báez

The first table below shows Javier Báez's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
561	149	38	4	29	89	85	28	11	.281	.316	.847

Why Javier Báez made the list: Javier Báez was one the best position players on the Chicago Cubs, who were in playoff contention until the final week of the season.

What do Player won-lost records say?

Javier Báez's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
19.8	17.0	2.4	4.4	19.6	17.2	2.0	3.9

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
0.8	0.0	0.0	0.9	1.8

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
1.8	0.2	2.0	2.0	3.9

Javier Báez's 2019 season was not quite as impressive as his 2018 season when he finished second in NL MVP voting and earned 7.8 pWins over replacement level (pWORL). Nevertheless, as measured by Player won-lost records, Báez ranked as one of the top three defensive shortstops in baseball in 2019 (behind Paul DeJong, virtually tied with Willy Adames, as measured by net fielding wins) and as one of the top five shortstops in baseball (see Marcus Semien).

One result there which may be surprising is Javier Báez's baserunning, which, as measured by Player won-lost records, was merely league average in 2019.

The next two tables show Javy Báez's career numbers, as measured by Player won-lost records.

Season	pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
2014	5.7	6.7	-0.9	-0.3	5.8	6.6	-0.7	-0.1
2015	2.3	1.9	0.4	0.6	2.2	2.0	0.3	0.5
2016	13.3	12.2	0.6	1.8	13.6	11.9	1.3	2.4
2017	14.5	14.1	0.3	1.6	14.9	13.8	1.1	2.4
2018	22.2	16.2	5.7	7.6	21.1	17.3	3.6	5.4
2019	19.8	17.0	2.4	4.4	19.6	17.2	2.0	3.9
Career	**77.7**	**68.0**	**8.5**	**15.6**	**77.0**	**68.8**	**7.4**	**14.5**

eWins over Average				
Season	**Batting**	**Baserunning**	**Fielding**	**Total**
2014	-1.2	0.4	-0.0	-0.8
2015	-0.1	-0.0	0.3	0.2
2016	0.7	0.0	0.6	1.3
2017	0.1	0.7	-0.0	0.8
2018	2.2	0.9	-0.1	3.0
2019	0.8	0.0	0.9	1.8
Career	**2.5**	**2.1**	**1.7**	**6.2**

The 2019 season was the second-best of Báez's career, although a significant step down from his excellent 2018 season. The second table above is interesting. For his career, Báez has been significantly above average at all three aspects of play: batting, baserunning, and fielding. But he has been inconsistent at all three and, at least as measured by Player won-lost records, has never been above average at all three in the same season.

As a Cubs fan, I'm really rooting for a season where Báez combines his 2018 batting, his 2017-18 baserunning, and his 2016 or 2019 fielding. Now that would be an MVP candidate.

Cody Bellinger

The first table below shows Cody Bellinger's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
661	170	34	3	47	121	115	95	15	.305	.406	.629

Why Cody Bellinger made the list: Cody Bellinger was voted National League MVP. He won both a Gold Glove and a Silver Slugger and led the NL in total bases (351) and the major leagues in intentional walks (21). He led MLB in rWAR (Baseball-Reference's WAR) and was fourth in fWAR (Fangraphs' WAR)

What do Player won-lost records say?

Cody Bellinger's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
24.6	16.5	7.2	9.3	23.8	17.3	5.6	7.8

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
5.4	-0.0	0.0	0.2	5.6

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
5.6	-0.0	5.6	2.2	7.8

Cody Bellinger led the major leagues in both pWins and eWins. He was also the best batter in the National League, at least as measured by batting eWins over non-pitcher average.

The top 10 players in batting eWins over non-pitcher average in 2019 are shown in the next table.

Top 10 Players, Batting Wins over Non-Pitcher Average

	Player	eWins	eLosses	eWOPA
1	Mike Trout	14.6	8.9	5.7
2	**Cody Bellinger**	**17.1**	**11.3**	**5.4**
3	Alex Bregman	16.3	11.2	5.2
4	Christian Yelich	14.4	9.0	5.1
5	Pete Alonso	14.9	10.6	3.8
6	Anthony Rendon	15.1	10.9	3.7
7	Eugenio Suárez	16.5	12.3	3.6
8	Nelson Cruz	12.0	8.4	3.6
9	Xander Bogaerts	14.9	11.3	3.5
10	George Springer	13.3	9.8	3.5

Mookie Betts

The first table below shows Mookie Betts's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
706	176	40	5	29	135	80	97	16	.295	.391	.524

Why Mookie Betts made the list: Mookie Betts finished eighth in American League MVP voting and won a Gold Glove and Silver Slugger in right field. He also led the major leagues in runs scored.

What do Player won-lost records say?

Mookie Betts's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
21.6	17.1	4.0	6.1	21.2	17.4	3.3	5.4

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.1	0.3	0.0	0.2	3.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.5	-0.2	3.3	2.1	5.4

Mookie Betts had an outstanding season in 2019. As noted above, he led the American League in runs scored and won both a Gold Glove and a Silver Slugger, suggesting the voters thought he was the best hitting and best fielding right fielder in the American League.

That said, Mookie Betts's 2019 season felt like a bit of a disappointment after a 2018 season in which he batted .346/.438/.640 and won an American League MVP award.

The tables on the next page show the top 10 players in pWins over positional average and replacement level (pWOPA and pWORL) since Mookie Betts's first All-Star season in 2016.

Top 10 Players, pWOPA (2016 - 2019)

	Player	pWins	pLosses	pWOPA
1	Mike Trout	81.6	55.5	26.1
2	Max Scherzer	60.6	42.5	25.1
3	**Mookie Betts**	**95.7**	**69.0**	**24.7**
4	Justin Verlander	58.7	40.4	22.0
5	Clayton Kershaw	46.9	33.2	19.2
6	Christian Yelich	87.2	67.8	16.7
7	José Ramirez	79.7	62.0	16.5
8	Stephen Strasburg	47.3	36.7	16.4
9	Zack Greinke	53.6	43.3	16.0
10	Alex Bregman	70.4	53.6	15.8

Top 10 Players, pWORL (2016 - 2019)

	Player	pWins	pLosses	pWORL
1	Mike Trout	81.6	55.5	32.9
2	**Mookie Betts**	**95.7**	**69.0**	**32.6**
3	Max Scherzer	60.6	42.5	31.7
4	Justin Verlander	58.7	40.4	29.0
5	Clayton Kershaw	46.9	33.2	24.3
6	Christian Yelich	87.2	67.8	24.2
7	José Ramirez	79.7	62.0	23.3
8	Nolan Arenado	86.4	67.8	22.5
9	Zack Greinke	53.6	43.3	22.2
10	Bryce Harper	83.2	64.8	22.2

Of course, Mike Trout is at the top of both tables. But the second-best position player in both tables is Mookie Betts. Pretty impressive!

Shane Bieber

The first table below shows Shane Bieber's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Bieber.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
34	214.1	15	8	0	3.28	40	259	.230	.271	.393

Why Shane Bieber made the list: Bieber finished fourth in the American League in Cy Young voting. He tied for the American League lead in complete games (3) and shutouts (2), and led the AL in fewest walks per nine innings (1.68)

What do Player won-lost records say?

Shane Bieber's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
14.7	10.6	5.2	7.1	14.2	11.1	4.1	6.0

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.2	-0.0	2.7	-0.0	2.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.5	1.6	4.1	1.9	6.0

Fun factoid about Shane Bieber: he made his major-league debut on his 23rd birthday (May 31, 2018).

The next table shows the 37 players in major-league history who made their major-league debut on their birthday.

Players Who Made Their Major League Debut on Their Birthday

	Date	Birth	Debut	Age	Games	pWORL
Dan Long	August 27	1867	1890	23	21	
Pete Gilbert	September 6	1867	1890	23	206	
Fred Woodcock	May 17	1868	1892	24	5	
Murphy Currie	August 31	1893	1916	23	6	
George Ross	June 27	1892	1918	26	1	-0.1
Jess Doyle	April 14	1898	1925	27	55	1.0
Mace Brown	May 21	1909	1935	26	387	10.3
Morrie Aderholt	September 13	1915	1939	24	106	-1.5
Chris Haughey	October 3	1925	1943	18	1	-0.3
George Dockins	May 5	1917	1945	28	35	2.6
Bob Chesnes	May 6	1921	1948	27	90	2.1
Tom Hughes	September 13	1934	1959	25	2	-0.6
Ed Palmquist	June 10	1933	1960	27	36	-1.1
Gerry Arrigo	June 12	1941	1961	20	195	-1.6
Larry Dierker	September 22	1946	1964	18	357	21.0
René Lachemann	May 4	1945	1965	20	118	-0.8
Woodie Fryman	April 15	1940	1966	26	625	14.9
Mike Kilkenny	April 11	1945	1969	24	140	2.9
Junior Kennedy	August 9	1950	1974	24	446	4.0
Doug Clarey	April 20	1954	1976	22	9	0.1
John Pacella	September 15	1956	1977	21	74	-2.1
Bruce Benedict	August 18	1955	1978	23	982	-0.2
La Rue Washington	September 7	1953	1978	25	28	-0.1
Dave Clark	September 3	1962	1986	24	889	-2.9
Ken Patterson	July 8	1964	1988	24	224	-0.2
Yorkis Pérez	September 30	1967	1991	24	337	-0.2
Dan Miceli	September 9	1970	1993	23	631	3.6
Brian Looney	September 26	1969	1993	24	7	-0.4
Keith Johnson	April 17	1971	2000	29	6	-0.0
Zach Day	June 15	1978	2002	24	86	0.6
Kevin Joseph	August 1	1976	2002	26	11	-0.2
Edwin Jackson	September 9	1983	2003	20	429	-0.6
Jarrod Saltalamacchia	May 2	1985	2007	22	895	2.6
Robert Manuel	July 9	1983	2009	26	13	0.1
David Adams	May 15	1987	2013	26	43	-0.2
Wilmer Flores	August 6	1991	2013	22	670	3.5
Kennys Vargas	August 1	1990	2014	24	236	-0.7
Daniel Corcino	August 26	1990	2014	24	7	-0.5
Shane Bieber	**May 31**	**1995**	**2018**	**23**	**54**	**10.2**

Setting aside the first four players on the list, whose careers pre-date the time period over which I have calculated Player won-lost records (1918 – 2019), and none of whom had much of a career anyway, the top five players in major-league history who debuted on their birthday, ranked by career pWins over replacement level, are shown next.

Top Five Players Who Made Their Major League Debut on Their Birthday
(Ranked by Career pWORL)

	Games	pWins	pLoss	pWOPA	pWORL
Larry Dierker	357	134.0	139.8	5.4	21.0
Woodie Fryman	625	145.5	156.9	-4.5	14.9
Mace Brown	387	53.9	55.0	0.4	10.3
Shane Bieber	**54**	**22.4**	**16.5**	**7.3**	**10.2**
Junior Kennedy	446	31.6	31.5	1.0	4.0

A repeat of Bieber's strong 2019 season (7.1 pWORL) would vault him to second place on this list. Two more seasons like 2019 and he'd be number one.

Xander Bogaerts

The first table below shows Xander Bogaerts's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
698	190	52	0	33	110	117	76	4	.309	.384	.555

Why Xander Bogaerts made the list: Xander Bogaerts finished fifth in American League MVP voting and won a Silver Slugger as the best offensive shortstop in the AL. He was tenth in MLB in fWAR (Fangraphs' version of WAR).

What do Player won-lost records say?

Xander Bogaerts's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
20.4	16.9	3.5	5.5	20.1	17.1	3.0	5.0

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.5	0.1	0.0	-0.9	2.8

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.8	0.2	3.0	2.0	5.0

As measured by Player won-lost records, Xander Bogaerts was the best offensive shortstop in the major leagues.

The top 10 players in offensive eWins over positional average as a shortstop are shown in the next table.

Top 10 Shortstops
(ranked by Offensive eWOPA, SS only)

	Player	eWins	eLosses	eWOPA
1	**Xander Bogaerts**	**15.9**	**12.3**	**3.6**
2	Marcus Semien	15.2	12.0	3.2
3	Alex Bregman	6.8	4.1	2.7
4	Fernando Tatis Jr.	8.9	6.5	2.2
5	Trevor Story	14.4	11.8	2.1
6	Jorge Polanco	13.5	11.6	1.9
7	Gleyber Torres	7.4	5.9	1.6
8	Carlos Correa	7.6	6.1	1.4
9	Javier Báez	13.8	12.2	1.1
10	Tim Anderson	11.8	10.6	1.1

And the top 10 players in offensive pWins over positional average.

Top 10 Shortstops
(ranked by Offensive pWOPA, SS only)

	Player	pWins	pLosses	pWOPA
1	**Xander Bogaerts**	**15.9**	**12.2**	**3.6**
2	Jorge Polanco	14.3	10.8	3.5
3	Corey Seager	13.8	10.4	3.1
4	Marcus Semien	15.2	12.1	3.1
5	Alex Bregman	6.9	4.0	2.8
6	Javier Báez	14.2	11.9	1.9
7	Fernando Tatis Jr.	8.7	6.7	1.8
8	Gleyber Torres	7.3	6.0	1.4
9	Trea Turner	12.3	10.7	1.3
10	Chris Taylor	3.4	2.2	1.1

Alex Bregman

The first table below shows Alex Bregman's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
690	164	37	2	41	122	112	119	5	.296	.423	.592

Why Alex Bregman made the list: Alex Bregman finished second in American League MVP voting. He won a Silver Slugger for third base and led the major leagues in walks and times on base (292). Bregman was second in MLB in WAR as measured by both Baseball-Reference and Fangraphs.

What do Player won-lost records say?

Alex Bregman's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
23.1	15.4	7.4	9.4	22.1	16.3	5.4	7.5

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
5.2	-0.3	0.0	0.5	5.4

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
5.4	0.1	5.4	2.1	7.5

In context, Alex Bregman was the best hitter in the major leagues in 2019. This is, he led all major-leaguers in batting pWins over non-pitcher average. The top 10 such players are shown in the next table.

Given events which have come to light since the end of the 2019 season, I will simply leave this table here without any further comment.

Top 10 Players, Batting Wins over Non-Pitcher Average

	Player	pWins	pLosses	pWOPA
1	**Alex Bregman**	**17.0**	**10.5**	**6.5**
2	Cody Bellinger	17.6	10.8	6.4
3	Christian Yelich	14.9	8.5	6.1
4	Mike Trout	14.7	8.8	5.8
5	Nelson Cruz	12.8	7.6	5.2
6	D.J. LeMahieu	16.3	11.1	5.2
7	Matt Olson	13.5	8.2	5.2
8	Ronald Acuña	15.8	10.4	5.0
9	Freddie Freeman	15.7	10.3	4.9
10	George Springer	14.0	9.1	4.9

Luis Castillo

The first table below shows Luis Castillo's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Castillo.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
32	190.2	15	8	0	3.40	79	226	.202	.290	.343

Why Luis Castillo made the list: Castillo was named an NL All-Star. He finished third in the NL in (fewest) hits allowed per nine innings, fifth in traditional pitcher wins, sixth in strikeouts per nine innings, and ninth in strikeouts.

What do Player won-lost records say?

Luis Castillo's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
12.9	12.2	2.6	4.3	13.5	11.6	4.0	5.7

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-1.3	0.0	2.6	0.1	1.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
1.5	2.5	4.0	1.7	5.7

Luis Castillo had a breakthrough season in 2019 at the age of 26. He lowered his ERA by 0.9 and increased his strikeouts by 61 (in 21 more innings pitched). Castillo's career record, as measured by Player won-lost records, is shown next.

Season	pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
2017	5.8	5.6	1.0	1.7	6.4	5.0	2.0	2.7
2018	10.2	12.4	-0.8	0.7	10.6	12.0	0.2	1.6
2019	12.9	12.2	2.6	4.3	13.5	11.6	4.0	5.7
Career	**28.9**	**30.2**	**2.8**	**6.7**	**30.5**	**28.6**	**6.2**	**10.0**

Matt Chapman

The first table below shows Matt Chapman's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
670	145	36	3	36	102	91	73	1	.249	.342	.506

Why Matt Chapman made the list: Matt Chapman finished sixth in AL MVP voting and won his second consecutive Platinum Glove as the best fielder (at any position) in the American League.

What do Player won-lost records say?

Matt Chapman's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
21.2	15.0	5.6	7.6	20.0	16.2	3.2	5.1

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.4	-0.1	0.0	1.2	3.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.5	-0.3	3.2	1.9	5.1

Matt Chapman won his second consecutive Platinum Glove as the best defensive player in the American League, regardless of position.

It can be difficult to compare players' fielding across different positions as different positions have different defensive expectations and most fielding metrics (including Player won-lost records) measure fielding relative to average fielding at a particular position, making it difficult to compare, say, an above-average first baseman to an average or slightly below-average shortstop.

I incorporate positional value via "positional averages" which vary the baseline for "average" by position. I then calculate replacement level by subtracting one standard deviation from positional average, so that my replacement levels also vary by position. Comparing against replacement level, then, can allow one to compare fielders across different positions in a way that gives players credit for playing a more valuable defensive position (at least as measured by positional averages).

This is not perfect but is certainly better than nothing.

The top 10 players in fielding eWins over replacement level (eWORL_f) in 2019 are shown next.

Top 10 Players, Fielding eWins over Replacement Level

	Player	eWins	eLosses	eWORL_f
1	Paul DeJong	6.6	5.2	2.1
2	**Matt Chapman**	**5.1**	**3.9**	**1.7**
3	Bryce Harper	6.3	5.4	1.6
4	Ronald Acuña	6.0	5.0	1.6
5	Carlos Sánchez	5.7	4.7	1.5
6	Tyler Naquin	4.2	3.1	1.5
7	Javier Báez	5.4	4.5	1.4
8	Willy Adames	5.0	4.1	1.4
9	Harrison Bader	3.8	2.9	1.3
10	Nolan Arenado	4.8	4.0	1.3

By this measure, the Platinum Glove voters got it right in the American League. Paul DeJong, the St. Louis Cardinals' shortstop edges him out, but Matt Chapman does appear, by this metric, to have been the best fielder in the American League, regardless of position.

Gerrit Cole

The first table below shows Gerrit Cole's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Cole.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
33	212.1	20	5	0	2.50	48	326	.186	.237	.343

Why Gerrit Cole made the list: Cole finished second in AL Cy Young voting and tenth in AL MVP voting. He led the American League in ERA, strikeouts, strikeouts per nine innings, and FIP (expected ERA based on strikeouts, walks, and home runs allowed). He ranked seventh in MLB in fWAR (Fangraphs' version of WAR).

What do Player won-lost records say?

Gerrit Cole's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
14.2	8.1	7.2	8.8	13.6	8.7	5.9	7.6

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.1	-0.0	4.1	0.1	4.1

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
4.1	1.9	5.9	1.7	7.6

Gerrit Cole finished second in American League Cy Young voting, narrowly losing out to his teammate, Justin Verlander, 171 to 159 (17 first-place votes to 13).

Using Player won-lost records, a case could be made for either Cole or Verlander to have deserved the American League Cy Young award. The case for Verlander will be shown later in my discussion of him.

The case for Cole controls for context. The top 10 players in net pitching eWins in 2019 are shown next.

Top 10 Players, Net Pitching eWins

	Player	eWins	eLosses	Net eWins
1	**Gerrit Cole**	**13.1**	**9.0**	**4.1**
2	Jacob deGrom	13.4	9.5	3.9
3	Justin Verlander	13.9	10.0	3.9
4	Kirby Yates	7.7	4.1	3.6
5	Max Scherzer	10.8	7.4	3.5
6	Charlie Morton	12.4	9.0	3.4
7	Zack Greinke	13.1	9.8	3.4
8	Jack Flaherty	13.6	10.3	3.3
9	Stephen Strasburg	13.2	10.0	3.2
10	Mike Clevinger	9.2	6.2	3.0

Patrick Corbin

The first table below shows Patrick Corbin's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Corbin.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
33	202.0	14	7	0	3.25	70	238	.227	.293	.375

Why Patrick Corbin made the list: Corbin finished 11th in NL Cy Young voting. He finished fourth in the NL in strikeouts, fifth in innings pitched, and eighth in strikeouts per nine innings and ERA. He finished sixth in the NL in regular-season wins and added two traditional pitcher wins in the postseason, including Game 7 of the World Series.

What do Player won-lost records say?

Patrick Corbin's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
13.8	11.1	4.5	6.2	13.5	11.3	4.0	5.7

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-1.1	-0.0	2.5	0.1	1.4

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
1.4	2.5	4.0	1.7	5.7

In the 2018-19 offseason, the Washington Nationals lost star right fielder Bryce Harper to free agency. The Nationals then turned around and spent some of the money they saved by having Harper turn down their reported contract offer on Patrick Corbin.

It can be difficult to compare a pitcher to a right fielder. But Player won-lost records allow one to do so by putting everything that players do on a common scale, wins.

The next table, then, compares the 2019 seasons of Patrick Corbin and Bryce Harper.

	pWins	pLosses	pWOPA	pWORL
Patrick Corbin	13.8	11.1	4.5	6.2
Bryce Harper	22.7	17.7	3.9	6.1

	eWins	eLosses	eWOPA	eWORL
Patrick Corbin	13.5	11.3	4.0	5.7
Bryce Harper	22.0	18.5	2.3	4.5

Seems like a pretty good tradeoff for the Nationals.

Nelson Cruz

The first table below shows Nelson Cruz's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
521	141	26	0	41	81	108	56	0	.311	.392	.639

Why Nelson Cruz made the list: Nelson Cruz finished ninth in AL MVP voting. He won a Silver Slugger and the Edgar Martínez Award as the best designated hitter in baseball. Cruz was fifth in the AL in OBP, second in SLG, and second in OPS (OBP + SLG, 1.031). He was third in the AL in home runs and seventh in RBI.

What do Player won-lost records say?

Nelson Cruz's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
13.4	8.3	4.8	6.4	12.7	9.0	3.4	5.0

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.6	-0.1	0.0	0.0	3.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.5	-0.1	3.4	1.7	5.0

Player won-lost records agree with the voters for the Edgar Martínez Award. Nelson Cruz was the best designated hitter in the major leagues in 2019.

Top 5 Designated Hitters
(ranked by eWOPA, DH only)

	Player	eWins	eLosses	eWOPA
1	**Nelson Cruz**	**12.5**	**9.1**	**3.1**
2	Jorge Soler	11.6	8.4	2.9
3	Yordan Alvarez	7.8	5.6	2.0
4	J.D. Martínez	10.1	8.5	1.3
5	Edwin Encarnación	5.1	3.9	1.1

Jacob deGrom

The first table below shows Jacob deGrom's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against deGrom.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
32	204.0	11	8	0	2.43	44	255	.207	.257	.323

Why Jacob deGrom made the list: Jacob deGrom won his second consecutive NL Cy Young award. He led the National League in strikeouts, was second in ERA, and third in innings pitched. He led all MLB pitchers and was fifth among all players in WAR as calculated by both Baseball-Reference and Fangraphs.

What do Player won-lost records say?

Jacob deGrom's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
14.2	11.5	4.4	6.1	15.2	10.5	6.5	8.2

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.4	-0.0	3.9	0.0	3.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.5	2.9	6.5	1.7	8.2

As measured by eWins over positional average, Jacob deGrom was the best starting pitcher in the National League, well deserving of his second consecutive Cy Young Award.

Top 10 Starting Pitchers
(ranked by eWOPA, SP only)

	Player	eWins	eLosses	eWOPA
1	Gerrit Cole	13.2	9.0	5.0
2	Justin Verlander	14.0	10.0	5.0
3	**Jacob deGrom**	**13.6**	**9.6**	**4.9**
4	Zack Greinke	13.6	9.9	4.6
5	Jack Flaherty	13.8	10.3	4.4
6	Charlie Morton	12.5	9.1	4.2
7	Stephen Strasburg	13.4	10.2	4.1
8	Max Scherzer	11.0	7.7	4.1
9	Sonny Gray	11.2	8.2	3.8
10	Lance Lynn	14.1	11.3	3.8

See also my write-up of Lucas Giolito below.

Rafael Devers

The first table below shows Rafael Devers's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
702	201	54	4	32	129	115	48	8	.311	.361	.555

Why Rafael Devers made the list: Rafael Devers finished 12th in AL MVP voting. He led the American League in doubles and total bases (359), was second in runs scored, and was fourth in RBI.

What do Player won-lost records say?

Rafael Devers's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
19.9	18.4	0.9	2.9	20.6	17.7	2.4	4.5

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.8	0.2	0.0	-0.3	2.8

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.8	-0.4	2.4	2.1	4.5

Rafael Devers was one of the top offensive third basemen in baseball. The next table shows the top ten third basemen in offensive eWins over positional average (eWOPA) earned as a third baseman.

Top 10 Third Basemen
(ranked by Offensive eWOPA, 3B only)

	Player	eWins	eLosses	eWOPA
1	Anthony Rendon	16.0	11.6	3.4
2	Nolan Arenado	15.9	12.2	2.7
3	Eugenio Suárez	16.9	13.2	2.6
4	**Rafael Devers**	**16.3**	**13.4**	**2.3**
5	Matt Chapman	14.8	12.5	1.8
6	Yoán Moncada	12.8	10.6	1.7
7	Josh Donaldson	13.8	11.2	1.6
8	Alex Bregman	9.7	7.9	1.5
9	Justin Turner	11.9	9.7	1.4
10	Miguel Sano	7.6	6.2	1.2

Josh Donaldson

The first table below shows Josh Donaldson's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
659	142	33	0	37	96	94	100	4	.259	.379	.521

Why Josh Donaldson made the list: Donaldson finished 11th in NL MVP voting and won the 2019 NL Comeback Player of the Year award.

What do Player won-lost records say?

Josh Donaldson's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
20.0	15.9	3.2	5.2	19.7	16.3	2.4	4.4

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.3	-0.3	0.0	0.6	2.7

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.7	-0.3	2.4	1.9	4.4

Josh Donaldson was one of the top third basemen in baseball. He also looked somewhat better in context than expected. Combining these two facts, the next table shows the top 10 third basemen ranked by pWins over positional average.

Top 10 Third Basemen
(ranked by pWOPA, 3B only)

	Player	pWins	pLosses	pWOPA
1	Matt Chapman	21.2	15.0	5.6
2	Anthony Rendon	20.9	14.7	5.3
3	Alex Bregman	13.4	9.4	3.7
4	Nolan Arenado	20.6	16.4	3.2
5	**Josh Donaldson**	**19.8**	**15.7**	**3.1**
6	Giovanny Urshela	14.4	11.1	2.9
7	José Ramirez	16.9	13.9	2.5
8	Justin Turner	15.2	12.3	2.0
9	Eugenio Suárez	20.7	17.6	2.0
10	Yoán Moncada	16.3	14.1	1.7

Jack Flaherty

The first table below shows Jack Flaherty's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Flaherty.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
33	196.1	11	8	0	2.75	55	231	.192	.256	.335

Why Jack Flaherty made the list: Flaherty finished fourth in the National League in Cy Young voting. He led the National League in fewest hits allowed per nine innings (6.2) and WHIP (walks plus hits per inning, 0.968).

What do Player won-lost records say?

Jack Flaherty's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
14.4	12.2	4.0	5.8	14.9	11.6	5.3	7.2

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.6	-0.2	3.3	0.2	2.7

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.7	2.6	5.3	1.8	7.2

Jack Flaherty came a little bit out of nowhere to have a surprisingly good season. He finished in the top ten in baseball in eWins over positional average (5.3), replacement level (7.2), and star (3.5) and in the top five in eWOPA as a starting pitcher.

Top 5 Starting Pitchers
(ranked by eWOPA, SP only)

	Player	eWins	eLosses	eWOPA
1	Gerrit Cole	13.2	9.0	5.0
2	Justin Verlander	14.0	10.0	5.0
3	Jacob deGrom	13.6	9.6	4.9
4	Zack Greinke	13.6	9.9	4.6
5	**Jack Flaherty**	**13.8**	**10.3**	**4.4**

Freddie Freeman

The first table below shows Freddie Freeman's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
692	176	34	2	38	113	121	87	6	.295	.389	.549

Why Freddie Freeman made the list: Freeman finished eighth in NL MVP voting and won a Silver Slugger as the best-hitting first baseman in the National League. He finished second in the NL in RBI and fourth in runs scored.

What do Player won-lost records say?

Freddie Freeman's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
19.2	13.7	4.6	6.4	18.0	14.9	2.1	3.9

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.8	0.1	0.0	-0.4	2.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.5	-0.3	2.1	1.8	3.9

Freddie Freeman, like teammates Ronald Acuña and Josh Donaldson, looked better in context (pWins) than out of context (eWins).

So good, in fact, that Freeman rates as the best first baseman in the National League, as measured by pWins over positional average.

Top 10 First Basemen
(ranked by pWOPA, 1B only)

	Player	pWins	pLosses	pWOPA
1	Matt Olson	16.9	10.8	5.8
2	**Freddie Freeman**	**19.2**	**13.7**	**4.6**
3	Paul Goldschmidt	19.0	14.6	3.4
4	Eric Thames	10.2	6.5	3.3
5	Yulieski Gurriel	13.2	9.6	3.2
6	Anthony Rizzo	16.8	13.1	2.8
7	Pete Alonso	17.8	14.1	2.7
8	Carlos Santana	15.2	12.2	2.6
9	Max Muncy	6.2	3.9	2.0
10	David Freese	4.7	2.6	1.9

Mitch Garver

The first table below shows Mitch Garver's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
395	85	16	1	31	70	67	41	0	.273	.365	.630

Why Mitch Garver made the list: Mitch Garver was the best catcher in MLB in 2019 – at least as measured by Player wins over positional average.

What do Player won-lost records say?

Mitch Garver's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
9.7	7.2	3.0	4.0	9.7	7.2	3.0	3.9

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.5	-0.2	0.0	-0.1	2.3

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.3	0.7	3.0	0.9	3.9

Mitch Garver rates as the best catcher in baseball in 2019 as measured by eWins over positional average at catcher.

Top 10 Catchers
(ranked by eWOPA, C only)

	Player	eWins	eLosses	eWOPA
1	**Mitch Garver**	**9.0**	**6.7**	**2.8**
2	J.T. Realmuto	13.8	11.8	2.6
3	Yasmani Grandal	12.8	11.0	2.3
4	Omar Narváez	9.5	8.0	2.1
5	Willson Contreras	10.2	9.1	1.5
6	Robinson Chirinos	10.1	9.4	1.4
7	Will D. Smith	5.2	4.1	1.3
8	James McCann	10.0	9.4	1.3
9	Gary Sánchez	9.0	8.4	1.2
10	Carson Kelly	8.2	7.4	1.1

Garver had fewer wins than most of the other players in the table, as he appeared in fewer than 100 games and failed to qualify for the batting title by more than 100 plate appearances. But he certainly made the most of the playing time that he got.

Lucas Giolito

The first table below shows Lucas Giolito's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Giolito.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
29	176.2	14	9	0	3.41	57	228	.205	.273	.373

Why Lucas Giolito made the list: Lucas Giolito finished sixth in AL Cy Young voting and made his first All-Star team in 2019. Giolito tied for the American League lead in complete games (3) and shutouts (2).

What do Player won-lost records say?

Lucas Giolito's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
11.9	9.9	2.8	4.5	12.6	9.2	4.3	5.9

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.1	-0.0	2.8	-0.0	2.7

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.7	1.5	4.3	1.6	5.9

Lucas Giolito's 2019 season didn't exactly come out of nowhere: Giolito was a former first-round draft pick (in 2012) and he was the centerpiece of one of the key trades made by the Chicago White Sox as part of their current rebuilding project.

But in 2018, Lucas Giolito had a 6.13 ERA in 173.1 innings pitched. That was the worst ERA by any qualifying pitcher in 2018. Giolito led the major leagues in earned runs allowed in 2018 (118) and he led the American League in walks (90).

In 2019, Giolito pitched 3.1 more innings than in 2018 but walked 33 fewer batters (57) and allowed 51 fewer earned runs (67), seeing his ERA fall from 6.13 to 3.41, the latter of which was the fifth best in the American League.

Going back to 2018, however, Lucas Giolito shared one interesting statistic with Jacob deGrom.

- Among qualified pitchers, Jacob deGrom had the lowest earned run average in the major leagues in 2018, 1.70 in 217 innings.
- Among qualified pitchers, Lucas Giolito of the Chicago White Sox had the highest earned run average in the major leagues in 2018, 6.13 in 173.1 innings pitched.
- Both deGrom and Giolito started 32 games for their respective teams.
- Both pitchers earned 10 traditional pitcher wins (deGrom had 9 losses; Giolito had 13 losses).
- In Jacob deGrom's 32 starts, the New York Mets had a won-lost record of 14-18.
- In Lucas Giolito's 32 starts, the Chicago White Sox had a won-lost record of ... 14-18.

Obviously, Jacob deGrom had a vastly better season than Lucas Giolito: Giolito's ERA was more than 3.5 times larger than deGrom's. But, at the end of the day, the Mets won 14 of 32 games started by deGrom and the White Sox won 14 of 32 games started by Giolito. Given that pWins are tied to team wins, what do pWins say about the relative performances of deGrom and Giolito? Are they too similar? Well, here's what pWins have to say about their performances. There are a total of 3 pWins per team game, of which approximately one-third are earned by pitchers (for pitching). Hence, pWins are on approximately the same scale as traditional pitcher wins and losses.

	pWins	**pLosses**	**pWORL**	**pWOPA**
Jacob deGrom	14.4	10.8	6.8	5.3
Lucas Giolito	9.9	13.9	-1.7	-3.4

And here is a breakdown of the player performances of the Mets and White Sox in deGrom's and Giolito's 32 starts.

	pWins	**pLoss**	**pWin Pct.**
New York Mets	**46.0**	**50.0**	**0.479**
Jacob deGrom	14.4	10.8	0.570
Rest of Team	31.6	39.2	0.447
Chicago White Sox	**46.0**	**50.0**	**0.479**
Lucas Giolito	9.9	13.9	0.417
Rest of Team	36.1	36.1	0.500

One note that I would make up front is that this is their overall records, including batting. Because deGrom pitched for a National League team, he had 74 plate appearances, in which he batted .164/.211/.179 (which is actually slightly above average for a pitcher but, of course, well below average overall). Giolito, however, pitched for an American League team, so he only had 6 plate appearances all season - in which he went 0-for-6 with 4 strikeouts. So, deGrom's pWin percentage is pulled down by this relative to Giolito - but not deGrom's pWOPA or pWORL, which recognize that deGrom, while a bad hitter for a hitter was a pretty decent hitter for a pitcher.

Another comment I would make is that one reason why deGrom's ERA was so much better than Giolito's is because deGrom basically had no bad starts - you really can't have any truly bad starts and finish with an ERA of 1.70. In contrast, Giolito had four starts in which he pitched 2.0 or fewer innings and allowed 9, 7, 5, and 7 runs (one of the runs was unearned). In those four starts, all of which the White Sox (and Giolito) lost, Giolito had an ERA of 40.50. In his other 28 starts, Giolito had an ERA of 4.89 - which, to be clear, still isn't very good. But calculating Player won-lost records at the game level, very bad isn't all that much worse than pretty bad - all losses end up equal at the end of the day.

Now, those caveats out of the way, the pWins seem to me to be telling a reasonable story. In deGrom's 32 starts, the New York Mets earned a combined 46 pWins (18 in their 18 losses plus 28 in their 14 wins), of which deGrom earned 31.3 percent. In Giolito's 32 starts, the White Sox earned the exact same number of pWins, 46, but Giolito earned only 21.5 percent of them. The White Sox had the same record as the Mets in the 32 games being compared because Giolito's White Sox teammates played much better in his starts (0.500 pWin percentage) than deGrom's teammates played in his starts (0.447 pWin percentage).

Comparing against average (pWOPA) or replacement level (pWORL), the difference in quality between the two pitchers becomes even starker.

That said, were Jacob deGrom's 2018 pWins adversely affected by the fact that he pitched for a lousy team which gave him crappy support? Yes, absolutely. Here is a comparison between deGrom and Giolito based on expected wins, eWins.

	eWins	**eLosses**	**eWORL**	**eWOPA**
Jacob deGrom	15.4	9.7	9.3	7.7
Lucas Giolito	10.7	13.1	-0.1	-1.8

Basically, Giolito earned his 10-13 record in 2018 while deGrom deserved a much better record.

Fast forward to 2019. Giolito improved his ERA from 6.13 to 3.41. He improved his eWOPA from −1.8 to 4.3. And the Chicago White Sox record in Giolito’s starts improved from 14-18 to 16-13.

And what about Jacob deGrom? All he did was win his second straight NL Cy Young Award. And his team, the Mets, won nine more games than in 2018. In 2018, the Mets were 14-18 in Jacob deGrom’s 32 starts. In 2019, deGrom again made 32 starts. And the Mets record in those 32 games was … 14-18! So much for luck evening out!

Sonny Gray

The first table below shows Sonny Gray's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Gray.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
31	175.1	11	8	0	2.87	68	205	.196	.281	.325

Why Sonny Gray made the list: Sonny Gray finished seventh in NL Cy Young voting and made the NL All-Star team. He finished fifth in the NL in ERA.

What do Player won-lost records say?

Sonny Gray's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
11.8	9.3	3.9	5.4	11.9	9.2	4.4	5.8

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.7	-0.0	3.0	0.0	2.3

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.3	2.1	4.4	1.5	5.8

Sonny Gray rebounded from a difficult 2018 season in New York to have arguably the best season of what had already been an excellent career through 2017. Sonny Gray's career record, as measured by Player won-lost records is shown below.

Season	pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
2013	3.6	3.3	0.4	0.9	3.8	3.2	0.8	1.2
2014	12.8	11.5	1.8	3.3	13.1	11.2	2.5	4.1
2015	12.8	9.6	4.1	5.6	12.5	9.9	3.4	4.8
2016	6.8	9.7	-2.4	-1.3	7.2	9.3	-1.5	-0.3
2017	10.1	10.4	0.2	1.6	10.6	9.9	1.1	2.5
2018	7.9	8.7	-0.5	0.7	8.2	8.4	0.2	1.4
2019	11.8	9.3	3.9	5.4	11.9	9.2	4.4	5.8
Career	**65.9**	**62.6**	**7.5**	**16.3**	**67.4**	**61.1**	**10.8**	**19.6**

Zack Greinke

The first table below shows Zack Greinke's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Greinke.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
33	208.2	18	5	0	2.93	30	187	.228	.260	.364

Why Zack Greinke made the list: Zack Greinke was an All-Star and won both a Gold Glove and Silver Slugger award. Splitting time between the two leagues, Greinke finished ninth in MLB in ERA and sixth in MLB in strikeout-to-walk ratio.

What do Player won-lost records say?

Zack Greinke's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
14.8	11.1	5.3	7.0	15.3	10.6	6.3	8.1

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.0	-0.1	3.4	0.3	3.6

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.6	2.7	6.3	1.8	8.1

Zack Greinke won both a Gold Glove and a Silver Slugger as the best fielding and hitting pitcher in his league. The next two tables show the top five pitchers in net fielding wins and offensive wins over pitcher average for 2019.

Top 5 Players, Net Fielding Wins
Pitcher

	Player	eWins	eLosses	Net eWins
1	Chris Bassitt	0.4	0.0	0.4
2	**Zack Greinke**	**0.5**	**0.1**	**0.3**
3	Alex Claudio	0.3	0.0	0.2
4	Miles Mikolas	0.3	0.1	0.2
5	Vincent Velasquez	0.4	0.2	0.2

Top 5 Hitting Pitchers
(ranked by eWOPA, offense only, relative to pitchers only)

	Player	eWins	eLosses	eWOPA
1	**Zack Greinke**	**1.2**	**1.2**	**0.7**
2	Jacob deGrom	1.1	1.4	0.5
3	Max Fried	1.0	1.5	0.4
4	Zack Wheeler	1.0	1.4	0.4
5	Kenta Maeda	0.9	1.3	0.4

Although he pitched in both leagues, Greinke technically won his Gold Glove as a National League pitcher. Chris Bassitt pitched for the Oakland A's in the American League (and had a 1.000 fielding percentage in 19 chances, including 3 double plays, in 144 innings). So, it looks like voters got both awards right.

Zack Greinke was, indeed, the best fielding and best hitting pitcher in the National League, as measured by Player won-lost records.

Josh Hader

The first table below shows Josh Hader's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Hader.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
61	75.2	3	5	37	2.62	20	138	.155	.225	.366

Why Josh Hader made the list: Josh Hader won the Trevor Hoffman award as the outstanding relief pitcher in the National League. He led all major-league pitchers with 16.4 strikeouts per nine innings (min. 40 innings pitched) and was second in the NL in saves.

What do Player won-lost records say?

Josh Hader's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
9.3	5.7	2.8	4.4	8.6	6.5	1.5	3.1

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.0	-0.0	2.1	0.0	2.1

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.1	-0.6	1.5	1.6	3.1

Josh Hader is a bit of a throwback, to the 1970s and early 1980s and the days of the "fireman" relief pitcher. Back then, it was fairly common for relief pitchers to throw 100 or more innings in a season (Mike Marshall, as an extreme example, threw 208.1 innings, all in relief, in 1974). Hader has not pitched 100 innings in a season yet, but he does regularly pitch multiple innings: 204.2 innings pitched in 151 career games, all in relief.

Hader also strikes out a ton of batters, which, in terms of Player won-lost records, means that he doesn't have to share as many wins with his fielders.

The result of these two things – pitching more innings than other relief pitchers while striking out more batters than other relief pitchers – is that Josh Hader accumulates more pWins than other relief pitchers.

The next table shows the top 25 seasons of the past decade in relief pitcher pWins. Josh Hader figures prominently on the list.

Top 25 Single-Season Relief Pitcher pWins, 2010 - 2019

	Player	Season	pWins	pLosses	pWORL
1	**Josh Hader**	**2019**	**9.3**	**5.7**	**4.4**
2	Blake Treinen	2018	9.3	3.5	6.5
3	Corey Knebel	2017	9.1	5.3	4.9
4	Edwin Díaz	2018	9.1	3.3	6.5
5	Carlos Marmol	2010	9.0	4.9	5.1
6	Trevor Rosenthal	2014	8.8	6.1	3.7
7	Jeurys Familia	2016	8.8	4.8	4.5
8	Dellin Betances	2015	8.7	4.6	4.7
9	Kirby Yates	2019	8.6	3.4	5.7
10	Heath Bell	2010	8.4	3.3	6.0
11	Alex Colome	2017	8.3	3.9	5.2
12	Taylor Rogers	2019	8.1	4.1	4.6
13	**Josh Hader**	**2018**	**8.0**	**3.6**	**5.0**
14	Ernesto Frieri	2013	8.0	4.5	4.3
15	José Valverde	2011	7.9	3.7	4.7
16	Brian Wilson	2010	7.9	2.9	5.7
17	Cody Allen	2017	7.8	5.2	3.6
18	Felipe Vázquez	2018	7.8	4.4	4.2
19	Kenley Jansen	2017	7.8	2.1	6.3
20	Andrew Miller	2016	7.8	2.3	5.8
21	Zach Britton	2016	7.8	1.8	6.2
22	Fernando Rodney	2014	7.8	5.6	3.0
23	Greg Holland	2013	7.7	3.1	5.3
24	Brad Hand	2018	7.7	6.0	2.6
25	Drew Storen	2011	7.6	4.0	4.2

I discuss the changing use of relief pitchers through baseball history, with special attention to the last few years, in Chapter 2.

Bryce Harper

The first table below shows Bryce Harper's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
682	149	36	1	35	98	114	99	15	.260	.372	.510

Why Bryce Harper made the list: I included Bryce Harper because he finished in the top 5 in major-league baseball in pWins and eWins in 2019.

What do Player won-lost records say?

Bryce Harper's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
22.7	17.7	3.9	6.1	22.0	18.5	2.3	4.5

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.2	-0.3	0.0	0.9	2.8

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.8	-0.5	2.3	2.2	4.5

Bryce Harper had a very good and, I think, underappreciated 2019 season. One way in which Player won-lost records see his season as having been particularly underappreciated is his fielding.

In fact, as measured by net fielding eWins, Bryce Harper was the best defensive right fielder in baseball in 2019.

Top 5 Players, Net Fielding Wins
Right Field

	Player	eWins	eLosses	Net eWins
1	**Bryce Harper**	**6.3**	**5.4**	**0.9**
2	Aaron Judge	3.9	3.1	0.7
3	Tyler Naquin	2.9	2.3	0.6
4	Garrett Cooper	1.5	1.0	0.5
5	Ramon Laureano	1.0	0.5	0.5

See also my discussion of Patrick Corbin earlier in this chapter.

Aaron Judge

The first table below shows Aaron Judge's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
447	103	18	1	27	75	55	64	3	.272	.381	.540

Why Aaron Judge made the list: Despite missing 60 regular-season games, Judge was the second-most valuable player on the 103-win New York Yankees team which won the AL East and made the AL Championship Series.

What do Player won-lost records say?

Aaron Judge's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
15.0	9.9	4.8	6.1	14.1	10.8	3.0	4.3

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.4	-0.0	0.0	0.7	3.2

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.2	-0.2	3.0	1.4	4.3

Aaron Judge finished second in American League MVP voting in his rookie season, 2017. The 2017 MVP vote has come up in the news again this offseason. Without commenting on the factors which have brought it into the news recently, I thought I'd share the contents of an article which I wrote about this vote at the time.

On November 17, 2017, Bill James wrote a provocative article, entitled *Judge and Altuve*. I wrote an article in response to James, which I'm going to excerpt here (with slightly updated data). The specific focus of the article was the 2017 American League MVP race but the broader focus was what James views as a failing of WAR.

> *"We reach, then, the key question in this debate: is it appropriate, in assigning the individual player credit for wins, to do so based on the usual and normal relationship of runs to wins, or based on the actual and specific relationship for this player and this team?*
> *...*
> *The logic for applying the normal and usual relationship is that deviations from the normal and usual relationship should be attributed to luck....*
> *... that argument is just dead wrong."*

James goes on to lay out "five reasons why it is wrong." Rather than quote too heavily from James, I would urge you to look up the article and read it for yourself: Bill James is a great writer and a great thinker about baseball.

The next day (November 18, 2017), Joe Posnanski wrote about James's article, and, more generally, Bill James's apparent years-long "problem with WAR". Posnanski basically agreed with James.

> *"Is a team winning or losing more games than expectation 'chance?' I've always thought that's mostly true, but I will just say: It's a copout to just stop there."*

Ironically, on the same day that Posnanski was posting his article, I was giving a presentation to the Chicago chapter of SABR, discussing my Player won-lost records (and my book: *Player Won-Lost Records in Baseball: Measuring Performance in Context*). This was ironic (I think - I'm more a math guy than an English guy; I could be using the word "ironic" wrong) because the very premise of my talk was that Player won-lost records are an improvement over current sabermetric statistics (including WAR) precisely because Player won-lost records are built up from actual team wins (and losses).

The final slide of my presentation highlighted the reasons "[w]hy ... we need Player wins and losses".

- [Player won-lost records] fill a niche: Player wins tied to team wins by game
- Most baseball statistics start with [theoretical] runs and convert from [theoretical] runs to theoretical wins
- Starting from a different (better) place - actual wins - reveals a host of fascinating new insights

So, let's begin where Bill James began: José Altuve vs. Aaron Judge. The next table compares Altuve and Judge in Player won-lost records.

Player won-lost records are calculated two ways:

(1) pWins and pLosses tie to team wins, with the players on a team earning 2 pWins and 1 pLoss in every team win and 1 pWin and 2 pLosses in every team loss;

(2) eWins and eLosses control for context and are not tied to specific team wins and losses.

The last two columns measure wins over positional average (WOPA) and wins over replacement level (WORL).

	Games	pWins	pLoss	pWOPA	pWORL
José Altuve	153	21.9	16.0	6.1	7.8
Aaron Judge	155	21.0	15.2	5.2	6.9

	Games	eWins	eLoss	eWOPA	eWORL
José Altuve	153	21.2	16.7	4.7	6.4
Aaron Judge	155	21.7	14.5	6.6	8.3

So, James is correct in his specific contention: José Altuve contributed more actual team victories for the 2017 Houston Astros than Aaron Judge did for the 2017 New York Yankees, although Judge produced more expected wins.

So, does this mean that Altuve deserved the MVP award over Judge?

Setting aside other considerations, in my opinion, yes, it does. But there's no reason why my opinion must prevail. Other people are entitled to their own opinions. Which is precisely why I calculate Player won-lost records two ways and precisely why I calculate wins over both positional average and replacement level. There's even a page on my website where you can apply your own weights to rank players however you'd like.

But even though I think that one could reasonably prefer eWins to pWins and, hence, believe that Aaron Judge should have been the American League MVP in 2017, I think that Bill James is correct. The failure to link WAR to actual wins at any point in the process is a flaw in the construction of WAR.

Joe Posnanski perhaps lays out the issue best:

> *"Look: Baseball Reference WAR and Fangraphs WAR go to great care figuring out how many runs a player is worth. They calculate (in different ways) what a positional player's value is as a hitter, as a base runner, as a fielder. They make a positional adjustment .... They make a league-wide adjustment, based on the run-scoring atmosphere of the league ...*
>
> *This all takes a great deal of calculation and thought and bold viewpoints. WAR is a wonderful formula in so many ways. And when the calculations are done, we are left with a number of runs a player/pitcher is worth, a number that can then be compared with the run value of a replacement player.*
>
> *And after all this very intense math, how do they get from RAR (Runs Above Replacement) to WAR (Wins Above Replacement)? They basically just divide the total by 10."*

And here is where WAR goes astray. The assumption is that all theoretical runs are the same. But all theoretical runs are not the same.

Player won-lost records, though, start from wins. And they start from actual wins. Expected wins are the **second** set of numbers I calculate, and they're calculated such that the total number of expected wins match actual wins by component and sub-component. That is, for a given season, the expected value of a home runs is set so that the sum of the expected wins from home runs equal the actual wins from home runs. And ditto for doubles, and walks, and ground outs to the third baseman. And to quote myself, "[s]tarting from a different (better) place - actual wins - reveals a host of fascinating new insights."

- Context measures derived from raw win probability (WPA, Leverage) undervalue the early innings of games. This has particular implications for the valuation of starting pitchers (who primarily pitch those early innings).
- WAR weights fielding too heavily relative to pitching (and offense).
- Events which produce actual runs are more valuable than similar events which do not produce runs. Because of this, home runs are undervalued in a linear weights framework because home runs are guaranteed to produce runs.

So, does one **have** to take context into account when voting for MVP? No, I don't think so, although I would personally be inclined to do so. But if one is purporting to measure player contributions to **wins**, then I do think that one ought to begin one's analysis with actual wins. And I believe that my Player won-lost records do this better than any other statistic.

D.J. LeMahieu

The first table below shows D.J. LeMahieu's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
655	197	33	2	26	109	102	46	5	.327	.375	.518

Why D.J. LeMahieu made the list: D.J. LeMahieu finished fourth in American League MVP voting and won a Silver Slugger.

What do Player won-lost records say?

D.J. LeMahieu's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
21.4	15.3	6.1	8.1	20.5	16.2	4.2	6.2

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.9	0.2	0.0	0.8	3.9

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.9	0.3	4.2	2.0	6.2

D.J. LeMahieu was the most valuable player on the 2019 New York Yankees, who won 103 games and the American League East by seven games. He was also the best second baseman in baseball both in and out of context.

Top 10 Second Basemen
(ranked by eWOPA, 2B only)

	Player	eWins	eLosses	eWOPA
1	**D.J. LeMahieu**	**10.1**	**8.3**	**2.1**
2	Kolten Wong	17.1	15.1	2.0
3	Brandon Lowe	8.8	7.2	1.8
4	José Altuve	16.2	14.9	1.8
5	Ozzie Albies	19.1	17.7	1.5
6	Cavan Biggio	10.2	9.0	1.4
7	Max Muncy	8.3	7.1	1.2
8	Mike Moustakas	5.3	4.1	1.2
9	Keston Hiura	10.3	9.3	1.1
10	Tommy Edman	3.4	2.4	1.0

Top 10 Second Basemen
(ranked by pWOPA, 2B only)

	Player	pWins	pLosses	pWOPA
1	**D.J. LeMahieu**	**11.1**	**7.4**	**3.9**
2	Ozzie Albies	19.9	16.8	3.2
3	Brandon Lowe	9.3	6.8	2.7
4	José Altuve	16.3	14.8	1.9
5	Max Muncy	8.6	6.9	1.7
6	Tommy Edman	3.8	2.1	1.7
7	Jonathan Schoop	12.5	11.1	1.7
8	Cavan Biggio	10.2	9.0	1.5
9	Keston Hiura	10.4	9.2	1.3
10	Luis Arraez	5.1	4.0	1.2

Lance Lynn

The first table below shows Lance Lynn's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Lynn.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
33	208.1	16	11	0	3.67	59	246	.243	.300	.390

Why Lance Lynn made the list: Lance Lynn finished fifth in AL Cy Young voting. He finished fourth in the AL in strikeouts and innings pitched and seventh in ERA. Lynn was eighth in MLB in rWAR (Baseball-Reference's version of WAR).

What do Player won-lost records say?

Lance Lynn's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
14.2	11.3	3.9	5.8	14.5	11.0	4.4	6.3

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.0	-0.0	2.8	0.0	2.8

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.8	1.6	4.4	1.9	6.3

As measured by Player won-lost records, Lance Lynn put together the best season of his nine-year career in 2019. Lynn's career, as measured by Player won-lost records, is shown next.

Season	pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
2011	1.9	1.5	0.4	0.6	2.0	1.4	0.6	0.9
2012	12.0	10.6	2.5	3.9	10.8	11.8	0.2	1.6
2013	12.6	12.6	1.4	2.9	12.2	13.0	0.5	2.0
2014	13.6	11.7	3.2	4.7	12.6	12.7	1.2	2.7
2015	12.4	12.0	1.9	3.3	12.6	11.8	2.3	3.7
2016	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	11.2	12.6	-0.1	1.4	11.5	12.3	0.4	1.9
2018	9.3	9.9	-0.1	1.3	9.9	9.4	1.1	2.5
2019	14.2	11.3	3.9	5.8	14.5	11.0	4.4	6.3
Career	**87.1**	**82.3**	**13.0**	**23.9**	**85.9**	**83.5**	**10.6**	**21.5**

Ketel Marte

The first table below shows Ketel Marte's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
628	187	36	9	32	97	92	53	10	.329	.389	.592

Why Ketel Marte made the list: Ketel Marte finished fourth in NL MVP voting and ranked in the top 10 in MLB in WAR as measured by both Baseball-Reference (10th) and Fangraphs (8th).

What do Player won-lost records say?

Ketel Marte's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
19.2	15.7	3.5	5.4	19.6	15.3	4.2	6.1

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.3	0.1	0.0	0.1	3.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.5	0.7	4.2	1.9	6.1

As measured by Player won-lost records, Ketel Marte was the best center fielder in baseball whose last name wasn't a fish.

Top 10 Center Fielders
(ranked by eWOPA, CF only)

	Player	eWins	eLosses	eWOPA
1	Mike Trout	18.8	12.3	6.8
2	**Ketel Marte**	**12.7**	**9.0**	**3.7**
3	George Springer	10.1	7.6	2.7
4	Ronald Acuña	13.2	10.6	2.4
5	Mark Canha	7.7	6.0	1.8
6	Byron Buxton	9.2	8.0	1.4
7	Ramon Laureano	13.3	12.2	1.3
8	Teoscar Hernández	9.0	7.9	1.2
9	Joey Gallo	4.9	3.8	1.2
10	Harrison Bader	11.2	10.3	0.7

Mike Minor

The first table below shows Mike Minor's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Minor.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
32	208.1	14	10	0	3.59	68	200	.244	.308	.395

Why Mike Minor made the list: Mike Minor finished eighth in AL Cy Young voting and was named to the All-Star team for the first time in his career. He was fourth in the AL in innings pitched, sixth in ERA, and tenth in strikeouts. Minor was seventh in MLB in rWAR (Baseball-Reference's version of WAR).

What do Player won-lost records say?

Mike Minor's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
13.7	11.6	3.1	5.0	13.9	11.3	3.6	5.5

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.1	-0.0	2.2	0.0	2.1

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.1	1.5	3.6	1.9	5.5

Mike Minor had the best season of his career in 2019.

Minor has had an interesting career. After a mediocre five-year major-league career from 2010 – 2014, all with the Atlanta Braves, Minor missed the entire 2015 season and spent the entire 2016 season in the minor leagues.

He broke back into the majors in 2017 with a solid season out of the bullpen for the Kansas City Royals: 65 games, 77.2 innings pitched, with 88 strikeouts, 6 saves and a 2.55 ERA.

From there, he moved to the Texas Rangers, for whom he has put together back-to-back solid seasons in their starting rotation.

The next table compares Minor's first five major-league seasons (ages 22 – 26) with his three most recent seasons, Minor's age-29 through age-31 seasons.

Seasons	pWins	pLoss	pWOPA	pWORL	eWins	eLoss	eWOPA	eWORL
2010 - 14	38.6	42.2	0.2	4.9	37.8	43.0	-1.1	3.6
2017 - 2019	**28.7**	**23.5**	**6.3**	**10.5**	**28.9**	**23.3**	**6.8**	**10.9**

Yoán Moncada

The first table below shows Yoán Moncada's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
559	161	34	5	25	83	79	40	10	.315	.367	.548

Why Yoán Moncada made the list: Moncada finished in the top 10 in the American League in batting average (third) and OPS (tenth at .915). As measured by Player won-lost records, he was arguably one of the top five third basemen in MLB.

What do Player won-lost records say?

Yoán Moncada's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
16.6	14.2	1.9	3.5	17.0	13.7	2.9	4.5

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.3	-0.0	0.0	0.9	3.1

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.1	-0.3	2.9	1.7	4.5

Yoán Moncada had a breakthrough season in 2019, both offensively (see my discussion of Rafael Devers) and defensively (see my discussion of Nolan Arenado), at the age of 24.

The next table shows the players most similar in value to Yoán Moncada through age 24 as measured by Player won-lost records.

Most Similar Players to Yoán Moncada, through age 24

Player	Games	pWins	pLosses	pWOPA	pWORL
Yoán Moncada	**343**	**38.7**	**38.5**	**0.2**	**4.0**
Bobby Murcer	343	43.4	40.6	0.4	4.7
Les Bell	272	31.0	31.4	0.3	3.4
Rick Reichardt	266	35.4	31.8	1.0	4.3
Jerry Turner	356	32.5	29.4	1.7	4.8
Domingo Santana	285	32.2	30.5	0.3	3.2
Mel Hall	299	33.1	30.7	1.1	4.1
Odubel Herrera	306	33.9	34.0	-1.1	2.1
Joey Gallo	346	33.0	32.7	-0.5	2.6
Craig Biggio	334	33.1	32.2	1.7	4.6
Bill Melton	331	40.9	40.5	-1.3	2.9

Breaking through at age 24 is not quite like breaking through at age 20 or 21 (see my discussion of Juan Soto below). But the above table does include one Hall-of-Famer as well as several other players who had very good careers – along with a few guys that I have to admit I had never heard of.

For those curious, Les Bell was a third baseman for the St. Louis Cardinals, Boston Braves, and Chicago Cubs in the 1920s who had two pretty good seasons, including batting .325/.383/.518 for the 1926 World Champion Cardinals at the age of 25, but who played his final major-league game at the age of 29.

White Sox fans might take that age-25 performance from Moncada, especially if, like Bell, he does it for a World Champion team. But surely White Sox fans, and I suspect most baseball fans in general, hope that Moncada's career ends up lasting somewhat longer than Bell's.

Charlie Morton

The first table below shows Charlie Morton's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Morton.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
33	194.2	16	6	0	3.05	57	240	.215	.283	.340

Why Charlie Morton made the list: Charlie Morton finished third in the AL in Cy Young voting. He led the American League in fewest home runs allowed per nine innings (0.7), was third in ERA, and fifth in strikeouts. Morton earned the traditional pitcher win in two of the Tampa Rays' three playoff victories allowing two runs (one earned) in 10 innings with 13 strikeouts.

What do Player won-lost records say?

Charlie Morton's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
13.1	8.6	5.3	7.0	12.9	8.8	4.9	6.5

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.1	-0.0	3.4	-0.0	3.3

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.3	1.6	4.9	1.6	6.5

After a fairly unremarkable nine seasons from 2008 through 2016, the 2019 season was the third consecutive season in which Charlie Morton had a new career-best season at ages 33, 34, and 35.

Season	pWins	pLoss	pWOPA	pWORL	eWins	eLoss	eWOPA	eWORL
2008 - 2016	56.6	69.3	-6.8	0.8	58.9	67.0	-1.4	6.2
2017	9.6	8.8	1.2	2.5	9.7	8.7	1.4	2.7
2018	10.6	7.6	3.5	4.8	9.8	8.4	2.0	3.3
2019	13.1	8.6	5.3	7.0	12.9	8.8	4.9	6.5
Career	**89.8**	**94.3**	**3.3**	**15.1**	**91.3**	**92.9**	**7.0**	**18.8**

Max Muncy

The first table below shows Max Muncy's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
589	122	22	1	35	101	98	90	4	.251	.374	.515

Why Max Muncy made the list: Muncy finished 15th in NL MVP voting

What do Player won-lost records say?

Max Muncy's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
18.7	13.3	5.0	6.7	18.2	13.8	4.0	5.7

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.1	-0.0	0.0	0.6	3.7

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.7	0.3	4.0	1.7	5.7

Max Muncy played 141 games total, starting 130 of them, but did not play more than 70 games (62 starts) at any one position. He started 62 games at second base, 42 games at first base, and 26 games at third base. The next table decomposes Max Muncy's Player won-lost records by position (the numbers here include both offense and defense when he was listed in the lineup at the given position).

Position	pWins	pLosses	pWOPA	eWins	eLosses	eWOPA
First Base	6.2	3.9	2.0	6.1	4.0	1.9
Second Base	8.6	6.9	1.7	8.3	7.1	1.2
Third Base	3.8	2.3	1.4	3.5	2.6	0.7
Pinch Hitter	0.1	0.3	-0.1	0.1	0.3	-0.2

Muncy was excellent at all three infield positions but in limited playing time. The next table combines the four infield positions and shows the top 10 infielders in MLB in 2019 as measured by eWins over positional average.

Top 10 Infielders
(ranked by eWOPA, IF only)

	Player	eWins	eLosses	eWOPA
1	Alex Bregman	21.3	16.2	4.8
2	**Max Muncy**	**17.9**	**13.6**	**3.9**
3	Anthony Rendon	20.2	15.4	3.9
4	D.J. LeMahieu	20.2	16.3	3.8
5	Nolan Arenado	20.7	16.2	3.5
6	Marcus Semien	20.9	17.5	3.4
7	Pete Alonso	18.0	13.9	3.3
8	Matt Chapman	19.9	16.4	3.0
9	Xander Bogaerts	19.9	17.1	2.7
10	Eugenio Suárez	21.1	17.3	2.7

This table best highlights why Max Muncy was among the 50 players that I profiled here.

Jake Odorizzi

The first table below shows Jake Odorizzi's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Odorizzi.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
30	159	15	7	0	3.51	53	178	.234	.300	.371

Why Jake Odorizzi made the list: Jake Odorizzi was the most valuable pitcher for the Minnesota Twins, who won 101 regular-season games and the AL Central division and made his first All-Star team.

What do Player won-lost records say?

Jake Odorizzi's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
11.3	7.5	4.5	5.9	10.6	8.2	3.2	4.6

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.0	0.0	2.1	-0.0	2.1

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.1	1.2	3.2	1.4	4.6

Jake Odorizzi had an outstanding 2019 season but in somewhat limited time. His 159 innings pitched are the fewest of any starting pitcher profiled in this chapter and, in fact, are too few for him to qualify for rate-based leaderboards. Lowering the innings pitched limit to 150 IP, Odorizzi would have ranked sixth in the 2019 American League in ERA and tenth in strikeouts per nine innings.

Odorizzi's lack of innings also hurts him in comparisons using Player won-lost records, even when measured against positional average (or even star). Shifting the focus from wins over some baseline to winning percentage, however, helps highlight why I have included Odorizzi among the 50 players I profile here.

The next table shows the top 10 starting pitchers, ranked by pWin Pct. (i.e., pWins divided by [pWins + pLosses]), among starting pitchers with a minimum of 10 pWins. The numbers here reflect only player decisions earned as a starting pitcher.

Top 10 Starting Pitchers
(ranked by pWin Pct., SP only, min. 10 pWins)

	Player	pWins	pLosses	pWin Pct.
1	Gerrit Cole	14.2	8.0	0.641
2	Justin Verlander	15.4	8.7	0.640
3	Max Scherzer	11.5	7.2	0.614
4	Hyun-Jin Ryu	12.8	8.0	0.614
5	Charlie Morton	13.1	8.6	0.604
6	Stephen Strasburg	14.2	9.4	0.602
7	**Jake Odorizzi**	**11.2**	**7.5**	**0.601**
8	Mike Soroka	10.4	7.1	0.597
9	Shane Bieber	14.7	10.4	0.585
10	Eduardo Rodriguez	13.4	9.7	0.580

All ten pitchers in the above table are among the 50 players profiled here.

Matt Olson

The first table below shows Matt Olson's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
547	129	26	0	36	73	91	51	0	.267	.351	.545

Why Matt Olson made the list: Olson won a Gold Glove, was seventh in the AL in home runs, and finished 21st in AL MVP voting.

What do Player won-lost records say?

Matt Olson's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
16.9	10.8	5.8	7.3	15.4	12.3	2.6	4.1

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.3	-0.1	0.0	0.7	2.9

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.9	-0.3	2.6	1.5	4.1

Matt Olson was the best fielding first baseman in the American League in 2019 measured by net fielding eWins or net fielding pWins. He was the best fielding first baseman in the major leagues measured by net fielding pWins.

Top 10 Players, Net Fielding Wins
First Base

	Player	pWins	pLosses	Net pWins
1	**Matt Olson**	**2.9**	**2.0**	**1.0**
2	Christian Walker	2.9	2.2	0.8
3	Yulieski Gurriel	1.7	1.0	0.7
4	Anthony Rizzo	2.5	2.1	0.4
5	Brandon Belt	2.5	2.1	0.4
6	Ronald Guzmán	1.4	1.0	0.4
7	Jesús Aguilar	1.0	0.6	0.4
8	Max Muncy	1.0	0.6	0.4
9	Pete Alonso	2.8	2.5	0.4
10	Paul Goldschmidt	2.7	2.3	0.3

Top 10 Players, Net Fielding Wins
First Base

	Player	eWins	eLosses	Net eWins
1	Anthony Rizzo	2.6	1.9	0.7
2	**Matt Olson**	**2.8**	**2.1**	**0.7**
3	Max Muncy	1.1	0.6	0.5
4	Christian Walker	2.7	2.4	0.4
5	C.J. Cron	1.9	1.6	0.4
6	Yulieski Gurriel	1.5	1.2	0.3
7	Carlos Santana	2.1	1.8	0.3
8	Paul Goldschmidt	2.6	2.4	0.2
9	Garrett Cooper	1.1	0.9	0.2
10	Trey Mancini	0.9	0.7	0.2

J.T. Realmuto

The first table below shows J.T. Realmuto's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
593	148	36	3	25	92	83	41	9	.275	.328	.493

Why J.T. Realmuto made the list: J.T. Realmuto finished 14th in NL MVP voting, won both a Gold Glove and a Silver Slugger, and is arguably the best catcher in major-league baseball.

What do Player won-lost records say?

J.T. Realmuto's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
14.4	12.4	2.5	3.9	14.4	12.4	2.5	3.9

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
0.7	0.1	0.0	0.5	1.3

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
1.3	1.2	2.5	1.5	3.9

J.T. Realmuto was second in major-league baseball in catcher wins over positional average (either eWins or pWins), behind Mitch Garver. But Garver played only 82 games (673.2 innings) at catcher in 2019 while Realmuto played 133 games (1,139.1 innings) behind the plate. Garver was a little better per game but in a lot fewer games.

Shifting the baseline against which one measures from average to replacement level shows the added value provided by J.T. Realmuto. The top 10 catchers in eWins over replacement level in 2019 are shown in the next table.

Top 10 Catchers
(ranked by eWORL, C only)

	Player	eWins	eLosses	eWORL
1	**J.T. Realmuto**	**13.8**	**11.8**	**3.9**
2	Mitch Garver	9.0	6.7	3.7
3	Yasmani Grandal	12.8	11.0	3.6
4	Omar Narváez	9.5	8.0	3.1
5	Willson Contreras	10.2	9.1	2.6
6	Robinson Chirinos	10.1	9.4	2.4
7	James McCann	10.0	9.4	2.4
8	Gary Sánchez	9.0	8.4	2.2
9	Christian Vázquez	9.6	9.2	2.1
10	Carson Kelly	8.2	7.4	2.0

Anthony Rendon

The first table below shows Anthony Rendon's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
646	174	44	3	34	117	126	80	5	.319	.412	.598

Why Anthony Rendon made the list: Anthony Rendon finished third in National League MVP voting. He led the NL in doubles and RBI, was second in OBP, third in SLG, and batted .328/.413/.590 with 3 home runs and 15 RBI in 75 postseason plate appearances to help lead the Washington Nationals to the first World Championship in franchise history.

What do Player won-lost records say?

Anthony Rendon's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
20.9	14.7	5.3	7.2	20.4	15.2	4.2	6.1

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.7	0.3	0.0	0.5	4.4

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
4.4	-0.2	4.2	1.9	6.1

Anthony Rendon was the best third baseman in major-league baseball in 2019. See also my discussion of Stephen Strasburg below.

Top 10 Third Basemen
(ranked by eWOPA, 3B only)

	Player	eWins	eLosses	eWOPA
1	**Anthony Rendon**	**20.2**	**15.4**	**3.9**
2	Nolan Arenado	20.7	16.2	3.5
3	Matt Chapman	19.9	16.4	3.0
4	Eugenio Suárez	21.1	17.3	2.7
5	Yoán Moncada	16.7	13.7	2.5
6	Josh Donaldson	19.4	16.2	2.3
7	Rafael Devers	20.3	17.7	2.0
8	Alex Bregman	12.6	10.3	1.9
9	Kris Bryant	13.3	11.3	1.3
10	Justin Turner	14.7	12.8	1.1

Eduardo Rodriguez

The first table below shows Eduardo Rodriguez's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Rodriguez.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
34	203.1	19	6	0	3.81	75	213	.253	.323	.391

Why Eduardo Rodriguez made the list: Eduardo Rodriguez finished sixth in AL Cy Young voting. He led the AL in games started, was third in traditional pitcher wins, sixth in innings pitched, and ninth in strikeouts and ERA.

What do Player won-lost records say?

Eduardo Rodriguez's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
13.5	9.8	4.6	6.3	13.0	10.3	3.6	5.3

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.1	-0.0	2.3	-0.0	2.2

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.2	1.4	3.6	1.7	5.3

Eduardo Rodriguez built upon a strong partial season in 2018 in which he had a traditional won-lost record of 13-5 with a 3.82 ERA in 129.2 innings to help the Boston Red Sox win 108 regular-season games and the World Series. His 2019 rate numbers were similar to 2018 (ERA, WHIP, K/9, pWin Pct.) but over 70 more innings.

Eduardo Rodriguez's career record, as measured by Player won-lost records, is shown next.

Season	pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
2015	7.6	6.9	1.2	2.2	7.3	7.2	0.7	1.6
2016	5.7	7.1	-1.0	-0.1	6.5	6.3	0.6	1.5
2017	8.4	8.1	0.7	1.8	8.7	7.8	1.3	2.5
2018	9.0	6.5	3.0	4.1	8.2	7.3	1.4	2.5
2019	13.5	9.8	4.6	6.3	13.0	10.3	3.6	5.3
Career	**44.1**	**38.4**	**8.6**	**14.4**	**43.7**	**38.8**	**7.7**	**13.5**

Hyun-Jin Ryu

The first table below shows Hyun-Jin Ryu's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Ryu.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
29	182.2	14	5	0	2.32	24	163	.234	.263	.359

Why Hyun-Jin Ryu made the list: Hyun-Jin Ryu led the National League in ERA and finished second in Cy Young voting.

What do Player won-lost records say?

Hyun-Jin Ryu's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
13.5	9.4	5.7	7.3	12.9	10.1	4.5	6.0

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.8	-0.0	2.7	0.2	2.1

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.1	2.4	4.5	1.6	6.0

Hyun-Jin Ryu was arguably one of the top five starting pitchers in major-league baseball in 2019.

Here is that argument.

Top 10 Starting Pitchers
(ranked by pWOPA, SP only)

	Player	pWins	pLosses	pWOPA
1	Justin Verlander	15.4	8.7	7.8
2	Gerrit Cole	14.2	8.0	7.2
3	Stephen Strasburg	14.2	9.4	5.8
4	**Hyun-Jin Ryu**	**12.8**	**8.0**	**5.5**
5	Charlie Morton	13.1	8.6	5.4
6	Shane Bieber	14.7	10.4	5.3
7	Max Scherzer	11.5	7.2	5.0
8	Eduardo Rodriguez	13.4	9.7	4.6
9	Zack Greinke	13.6	9.9	4.6
10	Jake Odorizzi	11.2	7.5	4.5

Max Scherzer

The first table below shows Max Scherzer's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Scherzer.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
27	172.1	11	7	0	2.92	33	243	.222	.266	.371

Why Max Scherzer made the list: Max Scherzer finished third in NL Cy Young voting (his lowest finish since 2015). He led the National League in FIP (expected ERA based solely on strikeouts, walks, and home runs allowed, 2.45) and strikeout-to-walk ratio (7.36). He also went 3-0 with a 2.40 ERA and 37 strikeouts in 30 postseason innings.

What do Player won-lost records say?

Max Scherzer's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
12.3	8.6	5.3	6.7	12.2	8.7	5.0	6.4

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.9	-0.0	3.5	-0.1	2.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.5	2.6	5.0	1.4	6.4

In 2019, Max Scherzer finished in the top 5 in Cy Young voting for the seventh consecutive season. He has led his league in traditional pitcher wins, WHIP, and strikeout-to-walk ratio four times each; in strikeouts, strikeouts per nine innings, and complete games three times each; and in innings pitched and shoutouts twice each. He has won three Cy Young awards.

So, where exactly does Max Scherzer rank historically?

The next table shows the ten players most similar to Max Scherzer as measured by career Player won-lost records.

Most Similar Players to Max Scherzer, career totals

Player	Games	pWins	pLosses	pWOPA	pWORL
Max Scherzer	**371**	**154.6**	**121.6**	**46.0**	**63.3**
Dazzy Vance	400	174.1	140.7	40.0	60.2
Bret Saberhagen	403	153.7	121.0	39.7	57.1
Roy Halladay	416	170.9	133.3	47.7	67.3
Roy Oswalt	369	147.3	123.3	37.7	54.2
Zack Greinke	499	188.4	157.9	45.2	67.2
Pete Alexander	305	138.0	112.8	30.7	46.6
Tim Hudson	489	197.9	167.5	45.9	68.4
Johan Santana	360	128.0	97.3	37.9	52.6
Walter Johnson	234	91.2	70.8	24.1	34.6
Andy Pettitte	533	210.7	175.2	46.6	72.0

The Grover Cleveland "Pete" Alexander and Walter Johnson comps are somewhat misleading here. I have only calculated Player won-lost records back to 1918, so the "career" records of Alexander and Johnson are missing some of the earliest years of their careers. Of course, in all likelihood, the numbers here are missing several years of Max Scherzer's eventual career as well.

The closest comp to Scherzer is Dazzy Vance. Vance pitched primarily for the Brooklyn Dodgers in the 1920s and early 1930s and was elected to the Hall of Fame in 1955. Vance got a late start to his career, not pitching a full season until he was 31 years old. But once he got going, he dominated the National League. Most impressively, he led the NL in strikeouts and strikeouts per nine innings for seven consecutive seasons, from 1922 through 1928. Vance also led the NL in ERA, shutouts, and WHIP three times apiece, and in traditional pitcher wins twice. He won a pitching Triple Crown in 1924, going 28-6 with a 2.16 ERA and 262 strikeouts in 308.1 innings pitched, winning the National League MVP award (there were no Cy Young awards back then).

The second player on the list, Bret Saberhagen, is not in the Hall of Fame, but is, for example, in the Hall of Merit at Baseball Think Factory. Saberhagen won two Cy Young awards and a World Series MVP.

The third player on the list, Roy Halladay, was inducted into the Hall of Fame in 2019, in his first year of eligibility. He is discussed in Chapter 3 of this book.

Overall, that's a pretty impressive set of comps. And Max Scherzer isn't done yet.

Marcus Semien

The first table below shows Marcus Semien's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
747	187	43	7	33	123	92	87	10	.285	.369	.522

Why Marcus Semien made the list: Marcus Semien finished third in American League MVP voting. He was fourth in MLB in rWAR (Baseball-Reference's version of WAR) and sixth in fWAR (Fangraphs' version of WAR).

What do Player won-lost records say?

Marcus Semien's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
21.2	17.2	3.9	6.0	21.1	17.3	3.7	5.7

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.1	0.1	0.0	0.2	3.4

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.4	0.3	3.7	2.1	5.7

Marcus Semien was the best shortstop in major-league baseball as measured by eWins over positional average as a shortstop.

Top 10 Shortstops
(ranked by eWOPA, SS only)

	Player	eWins	eLosses	eWOPA
1	**Marcus Semien**	**20.9**	**17.5**	**3.4**
2	Alex Bregman	8.7	5.9	2.8
3	Xander Bogaerts	19.9	17.1	2.7
4	Trevor Story	19.6	16.8	2.4
5	Javier Báez	19.2	16.8	2.0
6	Corey Seager	17.1	14.7	1.9
7	Fernando Tatis Jr.	12.0	9.9	1.8
8	Paul DeJong	19.9	17.7	1.8
9	Carlos Correa	10.0	8.3	1.7
10	Gleyber Torres	9.9	8.3	1.6

Mike Soroka

The first table below shows Mike Soroka's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Soroka.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
29	174.2	13	4	0	2.68	41	142	.236	.288	.340

Why Mike Soroka made the list: Mike Soroka finished sixth in NL Cy Young voting and second in Rookie of the Year voting. Soroka was third in the NL in ERA and led the National League in fewest home runs allowed per nine innings (0.7).

What do Player won-lost records say?

Mike Soroka's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
11.2	8.3	4.3	5.6	10.9	8.5	3.9	5.2

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.7	0.0	2.3	0.2	1.8

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
1.8	2.1	3.9	1.3	5.2

Pete Alonso hit 53 home runs, which led the major leagues. He drove in 120 runs and scored 103 runs. He seemed an obvious choice for NL Rookie of the Year. And, indeed, he did win the NL Rookie of the Year Award in a rout, winning 29 of 30 first-place votes.

Mike Soroka received the 30th first-place vote.

They made for an interesting contrast. Alonso led the major leagues in home runs. Mike Soroka led the major leagues in fewest home runs allowed per inning, allowing only 14 home runs in 174.2 innings pitched.

And when you take everything into consideration, that one vote for Mike Soroka really doesn't look so questionable.

	pWins	pLosses	pWOPA	pWORL
Mike Soroka	11.2	8.3	4.3	5.6
Pete Alonso	18.0	14.3	2.8	4.5

	eWins	eLosses	eWOPA	eWORL
Mike Soroka	10.9	8.5	3.9	5.2
Pete Alonso	18.4	13.9	3.5	5.3

Instead, my question is why did Soroka only get one first-place vote?

Juan Soto

The first table below shows Juan Soto's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
659	153	32	5	34	110	110	108	12	.282	.401	.548

Why Juan Soto made the list: Juan Soto finished ninth in NL MVP voting. He capped his season off by batting .333/.438/.741 with 3 home runs and 7 RBI in the Washington Nationals' 7-game World Series victory.

What do Player won-lost records say?

Juan Soto's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
21.4	18.2	2.3	4.4	21.6	18.0	2.6	4.8

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.0	0.0	0.0	-0.3	2.7

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.7	-0.1	2.6	2.1	4.8

Juan Soto was the best left fielder in major-league baseball in 2019, as measured by Player won-lost records.

Top 10 Left Fielders
(ranked by eWOPA, LF only)

	Player	eWins	eLosses	eWOPA
1	**Juan Soto**	**21.4**	**18.2**	**2.4**
2	Austin Meadows	5.3	3.9	1.4
3	Joc Pederson	8.8	7.1	1.3
4	Kyle Schwarber	16.8	14.8	1.3
5	J.D. Davis	9.7	8.0	1.3
6	Ronald Acuña	5.7	4.5	1.0
7	Jay Bruce	5.6	4.4	1.0
8	Michael Brantley	14.7	13.5	0.9
9	Ryan Braun	13.8	12.3	0.9
10	Joey Gallo	4.2	3.3	0.9

- **How Likely is Juan Soto to Make the Baseball Hall of Fame?**

On September 4, 2019, Jeremy Frank (Twitter handle: @MLBRandomStats) ran a Twitter poll asking people what probability they would give for Juan Soto to make the Baseball Hall of Fame. The poll generated a lot of comments along the lines of, "What are you, nuts!? The kid is 20 years old. No 20-year-old is 'likely' to make the Hall of Fame." Which seems like the obviously correct answer. If Juan Soto makes the Hall of Fame, it isn't going to happen for 20 or 30 more years. A lot can happen in 20 or 30 years. And for pitchers, I think it almost certainly is the obviously correct answer. Way too many 20-year-old pitchers blow out their arms.

Anyway, the four options for this poll were something like "0-24%", "25-49%", "50-74%", and "75-100%". I believe the winning percentage – and the one that I know I chose – wasn't "0-24%"; it was "25-49%". I'm a little uncomfortable giving a (now) 21-year-old better-than-even odds of making the Hall of Fame. But given how good he's been so far, it's actually surprisingly likely that Soto can seal the deal and put up a Hall-of-Fame career.

How likely?

The next table shows the 25 players most similar to Juan Soto in value through age 20, as measured by Player won-lost records. My similarity scores have two dimensions: quantity (e.g., raw pWins, eWins, etc.) and quality (e.g., wins over positional average, or WOPA). They also incorporate not merely total pWins and eWins but also how those were accumulated across the four basic factors: batting, baserunning, pitching, and fielding.

Most Similar Players to Juan Soto, age 27+

Player	Games	pWins	pLosses	pWOPA	pWORL
Juan Soto	**266**	**37.2**	**30.8**	**4.7**	**8.1**
Alex Rodriguez	211	27.1	23.1	5.5	7.9
Ken Griffey Jr.	282	35.7	33.9	1.3	4.6
Bryce Harper	257	36.9	29.3	6.1	9.3
Ted Williams	149	25.2	17.1	6.8	9.1
Jimmie Foxx	205	19.2	16.0	2.9	4.8
Claudell Washington	221	28.9	24.0	4.1	6.7
Al Kaline	320	38.0	34.4	1.5	5.3
Frank Robinson	152	23.5	18.1	3.9	6.0
Tony Conigliaro	249	30.7	31.2	-3.1	-0.0
Jason Heyward	142	20.0	16.3	2.6	4.3
Mike Trout	179	27.3	18.9	7.9	10.1
Mickey Mantle	238	35.6	23.5	10.9	14.0
Travis Jackson	218	26.6	24.8	2.7	5.4
Ronald Acuña	111	15.0	12.5	1.8	3.1
Vada Pinson	181	27.8	24.6	1.7	4.3
Willie Mays	121	15.6	13.0	2.0	3.5
Arky Vaughan	129	18.2	17.6	1.2	3.0
Roberto Alomar	143	20.1	17.1	3.2	5.0
Fernando Tatis Jr.	84	11.8	10.1	1.7	2.9
Andruw Jones	184	19.8	16.2	2.7	4.5
Eddie Mathews	145	16.4	16.3	-0.5	1.2
Giancarlo Stanton	100	13.1	10.7	1.7	2.9
Freddie Lindstrom	263	27.2	26.5	0.9	3.6
Mel Ott	340	44.0	33.3	8.2	12.4
Manny Machado	207	25.1	22.6	2.4	4.7

In some ways, the first name on the list is the perfect argument for both viewpoints: being this good at age 20 means Juan Soto is extremely likely to have an excellent statistical career, but if we're interested in the literal question here, it should be noted that Alex Rodriguez is probably not going to be elected to the Baseball Hall of Fame (he becomes eligible in two years). Of course, that's not what most people mean when they speculate that something could derail Juan Soto's career.

What most people mean by that is that he could suffer a career-ending injury like Tony Conigliaro (#9). In fact, a surprisingly large number of people who make such an argument tend to mention Tony Conigliaro by name. Why? Well, he is the obvious counter-example of a position player who suffered a career-ending injury. But also, he's kind of the only counter-example of a position player who suffered a career-ending injury.

The 25 players in the above table break down as follows. Eight of them are not yet eligible for the Hall of Fame (including Alex Rodriguez). Four of them are eligible for the Hall of Fame but not in it: Claudell Washington, Tony Conigliaro, Vada Pinson, and Andruw Jones (who is still on the BBWAA Hall-of-Fame ballot). And 13 of the 25 players in the above table are in the Hall of Fame. Setting aside the players not yet eligible, then, 13 of 17 players (76.5%) are in the Hall of Fame.

Now, two of them – Travis Jackson and Freddie Lindstrom – are fairly weak Hall-of-Famers, inducted by Veterans' Committees several decades after they retired and widely considered as Hall-of-Fame mistakes. But who's to say that Juan Soto won't end up being a controversial Hall-of-Fame selection of some future Veterans' Committee? And while Jackson and Lindstrom may be weak Hall-of-Famers, Ted Williams, Frank Robinson, Mickey Mantle, and Willie Mays, among others, are not.

George Springer

The first table below shows George Springer's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
556	140	20	3	39	96	96	67	6	.292	.383	.591

Why George Springer made the list: George Springer finished seventh in AL MVP voting and won a Silver Slugger.

What do Player won-lost records say?

George Springer's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
19.4	12.3	7.0	8.7	18.3	13.4	4.8	6.5

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
3.5	0.2	0.0	0.8	4.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
4.5	0.3	4.8	1.8	6.5

George Springer's 2019 season was significantly better in context (measured by pWins) than when controlling for context (i.e., measured by eWins).

Measured by pWins over positional average, George Springer was the best defensive center fielder in the major leagues and the second-best center fielder overall.

Top 10 Players, Net Fielding Wins
Center Field

	Player	pWins	pLosses	Net pWins
1	**George Springer**	**2.9**	**1.5**	**1.4**
2	Jake Marisnick	2.5	1.6	1.0
3	Byron Buxton	3.3	2.4	0.9
4	Ronald Acuña	3.6	2.7	0.9
5	Harrison Bader	3.8	3.0	0.8
6	Alex Verdugo	1.9	1.2	0.7
7	César Puello	0.9	0.4	0.5
8	David Dahl	1.7	1.2	0.5
9	Oscar Mercado	3.0	2.5	0.5
10	Kevin Kiermaier	4.5	4.0	0.5

Top 10 Center Fielders
(ranked by pWOPA, CF only)

	Player	pWins	pLosses	pWOPA
1	Mike Trout	18.5	12.5	6.2
2	**George Springer**	**10.8**	**6.9**	**4.0**
3	Ronald Acuña	13.9	9.9	3.9
4	Ketel Marte	12.7	9.0	3.6
5	Mark Canha	8.2	5.5	2.8
6	Byron Buxton	9.8	7.4	2.5
7	Ramon Laureano	13.7	11.8	2.1
8	Aaron Hicks	7.7	5.7	2.1
9	Brett Gardner	11.3	9.6	1.8
10	Oscar Mercado	10.2	8.7	1.6

Trevor Story

The first table below shows Trevor Story's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
656	173	38	5	35	111	85	58	23	.294	.363	.554

Why Trevor Story made the list: Trevor Story finished 12th in NL MVP voting and won a Silver Slugger award.

What do Player won-lost records say?

Trevor Story's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
19.0	17.5	1.1	3.1	19.8	16.7	2.7	4.7

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
2.2	-0.0	0.0	0.3	2.4

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.4	0.3	2.7	2.0	4.7

Trevor Story was one of the best shortstops in major-league baseball in 2019. For evidence, see my earlier discussions of Xander Bogaerts and Marcus Semien.

The Colorado Rockies have seen their starting shortstop named to seven of the last eleven National League All-Star teams. Troy Tulowitzki was the Rockies shortstop from 2007 – 2015 and made five All-Star teams. Tulowitzki was traded to the Toronto Blue Jays at the 2015 trade deadline.

Trevor Story was the Rockies' Opening Day shortstop the next season. He hit two home runs on Opening Day 2016 and then homered in each of the next three games as well. In his sixth major-league game, he hit his seventh major-league home run. Injury cut Story's rookie season short, but he has made the National League All-Star team in each of the past two seasons.

The next table compares the career records of Troy Tulowitzki and Trevor Story, as measured by Player won-lost records. Tulowitzki played for the Rockies from age 21 through age 29.

	Trevor Story				Troy Tulowitzki			
Age	**pWins**	**pLoss**	**pWOPA**	**pWORL**	**pWins**	**pLoss**	**pWOPA**	**pWORL**
21					2.3	2.6	-0.2	-0.0
22					21.5	18.4	3.2	4.9
23	13.5	11.4	2.2	3.4	12.0	12.5	-0.0	1.1
24	17.4	15.0	2.4	3.9	21.6	18.2	3.9	5.7
25	21.9	17.9	3.7	5.6	19.4	14.6	5.3	6.8
26	19.0	17.5	1.1	3.1	20.9	17.9	3.5	5.3
27					6.2	5.9	0.5	1.1
28					16.5	14.6	2.3	3.8
29					11.5	10.7	0.9	1.9
30					16.4	14.7	2.2	3.6
31					16.2	15.2	1.4	2.9
32					6.3	8.0	-1.6	-0.9
33								
34					0.2	0.4	-0.2	-0.1
------	------	------	------	------	------	------	------	------
CAREER	71.9	61.7	9.5	15.9	170.9	153.9	21.1	36.2

Story became a starter one year later than Tulowitzki and hasn't quite reached the heights that Tulowitzki reached in 2009 and 2010. But he still has plenty of time left to catch up.

Stephen Strasburg

The first table below shows Stephen Strasburg's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Strasburg.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
33	209	18	6	0	3.32	56	251	.210	.271	.349

Why Stephen Strasburg made the list: Stephen Strasburg finished fifth in NL Cy Young voting, 15th in MVP voting, and went 5-0 in the postseason with a 1.98 ERA and 47 strikeouts in 36.1 innings pitched, capping off his season by being named World Series MVP.

What do Player won-lost records say?

Stephen Strasburg's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
15.2	11.1	6.0	7.8	14.7	11.5	5.2	6.9

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-1.0	-0.0	3.2	0.1	2.3

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
2.3	2.9	5.2	1.8	6.9

As noted above, Stephen Strasburg was named World Series MVP and was undefeated throughout the 2019 postseason. Not surprisingly, this translates into the top performance of the 2019 postseason as measured by Player won-lost records.

The next table shows the top 10 players in postseason pWins over replacement level for the 2019 postseason.

Top 10 Players, 2019 Postseason
(ranked by pWORL)

	Player	pWins	pLosses	pWORL
1	**Stephen Strasburg**	**2.8**	**1.2**	**2.1**
2	Gerrit Cole	2.9	1.4	2.0
3	Max Scherzer	2.5	1.3	1.7
4	Anthony Rendon	2.9	1.5	1.5
5	José Altuve	3.0	2.0	1.3
6	Howie Kendrick	2.4	1.6	1.0
7	Adam Eaton	2.5	1.7	0.9
8	Juan Soto	3.0	2.3	0.9
9	Gleyber Torres	1.8	1.1	0.9
10	Daniel Hudson	1.3	0.6	0.8

Seven of the players in the above table played for the World Champion Washington Nationals. Measuring against replacement level gives a bit of a boost for playing time – provided it is good playing time – and pWins are tied to team wins, both of which would tend to favor the players on teams who go deeper into the postseason.

Of course, teams generally go deep into the postseason because their players play well. And the seven Nationals players shown here certainly all played well in the 2019 postseason.

Mike Trout

The first table below shows Mike Trout's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
600	137	27	2	45	110	104	110	11	.291	.438	.645

Why Mike Trout made the list: Because he's Mike Trout. Trout won his third American League MVP award and led the American League in on-base percentage, slugging percentage, and, obviously, OPS (1.083). Trout was first in fWAR (Fangraphs' version of WAR) and third in rWAR (Baseball-Reference's version of WAR).

What do Player won-lost records say?

Mike Trout's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
20.0	13.4	6.7	8.6	20.5	12.9	7.7	9.6

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
5.7	0.4	0.0	0.8	7.0

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
7.0	0.8	7.7	1.8	9.6

What is there to say about Mike Trout? Player won-lost records are as impressed with Trout as most other statistics (and most baseball fans) are. He led the major leagues in eWins over positional average, replacement level, and star (eWOPA, eWORL, eWO*). He was slightly less impressive in context, but was still in the top ten in pWOPA, pWORL, and pWO* despite missing 28 games.

The next table shows the players most similar to Mike Trout, as measured by career Player won-lost records.

Most Similar Players to Mike Trout, career totals

Player	Games	pWins	pLosses	pWOPA	pWORL
Mike Trout	**1199**	**178.0**	**122.3**	**54.2**	**68.8**
Johnny Mize	1883	221.1	156.6	49.7	69.9
Jackie Robinson	1382	195.6	140.6	51.6	69.5
Larry Walker	1984	269.5	214.7	39.6	63.3
Jeff Bagwell	2150	276.4	202.3	50.2	73.6
Larry Doby	1530	215.7	163.5	42.1	62.5
Darryl Strawberry	1583	219.9	163.1	46.0	64.3
Arky Vaughan	1817	269.6	221.3	52.3	78.4
Charlie Keller	1169	173.5	119.0	46.0	61.7
Hank Greenberg	1394	197.8	136.0	45.9	63.3
Carlton Fisk	2498	251.9	219.3	43.1	65.9

Mike Trout is 28 years old. Comparing his numbers for his first nine seasons to the career totals of other players generates a list of ten players, eight of whom are in the Hall of Fame.

What I love about this, though, is that several of these Hall-of-Famers also had short careers for various reasons. Robinson and Doby were the first two African-Americans to play in MLB. Mize and Greenberg (and Charlie Keller) missed time due to World War II.

The next table, then, shows the players most similar to Mike Trout through age 27 (Trout turned 28 in August, so 2019 was considered his age-27 season).

Most Similar Players to Mike Trout, thru age 27

Player	Games	pWins	pLosses	pWOPA	pWORL
Mike Trout	**1199**	**178.0**	**122.3**	**54.2**	**68.8**
Mickey Mantle	1245	198.4	123.0	67.7	84.5
Alex Rodriguez	1275	178.3	146.4	40.0	56.0
Joe DiMaggio	979	170.8	108.6	57.3	72.3
Albert Pujols	1091	156.4	104.9	42.4	55.1
Arky Vaughan	1149	181.0	147.2	37.1	54.4
Babe Ruth	450	98.2	54.3	40.9	49.1
Hank Aaron	1194	190.4	138.6	41.7	58.7
Eddie Mathews	1176	168.3	122.9	40.6	55.9
Jimmie Foxx	1227	162.5	102.9	50.2	64.7
Ted Williams	736	130.3	81.8	42.0	53.5

I think that table speaks for itself.

Justin Verlander

The first table below shows Justin Verlander's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Verlander.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
34	223	21	6	0	2.58	42	300	.172	.219	.361

Why Justin Verlander made the list: Justin Verlander won the American League Cy Young award and finished 11th in AL MVP voting. Verlander led AL pitchers in traditional pitcher wins, innings pitched, fewest hits allowed per nine innings, WHIP (walks plus hits per inning, 0.803), and strikeout-to-walk ratio. He was second in the AL in ERA and strikeouts and sixth in MLB in Baseball-Reference's version of WAR.

What do Player won-lost records say?

Justin Verlander's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
15.4	8.8	7.7	9.5	14.5	9.7	5.8	7.6

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
-0.1	-0.0	3.9	0.1	3.9

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.9	1.9	5.8	1.8	7.6

Justin Verlander won the American League Cy Young Award, edging out teammate Gerrit Cole by a vote of 171 to 159 (17 first-place votes to 13).

Using Player won-lost records, a case could be made for either Cole or Verlander to have deserved the American League Cy Young award. The case for Cole was shown earlier in my discussion of him and was based on eWins.

The case for Verlander, on the other hand, is based on pWins. The top 10 players in net pitching pWins in 2019 are shown next.

Top 10 Players, Net Pitching Wins

	Player	pWins	pLosses	Net pWins
1	**Justin Verlander**	**15.3**	**8.6**	**6.6**
2	Gerrit Cole	14.1	7.9	6.2
3	Kirby Yates	8.5	3.3	5.3
4	Stephen Strasburg	13.9	9.3	4.7
5	Will M. Smith	7.0	2.4	4.6
6	Charlie Morton	13.0	8.5	4.5
7	Hyun-jin Ryu	12.4	7.9	4.5
8	Max Scherzer	11.3	6.9	4.4
9	Shane Bieber	14.6	10.3	4.3
10	Taylor Rogers	7.8	3.8	4.0

Kirby Yates

The first table below shows Kirby Yates's traditional statistics. The last three columns are the batting average, on-base percentage, and slugging percentage against Yates.

G	IP	W	L	SV	ERA	BB	K	BA	OBP	SLG
60	60.2	0	5	41	1.19	13	101	.186	.252	.262

Why Kirby Yates made the list: Kirby Yates was the best relief pitcher in major-league baseball in 2019. He led major-league baseball with 41 saves (in 44 save opportunities). His ERA was the lowest in MLB among pitchers with 20 or more innings pitched.

What do Player won-lost records say?

Kirby Yates's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
8.6	3.4	4.4	5.7	7.8	4.3	3.0	4.3

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
0.0	0.0	3.6	-0.1	3.5

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
3.5	-0.5	3.0	1.3	4.3

Kirby Yates was the best relief pitcher in baseball, as measured by Player won-lost record.

The top 10 relief pitchers in pWins (as a relief pitcher only) over either positional average or replacement level (pWOPA and pWORL) are shown in the next two tables.

Top 10 Relief Pitchers
(ranked by pWOPA, RP only)

	Player	pWins	pLosses	pWOPA
1	**Kirby Yates**	**8.6**	**3.4**	**4.4**
2	Will M. Smith	7.1	2.5	4.0
3	Taylor Rogers	8.1	4.1	3.4
4	Felipe Vázquez	6.0	2.3	3.1
5	Brandon Workman	6.8	3.2	3.1
6	Josh Hader	9.3	5.7	2.8
7	Luke Jackson	7.4	4.3	2.5
8	Ian Kennedy	5.5	2.7	2.4
9	Aaron Bummer	5.6	2.8	2.3
10	Carlos Martínez	5.2	2.5	2.3

Top 10 Relief Pitchers
(ranked by pWORL, RP only)

	Player	pWins	pLosses	pWORL
1	**Kirby Yates**	**8.6**	**3.4**	**5.7**
2	Will M. Smith	7.1	2.5	5.0
3	Taylor Rogers	8.1	4.1	4.6
4	Josh Hader	9.3	5.7	4.4
5	Brandon Workman	6.8	3.2	4.1
6	Felipe Vázquez	6.0	2.3	4.0
7	Luke Jackson	7.4	4.3	3.8
8	Liam Hendriks	7.2	4.4	3.4
9	Ian Kennedy	5.5	2.7	3.3
10	Roberto Osuna	6.5	3.8	3.3

Christian Yelich

The first table below shows Christian Yelich's traditional statistics.

PA	H	2B	3B	HR	R	RBI	BB	SB	BA	OBP	SLG
580	161	29	3	44	100	97	80	30	.329	.429	.671

Why Christian Yelich made the list: Christian Yelich finished second in National League MVP voting and led the NL in all three slash stats: batting average, on-base percentage, and slugging percentage (and, of course, OPS). Yelich was third in MLB in fWAR (Fangraphs' version of WAR) and ninth in rWAR (Baseball-Reference's version of WAR).

What do Player won-lost records say?

Christian Yelich's Player won-lost records for 2019 are shown in the next three tables. The first shows his basic Player won-lost records, both in and out of context. The second and third tables derive his eWins over replacement level (eWORL) from the underlying factors: batting, baserunning, and fielding.

pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
21.2	14.0	6.4	8.3	20.9	14.3	5.7	7.6

eWins over Average				
Batting	Baserunning	Pitching	Fielding	Total
5.1	0.3	0.0	0.3	5.7

Total (from above)	Positional Adjustments	eWOPA	Replacement Wins	eWORL
5.7	0.0	5.7	1.9	7.6

Christian Yelich was the best right fielder in major-league baseball in 2019.

Top 10 Right Fielders
(ranked by eWOPA, RF only)

	Player	eWins	eLosses	eWOPA
1	**Christian Yelich**	**19.8**	**14.1**	**4.9**
2	Cody Bellinger	16.4	12.3	3.4
3	Mookie Betts	18.1	15.2	2.4
4	Aaron Judge	12.9	10.2	2.3
5	Bryce Harper	21.5	18.5	1.9
6	George Springer	6.4	4.7	1.6
7	Michael Conforto	15.8	13.6	1.3
8	Max Kepler	10.2	8.6	1.2
9	Ronald Acuña	3.4	2.4	0.9
10	Matthew Joyce	3.7	2.7	0.8

Chapter 2: Defining Characteristics of 2019 Baseball

There were two general trends in major-league baseball in 2019 that seemed to me to get considerable attention. First, and most significant, major-league records were set in 2019 for home runs (6,766; 661 more than the previous record of 6,105 in 2017) and strikeouts (42,823; 2019 was the 12th consecutive season in which the record for total strikeouts across MLB was set). The result is that 2019 baseball continued a recent trend toward "three true outcome" baseball with a record-low 63.8% of plate appearances resulting in a ball in play, i.e., a play that involves a fielder.

The second trend was that for most of the 2019 season, the combined ERA of starting pitchers was lower than the combined ERA of relief pitchers. Relievers made a bit of a comeback late in the season (and/or starting pitchers faltered a bit later in the season), so that starting pitchers' ERA ended up slightly higher than relief pitchers' ERA, 4.54 versus 4.48. But the relative roles of starting versus relief pitching certainly saw the continuation of significant trends, both long-run and short-run.

This chapter explores these two aspects of 2019 baseball through the lens of Baseball Player won-lost records. The first section looks at the relative values of various offensive events in 2019 and how that compared to historical values of these events. The second section looks at starting pitching versus relief pitching through history with a special emphasis on 2019.

- **Net Win Values for Offensive Events**

There is, I think, a general understanding among baseball fans of the idea that the value a run is worth fewer wins in a higher-scoring environment (Coors Field, the late 1990s, whatever) than in a low-scoring environment (Dodger Stadium in the 1960s, the Deadball Era). Taken to the extreme, for example, suppose the average final score in an MLB game was 1-0. In that case, a home run would literally be worth one win – score a run, win the game; hit a home run, score a run. Easy-peasy. If, on the other hand, the average final score in an MLB game was 13-11, a single home run, while certainly still valuable, would be worth far less.

So, the relationship between runs and wins is broadly understood, at least in a general sense.

Most sabermetric measures evaluate offense through a two-stage process. Basic results – singles, doubles, walks, double plays, etc. – are translated into runs. Those runs are then translated into wins. The latter step assumes that all runs are created equal, or at least are worth the same number of wins.

Player won-lost records, however, are calculated through a one-stage process. Basic results are translated directly into wins.

By translating directly from basic results (singles, doubles, home runs, etc.) to wins, one can answer the question, "does it matter ***how*** teams score runs?" It turns out that the answer to this is that, "Yes, it definitely matters how runs score." And that turns out to have interesting implications on the 2019 season.

Let me start with an excerpt from my first book to establish how net win values calculated using Player won-lost records differ from traditional run values. (*Player Won-Lost Records in Baseball: Measuring Performance in Context*, McFarland 2017, pp. 152-3) (Some of the numbers have changed a little bit since that book was published.)

Wins vs. Runs

Baseball events are more typically valued in terms of runs as opposed to wins. The next table compares win values from my work with linear weights run values. The Linear Weights Run Values here are taken from the *2006 Hardball Times Baseball Annual* ("What's a Batted Ball Worth?" by Dave Studenmund, pp. 142-143), which, in turn, cites an article by Tom Ruane. These Run Values are for 2002 - 2004. To make the comparison consistent, the net win values in the next table are also for 2002 - 2004. The average runs scored per 9 innings over these three years was 5.01.

Event	HR	T	D	S/ROE	W/HBP	IW	Out
Net Win Value	0.1346	0.0747	0.0562	0.0350	0.0293	0.0099	-0.0234
Linear Weight Value	1.394	1.055	0.772	0.465	0.315	0.176	-0.278
Runs per Win	10.4	14.1	13.7	13.3	10.7	17.9	11.9

Two numbers seem particularly worthy of comment here.

First, home runs are somewhat more valuable in terms of wins than in terms of runs. For example, the Linear Weights Run Values suggest that a single and a triple are worth more (1.52 runs) than a home run (1.39 runs), whereas the win values suggest just the opposite: the home run (0.1346 wins) is worth more than the combined win value of a single and a triple (0.0350 + 0.0747 = 0.1097 wins). The same is true of a home run vis-a-vis two doubles (run value of 1.54 runs vs. win value of 0.1124).

Why might this be? Well, first, I should acknowledge that it could just be a fluke of the data (although these specific relationships are true, as far as I can tell, for every league for which I have calculated Player won-lost records). More likely, I think there is something to this result. Specifically, I think the key is that a home run always generates at least one run, whereas, while, for example, a triple produces more than one run on average, there are cases where a team will fail to score any runs in an inning despite hitting a triple.

The key to winning baseball games is to score runs (and prevent the other team from scoring - this argument works exactly the same in that respect from a defensive standpoint). There are two factors which affect the number of runs scored: the expected number of runs scored, which is measured by the Linear Weights Run Value, and the probability of scoring one or more runs. A home run produces a higher probability of scoring (100%) than other types of hits and, hence, has a greater impact on winning, even controlling for the expected number of runs scored.

The other event which has markedly different run and win values is the intentional walk. Based on linear weights, an intentional walk is worth approximately 55% of an unintentional walk. The win value of an intentional walk, on the other hand, is only 34% of the value of an unintentional walk. While I should again acknowledge the possibility that this is a data fluke, I think that this suggests that major-league managers generally do a pretty decent job of issuing intentional walks appropriately and that Linear Weights run values likely overstate the true cost of intentional walks (and understate the strategic abilities of major-league managers).

The rest of this section, then, focuses on some of the unique aspects of the 2019 season and their implication in terms of the net win values of various offensive events.

Basic Events

In terms of run scoring, the 2019 season was fairly typical relative to the whole of baseball history. For the games for which I have play-by-play data, from 1918 through 2019, I calculate that teams scored an average of 4.74 runs per 27 outs. In 2019, that figure was 5.08, not terribly different.

But the way in which those 5 runs were scored in 2019 was very different from how teams scored 5 runs per game through most of baseball history. Specifically, 2019 MLB saw record numbers of home runs and strikeouts, while batting averages were quite low by historical standards.

To look at how the way baseball was played in 2019 affected player value, I am going to look at seven seasons / groups of seasons, as follows.

- 1918 – 2019: All games for which I have calculated Player won-lost records
- 1930: The highest-scoring season for which I have calculated Player won-lost records
- 2000: The highest-scoring season since integration
- **2019**
- 1940: The season most similar to 2019 in runs per game
- 1968: The lowest-scoring season for which I have calculated Player won-lost records
- 1918 – 1919: The two Deadball Era seasons for which I have some data

The values shown in this section are net context-neutral offensive win values (i.e., eWins minus eLosses, expressed in terms of the offensive team during the event)

The first set of numbers are for basic events: outs, singles, doubles, triples, home runs, and walks. The numbers for 'singles' here include ROE (reached on error) and 'walks' include hit-by-pitches:

	R/27	HR	T	D	S/ROE	W/HBP	IW	Out
1918 - 2019	4.74	0.1416	0.0779	0.0597	0.0363	0.0311	0.0079	-0.0232
1930	6.03	0.1224	0.0605	0.0486	0.0327	0.0355	0.0170	-0.0233
2000	5.48	0.1301	0.0710	0.0518	0.0355	0.0299	0.0098	-0.0244
2019	**5.08**	**0.1287**	**0.0818**	**0.0599**	**0.0340**	**0.0274**	**0.0122**	**-0.0234**
1940	5.01	0.1410	0.0708	0.0578	0.0351	0.0353	0.0075	-0.0233
1968	3.60	0.1697	0.0968	0.0722	0.0428	0.0335	0.0050	-0.0231
1918-19	3.99	0.1533	0.0790	0.0614	0.0391	0.0390	0.0149	-0.0213

There is an obvious general relationship between the value of positive offensive events and the overall run-scoring environment. Moving from the second through sixth rows, runs per 27 outs decline going down the table and the value of home runs, triples, and doubles generally increase going down the table. With one exception: 2019.

- The 2000 season saw about 9% fewer runs (per 27 outs) than the 1930 season. And the win value of a home run was about 6% higher in 2000 than in 1930.
- The 1940 season saw about 9% fewer runs than the 2000 season. And the win value of a home run was 8% higher in 1940 than in 2000.
- The 1968 season saw about 28% fewer runs than the 1940 season. And the win value of a home run was 20% higher in 1968 than in 1940.
- Even in the Deadball Era, the 1918-19 seasons saw about 20% fewer runs than the 1940 season. And the win value of a home run in 1918-19 was 9% higher than in 1940.
- But the 2019 season saw 7% fewer runs than the 2000 season. But the win value of a home run was ***lower*** in 2019 than in 2000. The 2019 season saw 1% more runs than the 1940 season. But the win value of a home run was 9% lower in 2019 than in 1940.

So, what's the deal with 2019?

Here are traditional batting statistics(*) for 2019 and 1940. To adjust for the fact that 2019 had almost twice as many teams who played eight extra games per team than 1940, the numbers are presented per 650 plate appearances. I think that also helps visualize them as these are scaled to a full-time player.

	PA	AB	R	H	2B	3B	HR	RBI	SB	CS	BB	K	SH	HBP	GDP	OBP	SLG
2019	650	581	82	153	30	3	24	78	8	3	55	149	3	7	12	.332	.442
1940	650	583	78	169	28	6	11	73	6	5	56	61	9	2	12	.350	.408

(*) I tweaked the numbers here just a bit. First, I included ROE (reached on error) in the "hits" column. This is because, (a) reaching on an error is a positive event for the batting team, and (b) there were nearly twice as many ROE (per 650 PA) in 1940 than in 2019, so it's a key part of the difference between the two seasons. I then calculated on-base percentage and slugging percentage including ROE (treating them as singles). I also included sacrifice hits and sacrifice flies in the denominator for both OBP and SLG; for the former, because bunting was more common in 1940, for the latter, because sacrifice flies were not an official statistic in 1940, so they're counted as at-bats (and outs) that season. The numbers here also all include pitcher hitting.

As shown earlier, overall run scoring was virtually identical in these two seasons. The difference in runs here is a bit larger than that because I scaled by plate appearances and the average batter in 2019 made a few more outs per 650 plate appearances.

There is a term in baseball which has become more popular recently: "three true outcomes". The three true outcomes are home runs, strikeouts, and walks, the three batting events which do not involve a fielder. There is a general sense that baseball is becoming more and more a game of "three true outcomes". This is literally true in that, if you add up the three true outcomes, they have increased from 128 per 650 PA in 1940 to 228 in 2019. But in a sense, the notion that baseball is becoming more and more a game of "three true outcomes" is only two-thirds true.

Home runs and strikeouts (per plate appearance) have doubled since 1940. But walks are basically unchanged.

So, what does all this mean? Let me repeat the first table from the previous page for only 2019 and 1940.

	R/27	HR	T	D	S/ROE	W/HBP	IW	Out
2019	**5.08**	**0.1287**	**0.0818**	**0.0599**	**0.0340**	**0.0274**	**0.0122**	**-0.0234**
1940	5.01	0.1410	0.0708	0.0578	0.0351	0.0353	0.0075	-0.0233

Let's start with home runs. In run-based systems, a home run is typically valued at 1.4 runs or so. The 0.4 portion of that is based, of course, on the expectation that some home runs will come with runners on base who will score as a result of the home run. But, of course, the number of expected baserunners when home runs are hit is essentially a function of how often batters reach base. In 1940, batters reached base 35.0% of the time; in 2019, only 33.2% of the time. And, in fact, that under-states the relevant difference.

The probability of the previous batter being on base when a batter comes up (and potentially hits a home run) is equal to their times on base excluding home runs divided by their plate appearances. In 1940, that figure was 33.3%. In 2019, it was only 29.5%. Home runs were less valuable in 2019 than in 1940 because they were less likely to drive in additional baserunners.

The other big difference in value between the two years is "W/HBP" – un-intentional walks and hit-by-pitches. The difference here is essentially the other side of the same coin. Walks were less valuable in 2019 because the subsequent batters were less likely to bring those baserunners around to score. Home runs were (much) more common in 2019. But pretty much everything else that advances baserunners was more common in 1940: per 650 PA, 1940 saw 124 "singles" (including ROE) to 97 in 2019, 1940 saw 6 triples to 3 in 2019, 1940 even had a 9-3 lead in sacrifices. The advantages in 2019 were home runs (24-11) and doubles (30-28).

True, the home runs are by far the most productive way to bring home a baserunner. But it's a case of comparing 13 home runs (24 minus 11) and 2 doubles (30 minus 28) against 27 singles and 3 triples (and 6 sacrifices). And that's missing perhaps the biggest advantage of 1940: batters made fewer outs.

Before moving on, let me make one point. My explanation here as to why home runs and walks were less valuable in 2019 than in 1940 is somewhat speculative. I think it's logical and well-reasoned speculation, but it is nevertheless speculation.

But the actual win values that I am presenting here are not speculative. The numbers themselves – the .1287 and .1401 win-values for home runs in 2019 and 1940, respectively – are "facts". I have set up a mathematical system for calculating player wins and player losses (which I explain at least somewhat in Appendix 1). I wrote a program to do these calculations for any game that I give it. I then used the same program to calculate player wins in 1940 as I used to calculate player wins in 2019. I am not arguing that home runs are less valuable in 2019 than in 1940 because I want them to be, and if my explanation here makes no sense to you, that doesn't mean that home runs were not less valuable in 2019 than in 1940. If my explanation here is flawed, it doesn't change the underlying numbers, which are what they are. I think I have given a reasonable explanation of why the numbers are what they are. But the numbers are what they are, not because of my explanation and certainly not because that's what I wanted them to be; the numbers are what they are because that's what the formula said they were.

Outs

Moving on, then, different types of outs also have different win values. Ground balls, fly balls, and especially bunts, can lead to baserunner advancements, but ground balls can also lead to double plays. Net win values for batting out by the type of out are shown in the next table.

	Any Out	K	All BIP	Bunt	GB	FB	LD
1918 - 2019	-0.0232	-0.0215	-0.0237	-0.0168	-0.0249	-0.0224	-0.0273
1930	-0.0233	-0.0198	-0.0238	-0.0163	-0.0245	-0.0222	-0.0338
2000	-0.0244	-0.0224	-0.0250	-0.0192	-0.0249	-0.0244	-0.0325
2019	**-0.0234**	**-0.0230**	**-0.0236**	**-0.0222**	**-0.0262**	**-0.0212**	**-0.0210**
1940	-0.0233	-0.0203	-0.0238	-0.0152	-0.0250	-0.0227	-0.0326
1968	-0.0231	-0.0213	-0.0236	-0.0169	-0.0241	-0.0228	-0.0291
1918-19	-0.0213	-0.0189	-0.0216	-0.0136	-0.0224	-0.0209	-0.0285

A few comments seem appropriate.

First, the win value of an out is remarkably consistent over time and across run-scoring environments. The striking exception here is the Deadball Era, where the net loss value of a batting out appears to be about 0.02 less than in more recent years.

Second, a strikeout is slightly less costly, on average, than an out on a ball in play. This is true in all seven rows of the above table but is **least** true in 2019.

Focusing on the first six rows above, the net win value of batting outs ranged from −0.0231 to −0.0244. The net win value of batting outs on balls in play ranged from −0.0236 to −0.0250. These are truly trivial differences.

But the net win value of a strikeout ranged from −0.0198 (in 1930) to −0.0230 (in 2019). And curiously, the net win value of a strikeout did not vary with the run-scoring environment; it varied with the year. The lowest value was in the earliest season(s) shown: −0.0189 in 1918-19. The next-lowest value was in the next-earliest season: 1930, −0.0198. Next was 1940, −0.0203. Then 1968, −0.0213; 2000, −0.0224; and, finally, in 2019, the net win value of a strikeout was the lowest it's ever been (i.e., the net loss value was the highest it's ever been), −0.0230. Which, ironically, is the exact opposite of the trend in strikeouts, which have generally increased throughout baseball history.

What could explain this?

There are two things that are far more likely to happen on an out-in-play than on a strikeout. An out-in-play is much more likely than a strikeout to lead to baserunner advancement. But an out-in-play is also much more likely than a strikeout to lead to a double (or triple) play. Strikeouts are slightly less costly than other outs because the latter possibility – double plays on outs-in-play – has tended to be slightly more common than the former – baserunner advancement. And even in 2019, strikeouts were still (very) slightly less damaging, albeit by a mere 0.0006 wins.

Note also that we're only looking at outs here; this doesn't account for the possibility that a ball could drop in for a hit or a fielder could make an error. A ball in play is unambiguously more valuable than a strikeout (and always has been) because there is some possibility that the ball in play will ***not*** be an out.

The broad takeaway here is still that a strikeout is, at worst, no worse than any other kind of out. But there may be some (perhaps weak) evidence here that, perhaps, the tide is turning or perhaps has even turned and that it would perhaps be more advantageous for batters to make more effort to cut back on their strikeouts.

Baserunning

Finally, the next table shows net offensive values for stolen bases and caught stealings. The stolen base numbers here include all baserunner advancements on stolen-base attempts, including defensive indifference, balks, and errors on pickoffs. Caught stealing figures include successful pickoffs as well.

			SB Success Rate	
	SB	CS	Actual	Break-Even
1918 - 2019	0.0179	-0.0373	62.9%	67.6%
1930	0.0127	-0.0288	49.9%	69.3%
2000	0.0149	-0.0370	66.9%	71.4%
2019	**0.0155**	**-0.0334**	**68.8%**	**68.3%**
1940	0.0194	-0.0371	51.2%	65.6%
1968	0.0249	-0.0430	62.5%	63.3%
1918-19	0.0166	-0.0313	44.1%	65.3%

The value of a stolen base increases as average runs scored decrease while the cost of a caught stealing also increases as average runs scored decrease. The result is that, while the break-even success

rate for stolen base attempts (the point at which the net value of stolen base attempts would be zero) does vary by run-scoring environment, the range is not terribly large: 63.3% to 71.4% across the seasons shown here.

The much wider range here is in actual stolen base success rates. These have not varied by run-scoring environment so much as they have simply progressively gotten better over time. Stolen base success rates were horrendous in the Deadball Era, 44.1% for the games for which we have play-by-play data in 1918 and 1919.

A decade later, teams were scoring six runs a game as 9 of 16 teams batted over .300. The break-even success rate for stolen bases in that environment is nearly 70%. The actual stolen base rate was almost 20% below that.

The highest success rate in the above table is the 68.8% success rate in 2019, which is also the only season shown there for which the actual success rate was higher than the break-even rate. This latter fact is not unique to 2019 but has a history that I find fascinating.

The table on the next page shows actual vs. break-even stolen base success rates for the 20th century and then for each individual season since 2000.

	SB Success Rate		
	Actual	Break-Even	Difference
1918 - 1999	62.9%	67.6%	-4.7%
2000	66.9%	71.4%	-4.5%
2001	66.0%	68.9%	-2.9%
2002	66.8%	70.5%	-3.6%
2003	66.1%	66.8%	-0.8%
2004	68.4%	69.0%	-0.6%
2005	68.7%	69.5%	-0.8%
2006	68.4%	69.1%	-0.7%
2007	71.4%	67.2%	4.2%
2008	71.0%	68.5%	2.4%
2009	68.6%	67.9%	0.7%
2010	69.8%	68.4%	1.4%
2011	68.3%	66.8%	1.4%
2012	70.2%	67.9%	2.3%
2013	68.7%	65.5%	3.2%
2014	68.9%	66.3%	2.7%
2015	66.3%	66.5%	-0.2%
2016	66.8%	64.7%	2.1%
2017	68.9%	66.7%	2.2%
2018	67.6%	66.9%	0.7%
2019	**68.8%**	**68.3%**	**0.5%**

From 1918 – 1999, the actual stolen base percentage was just under 63 percent. Although, as shown in the preceding table, this average was the result of a long-run trend, which can be seen in the first few years of the 2000s.

In 2000, the actual success rate was 66.9%, which was quite good by historical standards. But 2000 was also the highest-scoring season in MLB history since the 1930s, producing the highest break-even rate in major-league history, 71.4%, a difference of 4.5%, which nearly matched the average difference over the preceding 82 years.

Run-scoring levels dipped somewhat starting in 2003 while actual stolen base success rates remained near their historical peak, resulting in actual success rates from 2003 – 2006 that were still below break-even, but by less than one percent.

And then, the most remarkable thing happened. In 2007, the actual stolen base success rate jumped from 68.4% to 71.4% while the break-even rate fell slightly from 69.1% to 67.2%. The result was that the actual stolen base success rate was higher than the break-even success rate. Interestingly, this would have been true if only one of the two numbers had changed: the actual 2007 rate (71.4%) was higher than the 2006 break-even rate (69.1%), but the actual 2006 rate (68.4%) was also higher than the 2007 break-even rate (67.2%).

So, what happened? Honestly, I'm not sure. But one thing I am sure of. It was no fluke. The actual stolen base success rate has been higher than the break-even success rate in 12 of the 13 seasons since 2007, the one exception being 2015, where the two numbers differed by a mere 0.2% (66.3% actual vs. 66.5% break-even); and, in fact, the actual 2015 number matched the break-even value in 2014 (66.3%) and exceeded the break-even value in 2016 (64.7%).

I don't really have a point here and it's not specific to 2019. But it looks like the folks involved in Major League Baseball (managers, players) just suddenly figured out how to optimize the stolen base as an offensive weapon in 2007. I just thought that was worth sharing.

- **Starting versus Relief Pitching**

Player won-lost records for starting pitchers and relief pitchers are summarized in the table below.

	Breakdown of Pitching Decisions by Role				
			Breakdown of Relievers		
	Starters	**Relievers**	**Non-Save**	**Save**	**Tie**
pre-1950					
Pct. of pWins/pLosses	84.0%	16.0%	7.4%	5.3%	3.3%
eWin Pct.	0.504	0.486	0.484	0.490	0.488
pWin Pct.	0.504	0.477	0.442	0.536	0.460
1950s					
Pct. of pWins/pLosses	79.2%	20.8%	8.9%	7.2%	4.6%
eWin Pct.	0.502	0.495	0.491	0.502	0.501
pWin Pct.	0.502	0.492	0.447	0.560	0.471
1960s					
Pct. of pWins/pLosses	77.1%	22.9%	8.4%	8.9%	5.6%
eWin Pct.	0.500	0.500	0.500	0.506	0.494
pWin Pct.	0.501	0.497	0.453	0.565	0.454
1970s					
Pct. of pWins/pLosses	77.6%	22.4%	7.7%	9.3%	5.4%
eWin Pct.	0.500	0.501	0.499	0.506	0.500
pWin Pct.	0.499	0.502	0.457	0.562	0.463
1980s					
Pct. of pWins/pLosses	74.4%	25.6%	8.1%	11.4%	6.1%
eWin Pct.	0.496	0.508	0.507	0.516	0.502
pWin Pct.	0.495	0.513	0.466	0.576	0.461
1990s					
Pct. of pWins/pLosses	72.3%	27.7%	9.0%	12.4%	6.3%
eWin Pct.	0.498	0.504	0.503	0.512	0.497
pWin Pct.	0.494	0.515	0.474	0.574	0.456
2000s					
Pct. of pWins/pLosses	71.2%	28.8%	9.6%	12.7%	6.5%
eWin Pct.	0.496	0.507	0.507	0.514	0.498
pWin Pct.	0.492	0.520	0.487	0.579	0.455
2010s					
Pct. of pWins/pLosses	69.3%	30.7%	9.9%	13.3%	7.4%
eWin Pct.	0.496	0.508	0.504	0.523	0.502
pWin Pct.	0.490	0.523	0.484	0.589	0.458

The use of relief pitchers has changed dramatically over time. Because of this, the above table breaks the data down by decade (since 1950). For each decade, three sets of numbers are shown: the total percentage of pitching pWins and pLosses (pDecisions) earned by starters and relievers, pitchers' context-neutral winning percentage (eWin Pct.) by role, and pitchers' context-dependent winning percentage (pWin Pct.) by role.

For relief pitchers, in addition to showing totals, the results are broken down three ways based on the game situation when the reliever entered the game. Save situations are defined here as situations in which the winning or tying run is either on base, at bat, or on deck. This excludes saves earned by pitching at least three innings in a win, regardless of situation, or by pitching at least one inning with a 3-run lead. This also includes what would be classified as "holds" instead of saves.

Prior to 1950, starting pitchers earned 84% of total pitching pDecisions and had a better winning percentage than relief pitchers. The winning percentages for both starting and relief pitchers were similar both in and out of context (.504 for starting pitchers both ways; .486 vs. .477 for relievers). Winning percentages differed somewhat for relief pitchers, however, depending on the game situation, with relief pitchers having their highest pWin Pct. in save situations (.536).

The 1950s saw a significant increase in relievers' share of pDecisions – from 16.0% to 20.8%. Relievers' share increased in all three game situations.

The 1960s saw a less dramatic increase in relievers' share of pDecisions – from 20.8% to 22.9% - with the increase coming entirely in save situations and tie games.

The 1970s was the only decade in which relievers' share of pDecisions did not increase. The mix of reliever decisions did change, however, with reliever decisions being much more strongly concentrated in save situations (9.3% of total pitching pDecisions). The 1970s were also the first decade in which starting pitchers had an overall pWin Pct. below .500, although starting and relief pitcher pWin Pcts. continued to be very close to each other in this decade (.499 vs. .502).

Reliever usage increased in the 1980s by the most of any decade since the 1950s – from 22.4% to 25.6%. As in the 1970s, reliever usage also became more concentrated in save situations (11.4% of total pitching pDecisions). The 1980s also saw relief pitcher winning percentages significantly greater than starting pitcher winning percentages for the first time: .513 for relievers vs. .495 for starters (measured using pWins). Reliever winning percentage was also noticeably higher using pWins than using eWins for the first time in the 1980s as teams began to more heavily concentrate their best relief pitchers' work in higher-context situations (save situations and tie games).

Overall relief pitcher usage increased by 1 to 2 percent per decade in the 1990s (27.7%), 2000s (28.8%), and 2010s (30.7%). In the 1990s, this growth was split almost evenly between save situations (up 1.0%) and non-save situations (up 0.9%). Growth in the 2000s was strongest in non-save situations (up 0.6%) with the share of total pitching pDecisions going to relievers in save situations increasing only modestly, from 12.4% in the 1990s to 12.7% in the 2000s.

The gap between starting and relief pitcher winning percentages also grew steadily over this time period as did the gap between the aggregate eWin Pct. and pWin Pct. for relief pitchers as the trend toward using the best pitchers in the highest-context situations continued.

The numbers for the most recent decade are repeated here.

	Breakdown of Pitching Decisions by Role				
			Breakdown of Relievers		
	Starters	**Relievers**	**Non-Save**	**Save**	**Tie**
2010s					
Pct. of pWins/pLosses	69.3%	30.7%	9.9%	13.3%	7.4%
eWin Pct.	0.496	0.508	0.504	0.523	0.502
pWin Pct.	0.490	0.523	0.484	0.589	0.458

Comparisons by decade are generally sufficient to see the broad shifts in relief pitcher usage through most of baseball history. But things have begun to change more quickly in recent years.

The table on the next page, then, decomposes the numbers for the 2010s above by season.

	Breakdown of Pitching Decisions by Role				
			Breakdown of Relievers		
	Starters	**Relievers**	**Non-Save**	**Save**	**Tie**
2010					
Pct. of pWins/pLosses	72.5%	27.5%	8.7%	12.4%	6.4%
eWin Pct.	0.498	0.504	0.499	0.521	0.498
pWin Pct.	0.493	0.520	0.475	0.589	0.448
2011					
Pct. of pWins/pLosses	72.1%	27.9%	8.3%	12.5%	7.2%
eWin Pct.	0.496	0.508	0.506	0.519	0.501
pWin Pct.	0.492	0.521	0.486	0.583	0.454
2012					
Pct. of pWins/pLosses	71.6%	28.4%	9.4%	12.7%	6.4%
eWin Pct.	0.494	0.511	0.508	0.526	0.506
pWin Pct.	0.488	0.531	0.489	0.598	0.460
2013					
Pct. of pWins/pLosses	70.6%	29.4%	8.5%	12.8%	8.0%
eWin Pct.	0.495	0.510	0.510	0.517	0.500
pWin Pct.	0.491	0.522	0.492	0.586	0.450
2014					
Pct. of pWins/pLosses	71.1%	28.9%	8.5%	12.6%	7.8%
eWin Pct.	0.495	0.509	0.506	0.518	0.508
pWin Pct.	0.491	0.523	0.482	0.588	0.461
2015					
Pct. of pWins/pLosses	70.6%	29.4%	9.2%	12.6%	7.6%
eWin Pct.	0.495	0.509	0.506	0.524	0.503
pWin Pct.	0.489	0.527	0.488	0.595	0.462
2016					
Pct. of pWins/pLosses	69.0%	31.0%	10.5%	13.5%	7.0%
eWin Pct.	0.493	0.512	0.507	0.530	0.505
pWin Pct.	0.488	0.527	0.487	0.593	0.461
2017					
Pct. of pWins/pLosses	68.1%	31.9%	11.2%	13.8%	6.9%
eWin Pct.	0.493	0.512	0.508	0.534	0.499
pWin Pct.	0.488	0.526	0.489	0.591	0.456
2018					
Pct. of pWins/pLosses	64.7%	35.3%	11.9%	14.8%	8.6%
eWin Pct.	0.497	0.505	0.500	0.529	0.492
pWin Pct.	0.490	0.519	0.479	0.589	0.455
2019					
Pct. of pWins/pLosses	63.4%	36.6%	13.0%	15.0%	8.5%
eWin Pct.	0.499	0.501	0.494	0.516	0.509
pWin Pct.	0.491	0.516	0.476	0.577	0.468

The results were actually fairly stable for the first half of the decade. From 2010 – 2015, starting pitchers' share of pDecisions ranged between 70.6% and 72.5%. The share for relievers pitching in non-save situations ranged between 8.3% and 9.4%. For save situations, the range was even narrower: 12.4% to 12.8%. And for tie games, the range was 6.4% to 8.0%.

Starting pitcher pWin Pcts. varied over the first six years of the decade between .488 and .493. For relievers, in total, the range was .520 to .531.

Those numbers are all consistent with the numbers for the first decade of this century shown earlier. Relief pitcher usage seemed to have largely stabilized.

And then it didn't.

Here are the results for the last five years, 2015 to 2019.

	Breakdown of Pitching Decisions by Role				
			Breakdown of Relievers		
	Starters	**Relievers**	**Non-Save**	**Save**	**Tie**
2015					
Pct. of pWins/pLosses	70.6%	29.4%	9.2%	12.6%	7.6%
eWin Pct.	0.495	0.509	0.506	0.524	0.503
pWin Pct.	0.489	0.527	0.488	0.595	0.462
2016					
Pct. of pWins/pLosses	69.0%	31.0%	10.5%	13.5%	7.0%
eWin Pct.	0.493	0.512	0.507	0.530	0.505
pWin Pct.	0.488	0.527	0.487	0.593	0.461
2017					
Pct. of pWins/pLosses	68.1%	31.9%	11.2%	13.8%	6.9%
eWin Pct.	0.493	0.512	0.508	0.534	0.499
pWin Pct.	0.488	0.526	0.489	0.591	0.456
2018					
Pct. of pWins/pLosses	64.7%	35.3%	11.9%	14.8%	8.6%
eWin Pct.	0.497	0.505	0.500	0.529	0.492
pWin Pct.	0.490	0.519	0.479	0.589	0.455
2019					
Pct. of pWins/pLosses	63.4%	36.6%	13.0%	15.0%	8.5%
eWin Pct.	0.499	0.501	0.494	0.516	0.509
pWin Pct.	0.491	0.516	0.476	0.577	0.468

Reliever pDecisions increased by a strong 1.6% in 2016 and by an additional 0.9% in 2017. These increases were fairly evenly distributed between non-save and save situations with the share of pDecisions earned by relievers who entered tie games actually down in 2016 and 2017 relative to 2015. Still, these changes, while the largest of the decade to that point, were a mere appetizer for what has happened the last two seasons.

In 2018, relief pitcher pDecisions increased by 3.4%, a larger increase than in any previous ***decade***! The increases in non-save and save situations were large, but largely consistent with 2016 and 2017 –

0.7% and 1.0%, respectively. But the share of pDecisions earned by relief pitchers in tie games increased from 6.9% to 8.6%.

What happened? What happened was the opener. In 2018, the Tampa Rays began to experiment with using a relief pitcher to start some of their games, pitch to the first few batters, and then be relieved by a starting pitcher. The logic of the opener (as best I understand it) is that it can enable a team to get more favorable platoon advantages against a team's better hitters (e.g., start a left-handed "opener" to face tough left-handed batters in the first inning) and to minimize the number of times a starting pitcher has to face the other team's best hitters (e.g., if the "starter" comes in to first face the #5 hitter, he can go a third time through the bottom part of the lineup without having to face the teams' best hitters that many times).

For my purposes here, the starting pitcher is defined as the pitcher who starts the game – i.e., who pitches to the leadoff batter in the first inning; which is kind of the obvious definition. But under that definition, the "opener" – who often pitched only an inning, maybe even less (Sergio Romo "opened" five games for the 2018 Rays, pitching 4.2 innings in those outings) is showing up in the "Starters" column; the guy who followed him is a "relief pitcher". So, for example, you get the somewhat weird situation of the Rays' game of May 27, 2018, where they used three pitchers who pitched 5.2, 3.0, and 0.1 IP, except they did that in the reverse order, so the starting pitcher pitched one-third of an inning and relief pitchers pitched 8-2/3 innings.

Is this ideal? Maybe not. But, on the other hand, in that May 27, 2018 game, the "opener", Sergio Romo, faced 4 batters and 3 of them scored (two hits, one walk). On September 8, 1980, Tigers starter Milt Wilcox only faced 4 batters, all of whom reached base and eventually came around to score. But Wilcox wasn't an "opener" in that game; he was a starting pitcher who just got knocked out of the game really early.

Anyway, I suspect that the introduction of the "opener" in 2018 – on top of the same trends that were operating in 2016 and 2017 – is the reason for the spike in 2018.

All of these trends continued in 2019. Overall reliever usage increased more modestly than in 2018 – but by a still very strong 1.3% of total pDecisions – but the change in the mix of reliever usage was somewhat different. In 2019, the increased reliever usage was concentrated heavily in non-save situations, which increased from 11.9% of pDecisions in 2018 to 13.0% in 2019. But relievers' share of pDecisions reached an all-time high in all three situations: non-save, save, and tie.

To recap, here are the results for 2015 and 2019.

	Breakdown of Pitching Decisions by Role				
			Breakdown of Relievers		
	Starters	**Relievers**	**Non-Save**	**Save**	**Tie**
2015					
Pct. of pWins/pLosses	70.6%	29.4%	9.2%	12.6%	7.6%
eWin Pct.	0.495	0.509	0.506	0.524	0.503
pWin Pct.	0.489	0.527	0.488	0.595	0.462
2019					
Pct. of pWins/pLosses	63.4%	36.6%	13.0%	15.0%	8.5%
eWin Pct.	0.499	0.501	0.494	0.516	0.509
pWin Pct.	0.491	0.516	0.476	0.577	0.468

All five numbers in the first row of 2019 are all-time extremes: the lowest share of pDecisions earned by starting pitchers for any season for which I have calculated Player won-lost records (1918 – 2019) and the highest share of pDecisions earned by relief pitchers overall and within all three game situations.

But that's not all that was interesting about the 2019 numbers. The second row is perhaps the most interesting. Calculated based on eWins and eLosses, the win percentages for starting and relief pitchers were virtually identical (.499 vs. .501) for the first time since the 1970s!

Putting the numbers in context – i.e., shifting to pWins and pLosses – the reliever numbers are still larger than for starters as managers still pitched their better relievers in higher-context situations. But the gap here - .491 vs. 516, a difference of .025 – was 30% lower than the 2015 gap (.038).

Shifting attention to the last three columns, the pWin Pct. of relievers who entered games in save situations was still very high in 2019 (.577) but nevertheless lower than in 2015 (.595) and, in fact, lower than every previous season of the 2010s. Remember, by "save" here, I don't mean "when the closer enters the game". Rather, I mean any situation in which the pitching team leads but the potential tying run is either on base, at bat, or on deck when the reliever enters the game. This does not necessarily indicate, then, that closers were worse in 2019 than in previous seasons (although as a Cubs fan, it often felt like that in 2019). It could mean that the increased use of relief pitchers in general forced managers to use lower-quality pitchers in more important situations earlier in games (i.e., in "hold" situations rather than "save" situations).

The other number I wanted to point out is the pWin Pct. for relievers who enter in non-save situations: .476 in 2019, down from .488 in 2015. In addition to being lower than in 2015, the .476 figure in 2019 was lower than the parallel figure for every season since 2011 (it was .475 in 2010). As teams use more and more relief pitchers, it seems likely that the quality of the last few relievers in each team's bullpen will decline. There are only so many good pitchers out there.

So, can the trends we've seen in the last two to four years continue? On the one hand, not indefinitely. Starting pitchers' share of pDecisions cannot decline two percent per year forever; eventually, it would drop to zero. On the other hand, at two percent per year, it would take 32 more years for starting pitchers' share to fall from its current level (63.4%) to zero. I do, however, wonder if perhaps the tide hasn't shifted just a bit too much and the numbers may re-settle back to 2016-17 levels, if not 2015 levels. I guess we'll see.

Chapter 3: More Noteworthy Players of 2019

- **Fond Farewells in 2019**

I begin by looking back at some players for whom 2019 appears like it could have been their final major-league season. Not all of these players have formally retired, and at least one is in a minor-league camp as I write this. But, at a minimum, all of these players seem to be past their prime.

Curtis Granderson

Career Highlights

Curtis Granderson was one of the best center fielders and one of the most philanthropic men in baseball throughout his 16-year major-league career.

Five highlights of Curtis Granderson's career:

- Curtis Granderson was a three-time All-Star. He received MVP votes three times and won a Silver Slugger award.
- Granderson had two top-10 finishes in MVP voting. His high finish was fourth in 2011 when he batted .262/.364/.552 and led the American League in both runs scored (136) and RBI (119)
- In 2007, Granderson had 38 doubles, 23 triples (which led the American League), and 23 home runs. Granderson is one of seven players to have at least 20 doubles, 20 triples, and 20 home runs in the same season.
- Granderson won the 2015 Lou Gehrig Memorial Award and the 2016 Roberto Clemente Award. The former of these is awarded by the Phi Delta Theta fraternity to a major-league player "who best exhibits the character and integrity of Lou Gehrig". The latter is awarded by Major League Baseball to the player who "best exemplifies the game of baseball, sportsmanship, community involvement, and the individual's contribution to his team." Granderson was named the Marvin Miller Man of the Year by the MLBPA for his off-field work four times, in 2009, 2016, 2018, and 2019.
- As an example of Curtis Granderson's "community involvement", the baseball field at his college alma mater, the University of Illinois in Chicago (UIC) is named Les Miller Field at Curtis Granderson Stadium. Miller was the head baseball coach at UIC for 31 years. The stadium bears Granderson's name in recognition of his $5 million donation to help build the stadium. The stadium also hosts little league and community baseball games. My son had the opportunity to play there once and it's a gorgeous facility with an amazing view of downtown Chicago over the outfield walls.

At What Was Curtis Granderson Elite?

Reading biographies and tributes about Curtis Granderson after he announced his retirement, it seems that Curtis Granderson was most elite at contributing to his community. He has a foundation, Grand Kids Foundation, which raises money to help benefit inner-city education throughout the country.

But Curtis Granderson could play some baseball too. Curtis Granderson had about a 12-year prime, from 2006 – 2017. The next three tables attempt to rank Curtis Granderson's performance over those 12 years.

The first table simply shows the top 10 players in total pWins over these 12 years.

Top 10 Players, 2006 - 2017, ranked by pWins

		pWins	pLoss	pWOPA	pWORL
1	Robinson Cano	246.5	211.9	39.5	61.6
2	Nick Markakis	230.6	226.1	-6.4	15.4
3	Miguel Cabrera	228.5	179.2	39.8	59.5
4	Albert Pujols	222.8	164.6	45.3	65.7
5	Matt Holliday	222.7	183.5	29.2	49.0
6	Ian Kinsler	220.8	202.6	22.9	43.3
7	**Curtis Granderson**	**217.3**	**190.4**	**21.9**	**41.4**
8	Brandon Phillips	215.9	212.0	4.3	24.7
9	Adrian Beltre	214.2	185.2	27.2	46.7
10	Hunter Pence	213.7	196.9	4.7	24.3

The next table attempts to evaluate those pWins against a baseline, that of a replacement player. The top 25 players in pWins over replacement level (pWORL) from 2006 – 2017.

Top 25 Players, 2006 - 2017 (ranked by pWORL)

		pWins	pLoss	pWOPA	pWORL
1	Albert Pujols	222.8	164.6	45.3	65.7
2	Clayton Kershaw	134.5	96.4	47.5	61.9
3	Robinson Cano	246.5	211.9	39.5	61.6
4	Miguel Cabrera	228.5	179.2	39.8	59.5
5	David Ortiz	163.9	118.6	39.8	58.8
6	Zack Greinke	141.7	112.5	35.9	52.6
7	Mike Trout	138.1	95.3	40.9	52.2
8	C.C. Sabathia	145.6	116.9	32.1	50.0
9	Justin Verlander	158.7	132.2	29.7	49.8
10	Matt Holliday	222.7	183.5	29.2	49.0
11	Cole Hamels	150.6	131.0	29.1	47.1
12	Adrian Beltre	214.2	185.2	27.2	46.7
13	Chase Utley	199.1	170.7	28.9	46.5
14	Félix Hernández	149.1	125.4	26.6	45.5
15	Adam Wainwright	129.4	107.8	30.4	45.4
16	Max Scherzer	125.7	102.3	29.2	44.3
17	Carlos Beltran	195.7	163.3	25.5	43.6
18	Joey Votto	173.0	130.8	28.9	43.5
19	Ian Kinsler	220.8	202.6	22.9	43.3
20	Jon Lester	137.6	117.7	24.8	42.0
21	**Curtis Granderson**	**217.3**	**190.4**	**21.9**	**41.4**
22	Alex Rodriguez	148.8	119.6	27.5	41.4
23	Evan Longoria	180.2	153.9	24.8	41.1
24	Dustin Pedroia	191.2	172.9	22.6	40.0
25	Adrian González	212.0	173.4	21.3	39.7

And finally, narrowing in on Curtis Granderson's position, center field: the top 10 players in pWins over positional average (pWOPA) earned as center fielders only over these 12 years.

Top 10 Center Fielders, 2006 - 2017
(Ranked by pWins over Positional Average, CF only)

		pWins	pLoss	pWOPA
1	Mike Trout	120.9	82.1	37.4
2	**Curtis Granderson**	**151.9**	**129.0**	**21.1**
3	Carlos Beltran	86.2	63.7	20.4
4	Andrew McCutchen	176.6	150.5	20.3
5	Matt Kemp	111.9	93.9	14.4
6	Shane Victorino	99.7	86.9	9.7
7	Coco Crisp	119.3	109.3	8.4
8	Adam Jones	190.4	179.3	8.4
9	Josh Hamilton	51.2	43.1	7.4
10	Lorenzo Cain	82.4	74.1	7.0

There's no shame in finding yourself behind Mike Trout in a ranking of baseball players.

Curtis Granderson's Career as Viewed by Player Won-Lost Records

Curtis Granderson

Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
2004	DET	23	9	0.6	0.8	-0.1	-0.2
2005	DET	24	47	5.2	5.1	0.6	0.1
2006	DET	25	159	19.6	16.8	4.4	2.6
2007	DET	26	158	20.5	18.0	4.2	2.4
2008	DET	27	141	17.4	15.5	3.3	1.7
2009	DET	28	160	19.9	19.1	2.4	0.6
2010	NYA	29	136	15.9	13.3	3.8	2.4
2011	NYA	30	156	23.3	17.1	7.9	6.0
2012	NYA	31	160	20.6	16.9	5.1	3.3
2013	NYA	32	61	6.6	5.8	1.4	0.7
2014	NYN	33	155	19.3	19.0	1.1	-0.7
2015	NYN	34	157	21.4	17.9	4.2	2.3
2016	NYN	35	150	18.1	17.4	1.6	-0.2
2017		36	147	14.7	13.5	2.0	0.7
	LAN		*36*	*3.3*	*3.8*	*-0.3*	*-0.6*
	NYN		*111*	*11.4*	*9.7*	*2.3*	*1.3*
2018		37	123	11.6	11.4	1.1	-0.1
	MIL		*19*	*1.4*	*1.5*	*-0.1*	*-0.2*
	TOR		*104*	*10.3*	*9.9*	*1.2*	*0.1*
2019	MIA	38	136	8.1	11.3	-2.5	-3.5
	CAREER (reg. season)		**2,055**	**242.8**	**218.9**	**40.5**	**18.1**
	PostSeason (career)		64	7.0	6.4	1.1	0.5

Curtis Granderson

Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
2004	DET	23	9	0.7	0.8	-0.0	-0.1
2005	DET	24	47	5.3	4.9	0.9	0.5
2006	DET	25	159	18.5	17.9	2.3	0.5
2007	DET	26	158	20.8	17.7	4.8	3.0
2008	DET	27	141	17.5	15.5	3.4	1.8
2009	DET	28	160	19.9	19.1	2.4	0.5
2010	NYA	29	136	15.7	13.5	3.4	2.0
2011	NYA	30	156	22.7	17.7	6.6	4.7
2012	NYA	31	160	20.0	17.5	4.1	2.3
2013	NYA	32	61	6.3	6.1	0.6	-0.0
2014	NYN	33	155	19.2	19.0	0.9	-0.9
2015	NYN	34	157	20.9	18.4	3.4	1.5
2016	NYN	35	150	18.5	17.1	2.3	0.6
2017		36	147	14.6	13.6	1.9	0.5
	LAN		*36*	*3.4*	*3.6*	*-0.0*	*-0.4*
	NYN		*111*	*11.2*	*9.9*	*1.9*	*0.8*
2018		37	123	11.5	11.5	0.8	-0.4
	MIL		*19*	*1.6*	*1.3*	*0.3*	*0.2*
	TOR		*104*	*10.0*	*10.2*	*0.4*	*-0.6*
2019	MIA	38	136	9.1	10.3	-0.5	-1.5
	CAREER (reg. season)		**2,055**	**241.2**	**220.5**	**37.3**	**15.0**
	PostSeason (career)		64	6.9	6.4	0.9	0.3

Félix Hernández

Félix Hernández has not formally retired. In fact, he has a spring training invitation with the Atlanta Braves as I write this. But based on his recent performance, Hernández's major-league career may well be over and his career with the Seattle Mariners seems all but certain to be.

Career Highlights

Félix Hernández was one of the best pitchers in baseball through much of the most recent decade and is one of the best pitchers in the history of the Seattle Mariners.

Five highlights of Félix Hernández's career:

- Félix Hernández has been named to six All-Star teams in his career. He started the 2014 All-Star game for the American League.
- Hernández has received Cy Young votes six times and MVP votes five times. He has finished in the top two in Cy Young voting three times.
- Hernández led the American League in ERA twice, in 2010 with a 2.27 ERA in a league-leading 249.2 innings pitched, and in 2014 with a 2.14 ERA in 236 innings pitched.
- Hernández won the American League Cy Young award in 2010. He finished second in Cy Young voting in 2009 (19-5, 2.49 ERA in 238.2 IP) and 2014 (15-6, 2.14 ERA in 236 IP). He was named the AL Pitcher of the Year by the Sporting News twice, in 2010 and 2014.
- Hernández finished in the top-10 in the American League in strikeouts nine times. He had 200 or more strikeouts in a season six times. His 2,148 strikeouts before his 30th birthday are the fourth-most by any pitcher in major-league history before the age of 30.

At What Was Félix Hernández Elite?

Félix Hernández made his major-league debut at the age of 19. He made his first All-Star team and finished second in Cy Young voting at the age of 23. He won a Cy Young award at the age of 24. He finished second in Cy Young voting a second time at age 28 and won 18 games and made his sixth All-Star team at the age of 29. As mentioned earlier, he has the fourth-most strikeouts of any player in major-league history before his 30th birthday.

Félix Hernández was, in fact, one of the best pitchers in major-league history through age 29. The top 25 pitchers ranked by pWins over replacement level through their age-29 season are shown next.

Top Pitchers Through Age 29
(Ranked by pWORL)

		pWins	pLoss	pWOPA	pWORL
1	Clayton Kershaw	134.5	96.4	47.5	61.9
2	Bob Feller	173.8	139.7	41.5	61.4
3	Wes Ferrell	170.5	136.5	42.5	60.7
4	Roger Clemens	129.6	86.6	44.8	59.1
5	Robin Roberts	170.2	141.0	38.0	57.3
6	Tom Seaver	146.8	114.9	40.3	55.6
7	Hal Newhouser	178.2	152.2	34.5	55.2
8	Jim Palmer	140.0	105.9	39.5	54.5
9	Juan Marichal	134.0	101.2	40.1	54.3
10	Greg Maddux	142.2	112.6	38.5	53.9
11	Pedro Martínez	115.1	78.9	40.8	53.9
12	Dwight Gooden	147.0	119.8	36.8	52.6
13	Dizzy Dean	128.0	95.8	38.3	52.0
14	Don Drysdale	184.2	167.9	26.8	48.1
15	Mel Harder	151.1	128.1	29.9	47.7
16	C.C. Sabathia	134.5	106.5	31.1	47.5
17	Waite Hoyt	147.0	124.1	29.4	46.9
18	Fergie Jenkins	137.6	114.1	31.5	46.5
19	Bert Blyleven	166.3	145.4	27.0	46.3
20	Sandy Koufax	133.9	110.6	30.2	45.6
21	**Félix Hernández**	**139.6**	**114.1**	**28.2**	**45.5**
22	Lefty Gómez	136.2	112.8	29.5	45.0
23	Catfish Hunter	172.9	155.6	24.9	44.8
24	Johan Santana	95.8	65.3	32.7	43.9
25	Bret Saberhagen	113.8	87.8	28.1	41.4

If Félix Hernández has a Hall-of-Fame case – and I think that he does – it's that table.

Félix Hernández's Career as Viewed by Player Won-Lost Records

Félix Hernández
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
2005	SEA	19	12 |	4.9	3.7	1.9	1.3
2006	SEA	20	31 |	11.4	11.9	1.4	-0.2
2007	SEA	21	30 |	12.4	9.4	4.7	3.2
2008	SEA	22	31 |	12.3	10.2	3.8	2.3
2009	SEA	23	34 |	15.4	9.9	7.6	5.9
2010	SEA	24	34 |	14.9	11.6	5.3	3.5
2011	SEA	25	33 |	14.1	12.7	3.5	1.7
2012	SEA	26	33 |	14.5	11.9	4.6	2.8
2013	SEA	27	31 |	12.1	11.2	2.7	1.1
2014	SEA	28	34 |	13.5	9.8	5.6	4.0
2015	SEA	29	31 |	13.9	11.7	4.3	2.5
2016	SEA	30	25 |	9.8	9.8	1.6	0.2
2017	SEA	31	16 |	4.7	5.3	0.2	-0.5
2018	SEA	32	29 |	8.0	11.7	-2.0	-3.4
2019	SEA	33	15 |	4.0	6.0	-1.2	-1.9
	CAREER (reg. season)		**419 |**	**166.0**	**146.8**	**44.2**	**22.7**
	PostSeason (career)		0 |	0.0	0.0	0.0	0.0

Félix Hernández
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
2005	SEA	19	12 |	5.5	3.1	3.1	2.5
2006	SEA	20	31 |	12.1	11.2	2.7	1.1
2007	SEA	21	30 |	11.5	10.3	2.9	1.4
2008	SEA	22	31 |	11.9	10.6	3.4	1.9
2009	SEA	23	34 |	14.4	10.9	5.6	3.9
2010	SEA	24	34 |	15.2	11.3	5.9	4.1
2011	SEA	25	33 |	14.2	12.6	3.7	1.9
2012	SEA	26	33 |	14.4	12.0	4.6	2.8
2013	SEA	27	31 |	13.0	10.3	4.6	3.0
2014	SEA	28	34 |	13.5	9.9	5.4	3.8
2015	SEA	29	31 |	13.5	12.2	3.4	1.6
2016	SEA	30	25 |	9.0	10.6	0.1	-1.3
2017	SEA	31	16 |	4.5	5.5	-0.2	-0.9
2018	SEA	32	29 |	8.1	11.6	-2.0	-3.4
2019	SEA	33	15 |	4.2	5.8	-0.8	-1.5
	CAREER (reg. season)		**419 |**	**164.9**	**148.0**	**42.5**	**20.9**
	PostSeason (career)		0 |	0.0	0.0	0.0	0.0

Ian Kinsler

Career Highlights

Ian Kinsler was the starting second baseman for three American League pennant winners in his 14-year career.

Five highlights of Ian Kinsler's career:

- Ian Kinsler was named to four All-Star teams and received MVP votes four times.
- Kinsler won two Gold Gloves, in 2016 and 2018. He was also named best defensive second baseman in baseball by Wilson in 2014.
- Kinsler scored 100 or more runs six times.
- Kinsler hit 257 home runs. This is the eighth-most in major-league history for a player who played over half of his games at second base. Kinsler stole 243 bases in his career. He is one of six players in major-league history to hit at least 200 home runs and steal at least 200 bases while playing at least half of his career games at second base.
- Kinsler played in 48 postseason games in which he batted .274/.369/.417 in 196 plate appearances. His career regular-season batting line was .269/.337/.440 in 8,299 plate appearances.

At What Was Ian Kinsler Elite?

As measured by Player won-lost records, Ian Kinsler was above average in batting, baserunning, and fielding. All of which combined to make him one of the best second basemen in major-league history.

Top 20 Second Basemen, since 1947
(Ranked by eWins over Positional Average, 2B only)

		pWins	pLoss	pWOPA
1	Joe Morgan	357.4	294.1	70.1
2	Lou Whitaker	290.2	261.2	38.7
3	Bobby Grich	220.4	191.5	36.6
4	Ryne Sandberg	270.4	237.5	35.2
5	Chase Utley	226.2	196.0	30.6
6	Roberto Alomar	304.8	282.6	29.5
7	Jeff Kent	269.7	242.8	29.2
8	Robinson Cano	269.6	248.5	26.8
9	Jackie Robinson	109.4	84.5	26.1
10	Craig Biggio	266.2	242.7	25.9
11	Willie Randolph	265.6	249.5	25.0
12	Dustin Pedroia	188.9	173.2	19.9
13	**Ian Kinsler**	**236.4**	**221.7**	**19.8**
14	Davey Lopes	177.0	161.5	19.4
15	Rod Carew	149.2	135.2	18.3
16	Chuck Knoblauch	180.0	169.6	16.2
17	Robby Thompson	157.7	143.7	15.2
18	José Altuve	158.3	146.3	14.9
19	Bill Doran	168.6	155.3	14.8
20	Ron Hunt	154.3	145.5	13.1

Ian Kinsler's Career as Viewed by Player Won-Lost Records

Ian Kinsler
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
2006	TEX	24	120 |	14.1	14.7	1.2	-0.1
2007	TEX	25	130 |	15.9	15.9	1.9	0.4
2008	TEX	26	121 |	16.5	14.9	3.4	2.0
2009	TEX	27	144 |	19.9	16.7	5.3	3.5
2010	TEX	28	103 |	13.7	11.0	4.2	3.1
2011	TEX	29	155 |	21.7	18.4	5.7	3.8
2012	TEX	30	157 |	20.8	19.8	3.5	1.5
2013	TEX	31	136 |	19.5	15.8	5.7	4.0
2014	DET	32	161 |	23.1	20.5	5.2	3.2
2015	DET	33	154 |	19.6	18.9	3.1	1.2
2016	DET	34	153 |	21.2	18.6	4.8	2.9
2017	DET	35	139 |	14.7	17.4	-0.8	-2.4
2018		36	128 |	14.1	14.1	1.8	0.4
	ANA		*91* |	*10.2*	*10.0*	*0.0*	*0.0*
	BOS		*37* |	*3.9*	*4.1*	*0.0*	*0.0*
2019	SDN	37	87 |	7.2	8.5	-0.4	-1.2
	CAREER (reg. season)		**1,888 |**	**242.1**	**225.1**	**44.6**	**22.1**
	PostSeason (career)		48 |	5.7	5.7	0.6	0.1

Ian Kinsler
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
2006	TEX	24	120 |	14.3	14.6	1.6	0.2
2007	TEX	25	130 |	16.8	15.1	3.5	2.0
2008	TEX	26	121 |	16.8	14.6	4.1	2.6
2009	TEX	27	144 |	19.3	17.3	4.1	2.4
2010	TEX	28	103 |	13.1	11.6	3.0	1.8
2011	TEX	29	155 |	21.9	18.2	6.1	4.1
2012	TEX	30	157 |	20.1	20.5	2.1	0.1
2013	TEX	31	136 |	19.0	16.3	4.9	3.1
2014	DET	32	161 |	22.1	21.4	3.4	1.3
2015	DET	33	154 |	20.2	18.3	4.2	2.4
2016	DET	34	153 |	21.2	18.6	4.7	2.8
2017	DET	35	139 |	15.8	16.3	1.4	-0.2
2018		36	128 |	14.0	14.2	1.5	0.2
	ANA		*91* |	*10.3*	*10.0*	*0.0*	*0.0*
	BOS		*37* |	*3.8*	*4.2*	*0.0*	*0.0*
2019	SDN	37	87 |	7.2	8.4	-0.3	-1.1
	CAREER (reg. season)		**1,888 |**	**241.9**	**225.4**	**44.2**	**21.7**
	PostSeason (career)		48 |	5.8	5.6	0.9	0.3

Brian McCann

Career Highlights

Brian McCann was one of the finest catchers of his generation.

Five highlights of Brian McCann's career:

- Brian McCann was named to seven All-Star teams, won six Silver Sluggers, and received MVP votes twice.
- Brian McCann was named MVP of the 2010 All-Star game. McCann drove in all three National League runs in the game with a bases-loaded three-run double in the top of the seventh inning.
- McCann hit 18 or more home runs for 12 consecutive seasons from 2006 through 2017. McCann is tied with Hall-of-Famers Carlton Fisk and Mike Piazza for the most seasons with at least 18 home runs by a catcher in major-league history.
- McCann was the first Braves player to hit a home run in his first postseason plate appearance when he homered off Roger Clemens on October 6, 2005.
- On August 29, 2010, McCann hit the first walk-off home run reviewed by instant replay. Initially ruled a double, replay confirmed that his home run off Leo Núñez cleared the right-field wall to give the Braves a 7-6 win over the Florida Marlins.

At What Was Brian McCann Elite?

Brian McCann was one of the finest catchers of his generation.

Top Catchers of the 21st Century
(Ranked by pWins over Positional Average, C only)

		pWins	pLoss	pWOPA
1	Jorge Posada	116.5	94.7	28.6
2	Russ Martin	155.7	136.4	25.5
3	**Brian McCann**	**162.7**	**145.0**	**24.0**
4	Joe Mauer	96.3	78.1	23.3
5	Buster Posey	107.8	90.0	20.6
6	Yadier Molina	180.8	168.0	19.0
7	Jason Varitek	99.8	89.2	17.0
8	Mike Napoli	47.4	39.2	10.6
9	Ramon Hernández	109.3	105.7	9.9
10	Victor Martínez	81.1	76.9	9.7

In fact, as measured by pWins over positional average, Brian McCann was one of the finest catchers of the past 100 years.

Top Catchers, since 1918
(Ranked by pWins over Positional Average, C only)

		pWins	pLoss	pWOPA
1	Yogi Berra	202.5	144.7	61.7
2	Bill Dickey	183.1	137.1	51.0
3	Mickey Cochrane	165.8	121.2	48.8
4	Johnny Bench	195.7	151.7	47.3
5	Mike Piazza	194.0	153.0	46.9
6	Carlton Fisk	229.4	193.9	46.2
7	Gabby Hartnett	183.6	143.7	44.7
8	Jorge Posada	153.2	125.5	36.5
9	Gary Carter	220.7	190.1	35.6
10	Roy Campanella	125.6	92.7	35.2
11	Ted Simmons	193.7	169.9	27.9
12	Russ Martin	155.7	136.4	25.5
13	Darrell Porter	145.2	125.7	24.4
14	**Brian McCann**	**162.7**	**145.0**	**24.0**
15	Thurman Munson	140.9	122.2	23.6
16	Joe Mauer	96.3	78.1	23.3
17	Ernie Lombardi	152.1	136.3	20.8
18	Buster Posey	107.8	90.0	20.6
19	Jason Varitek	127.2	116.3	19.2
20	Yadier Molina	180.8	168.0	19.0

And that table might actually **under**-rate McCann a little bit. My Player won-lost records do not attempt to measure catchers' abilities at game-calling or pitch-framing (yet), skills in which McCann tends to rate quite well by those who have attempted to measure such things.

Brian McCann's Career as Viewed by Player Won-Lost Records

Brian McCann

Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
2005	ATL	21	59 |	4.1	4.0	0.6	0.3
2006	ATL	22	130 |	13.6	10.9	4.3	3.1
2007	ATL	23	139 |	13.6	12.7	2.8	1.5
2008	ATL	24	145 |	13.9	14.7	1.1	-0.3
2009	ATL	25	138 |	14.5	12.5	3.8	2.5
2010	ATL	26	143 |	15.5	13.3	4.0	2.6
2011	ATL	27	128 |	13.0	11.3	3.2	2.0
2012	ATL	28	121 |	12.1	11.7	1.8	0.7
2013	ATL	29	102 |	11.2	8.4	4.0	3.0
2014	NYA	30	140 |	13.6	12.6	2.8	1.5
2015	NYA	31	135 |	13.5	11.8	3.7	2.5
2016	NYA	32	130 |	10.9	10.9	1.6	0.5
2017	HOU	33	97 |	9.4	8.9	1.9	1.0
2018	HOU	34	63 |	5.2	4.8	1.2	0.7
2019	ATL	35	85 |	7.3	6.6	1.6	0.9
	CAREER (reg. season)		**1,755 |**	**171.4**	**155.3**	**38.5**	**22.5**
	PostSeason (career)		39 |	2.7	2.9	0.2	-0.0

Brian McCann

Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
2005	ATL	21	59 |	4.0	4.1	0.4	-0.0
2006	ATL	22	130 |	13.8	10.7	4.7	3.5
2007	ATL	23	139 |	12.8	13.6	1.2	-0.1
2008	ATL	24	145 |	15.3	13.3	4.0	2.6
2009	ATL	25	138 |	14.1	12.9	3.1	1.8
2010	ATL	26	143 |	15.5	13.3	4.1	2.7
2011	ATL	27	128 |	12.8	11.5	2.8	1.6
2012	ATL	28	121 |	11.6	12.2	0.9	-0.3
2013	ATL	29	102 |	10.4	9.2	2.5	1.5
2014	NYA	30	140 |	13.3	12.9	2.3	1.0
2015	NYA	31	135 |	13.3	12.0	3.3	2.0
2016	NYA	32	130 |	11.1	10.7	1.9	0.8
2017	HOU	33	97 |	9.1	9.3	1.2	0.3
2018	HOU	34	63 |	4.7	5.2	0.4	-0.1
2019	ATL	35	85 |	6.7	7.2	0.5	-0.3
	CAREER (reg. season)		**1,755 |**	**168.6**	**158.1**	**33.2**	**17.2**
	PostSeason (career)		39 |	2.6	3.1	-0.1	-0.4

C.C. Sabathia

Career Highlights

C.C. Sabathia retires as the winningest pitcher of the 21st century, retiring with 251 traditional pitcher wins. Through 2019, the second-most pitcher wins since 2001 are Justin Verlander's 225.

Five highlights of C.C. Sabathia's career:

- C.C. Sabathia was named to six All-Star teams, received MVP votes five times, and received Cy Young votes five times.
- In 2007, Sabathia won the American League Cy Young award. That season, he had a traditional won-lost record of 19-7 with a 3.21 ERA in a league-leading 241 innings pitched.
- In 2008, Sabathia was traded to the Milwaukee Brewers on July 7, 2008. On the day of the trade, the Brewers had a record of 49-40 and were 0.5 game out of the lead for the wild card. Sabathia went 11-2 with a 1.65 ERA in 130.2 innings in 17 starts with a league-leading 7 complete games and 3 shutouts. The Brewers finished the season with a record of 90-72 winning the wild card by one game.
- In 2009, Sabathia was named ALCS MVP en route to helping the Yankees win the World Series. For the 2009 postseason, Sabathia started five games finishing with a record of 3-1 with a 1.98 ERA in 36.1 innings.
- C.C. Sabathia homered in interleague games on May 21, 2005, and June 21, 2008, making Sabathia the first American League pitcher with two (or more) career home runs since the introduction of the designated hitter rule in 1973. Sabathia hit a third home run on July 21, 2008 as a member of the National League's Milwaukee Brewers.

At What Was C.C. Sabathia Elite?

As noted above, C.C. Sabathia has the most traditional pitcher wins of the twenty-first century (2001 – 2019). Sabathia also has the most pWins of any pitcher this century.

Top Pitchers of the 21st Century
(Ranked by pWins)

		pWins	pLosses	pWOPA	pWORL
1	**C.C. Sabathia**	**219.0**	**187.5**	**36.4**	**64.3**
2	Mark Buehrle	192.6	173.7	23.4	48.5
3	Justin Verlander	189.9	151.7	42.1	65.9
4	Zack Greinke	188.4	157.9	39.5	62.5
5	Tim Hudson	175.3	150.3	35.0	56.0
6	Cole Hamels	171.7	153.8	28.6	49.7
7	Bartolo Colon	170.8	169.7	7.4	30.6
8	John Lackey	169.9	159.3	16.4	38.7
9	Félix Hernández	166.0	146.8	22.7	44.2
10	Jon Lester	163.4	142.6	27.5	48.1

Shifting to pWins over replacement level (pWORL), Sabathia ranks among the top five pitchers and top ten players of the century.

Top Pitchers of the 21st Century
(Ranked by pWORL)

		pWins	pLosses	pWOPA	pWORL
1	Clayton Kershaw	155.9	114.3	52.8	69.8
2	Justin Verlander	189.9	151.7	42.1	65.9
3	Roy Halladay	159.0	118.9	45.8	64.4
4	**C.C. Sabathia**	**219.0**	**187.5**	**36.4**	**64.3**
5	Zack Greinke	188.4	157.9	39.5	62.5
6	Max Scherzer	154.6	121.6	41.0	59.1
7	Tim Hudson	175.3	150.3	35.0	56.0
8	Mariano Rivera	84.7	40.8	41.4	53.4
9	Roy Oswalt	147.3	123.3	33.9	51.1
10	Johan Santana	125.6	94.1	35.8	50.6

Top Players of the 21st Century
(Ranked by pWORL)

		pWins	pLosses	pWOPA	pWORL
1	Albert Pujols	359.8	267.3	71.8	104.3
2	David Ortiz	233.1	169.5	55.4	82.2
3	Alex Rodriguez	261.2	206.5	55.3	79.0
4	Miguel Cabrera	300.3	243.1	43.8	70.5
5	Clayton Kershaw	155.9	114.3	52.8	69.8
6	Mike Trout	178.0	122.3	53.6	68.3
7	Robinson Cano	284.0	248.1	41.3	66.9
8	Justin Verlander	189.9	151.7	42.1	65.9
9	Roy Halladay	159.0	118.9	45.8	64.4
10	**C.C. Sabathia**	**219.0**	**187.5**	**36.4**	**64.3**

C.C. Sabathia's Career as Viewed by Player Won-Lost Records

C.C. Sabathia
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
2001	CLE	20	33	11.6	10.1	3.3	1.8
2002	CLE	21	33	12.7	12.1	2.7	0.9
2003	CLE	22	31	11.1	10.9	2.0	0.4
2004	CLE	23	30	9.9	10.0	1.5	0.1
2005	CLE	24	31	13.1	11.5	3.5	1.8
2006	CLE	25	28	12.2	10.2	3.8	2.3
2007	CLE	26	34	15.1	9.9	7.2	5.5
2008		27	35	17.9	11.1	9.4	7.5
	CLE		*18*	*7.9*	*6.3*	*0.0*	*0.0*
	MIL		*17*	*10.0*	*4.8*	*0.0*	*0.0*
2009	NYA	28	34	14.9	9.9	6.9	5.2
2010	NYA	29	34	16.1	10.9	7.3	5.5
2011	NYA	30	33	15.0	10.9	6.0	4.3
2012	NYA	31	28	10.8	8.7	3.7	2.4
2013	NYA	32	32	12.1	13.2	0.9	-0.8
2014	NYA	33	8	2.7	4.3	-1.0	-1.5
2015	NYA	34	29	8.7	10.7	-0.5	-1.8
2016	NYA	35	30	11.3	10.1	2.9	1.4
2017	NYA	36	27	8.9	6.9	3.3	2.2
2018	NYA	37	29	9.0	7.9	2.5	1.3
2019	NYA	38	23	6.0	8.3	-1.1	-2.1
	CAREER (reg. season)		**562**	**219.0**	**187.5**	**64.3**	**36.4**
	PostSeason (career)		27	9.7	9.5	1.7	0.4

C.C. Sabathia
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
2001	CLE	20	33	11.1	10.6	2.2	0.7
2002	CLE	21	33	13.0	11.8	3.2	1.5
2003	CLE	22	31	11.3	10.7	2.4	0.9
2004	CLE	23	30	10.5	9.5	2.6	1.2
2005	CLE	24	31	12.5	12.0	2.6	0.9
2006	CLE	25	28	12.3	10.0	4.1	2.6
2007	CLE	26	34	15.0	10.0	6.9	5.2
2008		27	35	17.4	11.6	8.4	6.5
	CLE		*18*	*8.0*	*6.2*	*0.0*	*0.0*
	MIL		*17*	*9.4*	*5.4*	*0.0*	*0.0*
2009	NYA	28	34	14.3	10.4	5.9	4.2
2010	NYA	29	34	15.6	11.4	6.3	4.5
2011	NYA	30	33	14.3	11.5	4.9	3.1
2012	NYA	31	28	10.6	8.9	3.3	2.0
2013	NYA	32	32	12.4	12.9	1.5	-0.3
2014	NYA	33	8	2.9	4.2	-0.7	-1.2
2015	NYA	34	29	8.8	10.6	-0.2	-1.6
2016	NYA	35	30	11.4	10.0	3.1	1.6
2017	NYA	36	27	7.8	8.0	1.1	-0.1
2018	NYA	37	29	8.7	8.1	2.0	0.8
2019	NYA	38	23	6.1	8.1	-0.8	-1.9
	CAREER (reg. season)		**562**	**216.1**	**190.4**	**58.6**	**30.7**
	PostSeason (career)		27	9.4	9.8	1.0	-0.3

Ichiro Suzuki

Career Highlights

Ichiro Suzuki was the first Japanese non-pitcher superstar to make it big in Major League Baseball. Five years from now, I expect Ichiro to become the first person born in Japan to be elected to the National Baseball Hall of Fame in this country.

Five highlights of Ichiro Suzuki's career:

- In Ichiro Suzuki's first ten years in MLB, he made ten All-Star teams, won ten Gold Gloves, and had 200 or more hits ten times. Ichiro's ten consecutive 200-hit seasons in a major-league record.
- Suzuki led the American League in batting average twice, in 2001 (.350) and 2004 (.372); in stolen bases once (2001 with 56); and in hits seven times. He scored 100 or more runs in each of his first eight major-league seasons.
- Ichiro's 242 hits in 2001 are the most ever by a player in his first major-league season. His 262 hits in 2004 are a major-league single-season record.
- Ichiro won three MVP awards in Japan, in 1994, 1995, and 1996. He won the American League MVP award in his first season in the U.S., 2001.
- For his career, Ichiro batted .353/.421/.522 in nine seasons in Japan and .311/.355/.402 in nineteen MLB seasons, a combined batting line of .322/.373/.434 with 4,367 hits and 2,078 runs scored. Ichiro batted over .300 for 17 consecutive seasons from 1994 (when he hit .385/.445/.549 as a 20-year-old) through 2010 (when he hit .315/.359/.394 at age 36).

At What Was Ichiro Suzuki Elite?

Ichiro was elite at virtually everything, with the possible exceptions of walks and power. He is 24th in major-league history in hits, 35th in stolen bases, and tied for 3 rd in Gold Gloves by an outfielder, all despite not coming to America until he was 27 years old.

The next table shows the players most similar to Ichiro from age 27 through 36. For Ichiro, these were his first ten major-league seasons.

Most Similar Players to Ichiro Suzuki, age 27 - 36

Player	Games	pWins	pLosses	pWOPA	pWORL
Ichiro Suzuki	**1588**	**222.8**	**202.4**	**11.9**	**32.4**
Ozzie Smith	1493	201.1	175.0	34.1	51.9
Max Carey	1156	177.2	147.6	21.1	37.6
Dave Bancroft	994	147.0	130.0	22.0	36.0
Amos Otis	1294	174.6	139.5	32.0	47.2
Frankie Frisch	1215	166.9	147.5	21.0	37.5
Kiki Cuyler	1142	169.2	135.8	24.5	40.5
Ian Kinsler	1430	188.3	171.1	21.1	38.5
Dave Concepcion	1456	181.1	170.8	19.5	36.5
Paul Waner	1450	222.8	186.2	21.9	43.3
Luis Aparicio	1489	190.2	192.5	6.6	25.7

Seven of the nine players who are eligible for the Hall of Fame have been elected to it (the exceptions are Otis and Concepcion; Kinsler is not yet eligible). Ichiro will surely join Smith, Carey, Bancroft, Frisch, Cuyler, Waner, and Aparicio as soon as he is eligible.

As measured by Player won-lost records, Ichiro's greatest skill was probably as a fielder. The next table shows the top 10 players in net fielding eWins in right field for whom I have calculated Player won-lost records.

Top Fielding RF
(Ranked by Net eWins)

		eWins	eLoss	eWOPA
1	Mel Ott	98.3	86.5	11.8
2	**Ichiro Suzuki**	**81.7**	**71.2**	**10.5**
3	Jesse Barfield	58.9	49.1	9.8
4	Al Kaline	78.9	69.5	9.4
5	Roberto Clemente	105.3	96.0	9.3
6	Carl Furillo	57.7	48.5	9.2
7	Tony Oliva	47.8	40.7	7.1
8	Ellis Valentine	35.1	28.9	6.2
9	Roger Maris	42.9	36.8	6.1
10	Alexis Rios	52.0	46.0	6.0

Ichiro Suzuki's Career as Viewed by Player Won-Lost Records

Ichiro Suzuki
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
2001	SEA	27	157	25.0	18.0	8.1	6.0
2002	SEA	28	157	21.3	20.1	2.2	0.1
2003	SEA	29	159	24.6	18.8	6.9	4.8
2004	SEA	30	161	22.0	21.1	2.1	-0.1
2005	SEA	31	162	21.2	21.4	0.8	-1.3
2006	SEA	32	161	21.8	21.0	2.1	0.0
2007	SEA	33	161	22.2	19.1	4.9	3.0
2008	SEA	34	162	21.9	22.6	0.7	-1.4
2009	SEA	35	146	22.1	18.6	4.6	2.7
2010	SEA	36	162	20.7	21.7	-0.0	-2.0
2011	SEA	37	161	19.1	23.2	-3.2	-5.3
2012		38	162	17.4	19.9	-1.5	-3.3
	NYA		*67*	*6.7*	*7.1*	*-0.0*	*-0.7*
	SEA		*95*	*10.7*	*12.7*	*-1.4*	*-2.6*
2013	NYA	39	150	16.3	15.9	1.3	-0.3
2014	NYA	40	143	10.8	11.0	0.5	-0.6
2015	MIA	41	153	10.7	13.0	-1.8	-3.0
2016	MIA	42	142	9.4	10.6	-0.5	-1.5
2017	MIA	43	136	5.2	5.2	0.6	0.0
2018	SEA	44	15	0.8	1.1	-0.3	-0.4
2019	SEA	45	2	0.1	0.1	0.0	0.0
	CAREER (reg. season)		**2,652**	**312.4**	**302.4**	**27.5**	**-2.4**
	PostSeason (career)		19	2.6	2.8	-0.0	-0.3

Ichiro Suzuki
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
2001	SEA	27	157	23.6	19.4	5.4	3.2
2002	SEA	28	157	21.0	20.4	1.6	-0.5
2003	SEA	29	159	23.7	19.7	5.1	3.0
2004	SEA	30	161	23.8	19.3	5.8	3.7
2005	SEA	31	162	22.5	20.1	3.6	1.6
2006	SEA	32	161	22.5	20.3	3.5	1.5
2007	SEA	33	161	21.7	19.6	3.8	1.8
2008	SEA	34	162	22.9	21.7	2.8	0.7
2009	SEA	35	146	21.4	19.3	3.2	1.3
2010	SEA	36	162	21.6	20.8	2.0	-0.1
2011	SEA	37	161	19.8	22.5	-1.8	-3.9
2012		38	162	18.2	19.0	0.2	-1.6
	NYA		*67*	*6.8*	*7.0*	*0.2*	*-0.4*
	SEA		*95*	*11.4*	*12.0*	*-0.0*	*-1.2*
2013	NYA	39	150	15.9	16.3	0.6	-1.0
2014	NYA	40	143	10.6	11.2	0.2	-0.9
2015	MIA	41	153	10.9	12.8	-1.3	-2.5
2016	MIA	42	142	10.3	9.7	1.3	0.3
2017	MIA	43	136	4.7	5.7	-0.3	-0.9
2018	SEA	44	15	0.8	1.1	-0.3	-0.4
2019	SEA	45	2	0.1	0.1	-0.1	-0.1
	CAREER (reg. season)		**2,652**	**315.9**	**298.9**	**35.4**	**5.4**
	PostSeason (career)		19	2.9	2.6	0.5	0.2

Troy Tulowitzki

Career Highlights

Troy Tulowitzki was one of the top shortstops of his era.

Five highlights of Troy Tulowitzki's career:

- Troy Tulowitzki finished second in Rookie-of-the-Year voting in 2007. That season, Tulowitzki batted .291/.359/.479 with 24 home runs, 99 RBI, and 104 runs scored. He went 4-for-7 and scored 3 runs in the Rockies' dramatic 13-inning, 9-8 win in Game 163 of that season to win the National League wild card.
- Tulowitzki was named to five All-Star teams in his career. He was voted the starting shortstop for the National League three times, in 2011, 2013, and 2014.
- Tulowitzki won two Gold Gloves and two Silver Sluggers, winning both in 2010 and 2011. He received MVP votes six times with three top-10 finishes.
- Offensively, Tulowitzki had a career batting line of .290/.361/.495 with 27 home runs, 94 RBI, and 91 runs scored per 650 plate appearances. Tulowitzki batted over .300 four times. He hit 20 or more home runs seven times, had 90 or more RBI four times, and scored 100 or more runs twice.
- Defensively, Tulowitzki led National League shortstops in range factor (plays per inning) five times. He led NL shortstops in double plays and fielding percentage four times each.

At What Was Troy Tulowitzki Elite?

Troy Tulowitzki was voted the National League's starting shortstop for the All-Star game three times. He won a Gold Glove and a Silver Slugger in the same season twice. So, somebody (actually, lots of somebodies) thought that Troy Tulowitzki was the best shortstop at least in the National League for at least a few seasons.

And Player won-lost records agree. In fact, Player won-lost records think that Troy Tulowitzki was the best shortstop in baseball over the decade over which Tulowitzki was a full-time player.

Top Shortstops, 2007 - 2016
(Ranked by eWins over Positional Average, SS only)

		pWins	pLoss	pWOPA
1	**Troy Tulowitzki**	**161.3**	**141.9**	**23.8**
2	Hanley Ramirez	127.5	109.2	21.3
3	José Reyes	152.1	146.6	10.6
4	Jimmy Rollins	165.8	161.5	8.9
5	Asdrubal Cabrera	126.8	125.2	7.2
6	J.J. Hardy	154.6	154.0	7.0
7	Carlos Correa	35.7	30.7	6.2
8	Jhonny Peralta	132.8	132.6	5.7
9	Yunel Escobar	119.9	119.7	5.2
10	Brandon Crawford	91.2	88.2	5.1

Troy Tulowitzki's Career as Viewed by Player Won-Lost Records

Troy Tulowitzki
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
2006	COL	21	25 |	2.3	2.6	0.0	-0.2
2007	COL	22	155 |	21.5	18.4	5.3	3.5
2008	COL	23	101 |	12.0	12.5	1.0	-0.1
2009	COL	24	151 |	21.6	18.2	5.8	3.9
2010	COL	25	122 |	19.4	14.6	6.9	5.2
2011	COL	26	143 |	20.9	17.9	5.4	3.6
2012	COL	27	47 |	6.2	5.9	1.1	0.5
2013	COL	28	126 |	16.5	14.6	3.8	2.3
2014	COL	29	91 |	11.5	10.7	2.1	1.0
2015		30	128 |	16.4	14.7	3.7	2.2
	COL		*87* |	*10.1*	*10.0*	*0.0*	*0.0*
	TOR		*41* |	*6.3*	*4.8*	*0.0*	*0.0*
2016	TOR	31	131 |	16.2	15.2	3.1	1.6
2017	TOR	32	66 |	6.3	8.0	-0.8	-1.4
2019	NYA	34	5 |	0.2	0.4	-0.1	-0.2
	CAREER (reg. season)		**1,291 |**	**170.9**	**153.9**	**37.3**	**21.8**
	PostSeason (career)		35 |	4.3	4.4	0.5	0.1

Troy Tulowitzki
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
2006	COL	21	25 |	2.2	2.7	-0.1	-0.4
2007	COL	22	155 |	21.3	18.6	4.9	3.1
2008	COL	23	101 |	11.8	12.6	0.8	-0.4
2009	COL	24	151 |	21.6	18.2	5.9	4.0
2010	COL	25	122 |	19.2	14.8	6.5	4.9
2011	COL	26	143 |	21.6	17.3	6.8	4.9
2012	COL	27	47 |	6.3	5.9	1.2	0.6
2013	COL	28	126 |	17.2	14.0	5.0	3.5
2014	COL	29	91 |	12.5	9.7	4.0	2.9
2015		30	128 |	16.1	15.1	3.0	1.5
	COL		*87* |	*10.3*	*9.8*	*0.0*	*0.0*
	TOR		*41* |	*5.8*	*5.2*	*0.0*	*0.0*
2016	TOR	31	131 |	15.7	15.6	2.2	0.7
2017	TOR	32	66 |	6.7	7.6	0.2	-0.5
2019	NYA	34	5 |	0.3	0.3	0.1	0.0
	CAREER (reg. season)		**1,291 |**	**172.5**	**152.3**	**40.4**	**24.9**
	PostSeason (career)		35 |	4.0	4.7	-0.1	-0.5

Ben Zobrist

Career Highlights

Ben Zobrist is the only World Series MVP in Chicago Cubs history.

Five highlights of Ben Zobrist's career:

- Ben Zobrist was named to three All-Star teams. He started the 2016 All-Star game at second base for the National League, joined in the starting lineup by fellow Chicago Cubs at first base, third base, and shortstop.
- Zobrist received MVP votes three times. He finished eighth in AL MVP voting in 2009. That season, Zobrist batted .297/.405/.543 with 27 home runs, 91 RBI, 91 runs scored, and 91 walks.
- Zobrist played in three World Series, for three different franchises (the Rays, Royals, and Cubs). He batted .293/.369/.431 across his three World Series appearances and was named World Series MVP in 2016.
- As of the end of the 2019 season, Ben Zobrist was among the top ten active players in career walks (832), sacrifice flies (67), and fielding percentage at both second base (.987) and in the outfield (.993).
- Zobrist was the "pivot man" for the only 2-6-2 triple play in major-league history. On September 2, 2006, in the top of the first inning, with Adrian Beltre on first base and José López on third base, Raul Ibáñez struck out. Zobrist tagged out Beltre trying to steal second base on the play and then threw home to catch López trying to steal home on the same play.

At What Was Ben Zobrist Elite?

Ben Zobrist's greatest major-league skill was probably his versatility. In his career, he played 911 games as second base, 466 games in right field, 236 games at shortstop, 223 games in left field, 34 games in center field, 27 games at first base, and 8 games at third base, with at least 5 games started at each of those seven positions. He also pitched one (scoreless) inning.

And, in general, he played all of these positions well. For example, his fielding eWin Pct. was over .500 at every fielding position he played except for third base (and pitcher, where he had no fielding decisions).

The next table shows every player for whom I have calculated Player won-lost records who earned at least 50 pWins as an outfielder with a positive pWOPA and at least 50 pWins as a middle infielder (second base and shortstop) with a positive pWOPA. The players are ranked by their career pWORL across all positions.

			Infield			Outfield		
	Player	**pWins**	**pLoss**	**pWOPA**	**pWins**	**pLoss**	**pWOPA**	**pWORL**
1	Robin Yount	195.8	188.3	21.7	157.0	145.0	9.1	66.5
2	Pete Rose	76.1	76.0	2.9	190.3	160.6	19.8	64.3
3	Tony Phillips	103.6	99.5	8.0	91.9	83.0	4.7	40.0
4	**Ben Zobrist**	**124.8**	**117.8**	**9.6**	**73.2**	**63.7**	**7.9**	**37.5**
5	Alfonso Soriano	98.1	93.4	7.6	149.3	134.7	6.8	37.3

It's an extremely short list.

Ben Zobrist's Career as Viewed by Player Won-Lost Records

Ben Zobrist

Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
2006	TBA	25	52 |	4.2	6.3	-1.3	-1.8
2007	TBA	26	31 |	2.0	3.6	-1.2	-1.4
2008	TBA	27	62 |	6.4	5.7	1.5	0.9
2009	TBA	28	152 |	21.6	16.0	7.5	5.7
2010	TBA	29	151 |	18.6	18.7	1.2	-0.5
2011	TBA	30	156 |	21.8	18.1	5.7	3.8
2012	TBA	31	157 |	21.2	18.6	4.7	2.7
2013	TBA	32	157 |	20.5	17.9	4.6	2.8
2014	TBA	33	146 |	18.5	18.0	2.5	0.7
2015		34	126 |	15.9	14.4	3.0	1.5
	KCA		*59* |	*7.5*	*6.9*	*0.0*	*0.0*
	OAK		*67* |	*8.4*	*7.4*	*0.0*	*0.0*
2016	CHN	35	147 |	19.7	16.4	4.6	2.9
2017	CHN	36	128 |	13.2	14.4	-0.1	-1.5
2018	CHN	37	139 |	16.5	13.2	4.3	2.9
2019	CHN	38	47 |	5.1	5.1	0.4	-0.2
CAREER (reg. season)			**1,651 |**	**205.3**	**186.6**	**37.5**	**18.5**
PostSeason (career)			64 |	7.1	7.6	0.2	-0.5

Ben Zobrist

Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
2006	TBA	25	52 |	4.6	5.8	-0.4	-0.9
2007	TBA	26	31 |	2.3	3.4	-0.6	-0.8
2008	TBA	27	62 |	6.4	5.8	1.4	0.8
2009	TBA	28	152 |	21.5	16.0	7.4	5.6
2010	TBA	29	151 |	18.9	18.3	1.9	0.1
2011	TBA	30	156 |	21.6	18.4	5.3	3.4
2012	TBA	31	157 |	21.3	18.5	4.9	3.0
2013	TBA	32	157 |	20.2	18.2	4.1	2.2
2014	TBA	33	146 |	19.3	17.3	4.0	2.2
2015		34	126 |	15.7	14.6	2.5	1.0
	KCA		*59* |	*7.4*	*7.1*	*0.0*	*0.0*
	OAK		*67* |	*8.3*	*7.5*	*0.0*	*0.0*
2016	CHN	35	147 |	19.3	16.8	3.8	2.0
2017	CHN	36	128 |	13.4	14.2	0.3	-1.1
2018	CHN	37	139 |	16.1	13.7	3.4	1.9
2019	CHN	38	47 |	4.8	5.4	-0.2	-0.8
CAREER (reg. season)			**1,651 |**	**205.4**	**186.4**	**37.7**	**18.7**
PostSeason (career)			64 |	7.2	7.5	0.3	-0.4

- **Baseball Hall of Fame Inductees**

Six players were inducted into the National Baseball Hall of Fame on July 21, 2019.

Harold Baines

Career Highlights

Harold Baines was elected to the Hall of Fame by the Today's Game Era Committee.

Five highlights of Harold Baines's career:

- Harold Baines was named to six All-Star teams. He was the starting DH for the American League in 1989.
- Baines was named Designated Hitter of the Year twice, in 1987 and 1988.
- On May 8, 1984, Baines hit a walk-off home run in the bottom of the 25th inning, ending the longest non-tie game in major-league history.
- Baines played 1,643 games as a designated hitter in his career. This was a record at the time of his retirement and is still the second-most DH games in major-league history (behind David Ortiz's 2,029).
- The Chicago White Sox retired Baines's uniform number, 3, on August 20, 1989. Baines played 12 more seasons after that, including parts of four seasons with the White Sox.

At What Was Harold Baines Elite?

Harold Baines was the first player taken in the 1977 amateur draft. With his induction, Baines is the earliest #1 overall draft pick in major-league history to be inducted into the Hall of Fame.

The table on the next page shows all of the players taken first in the draft, since its inception in 1965, ranked by pWins over replacement level (pWORL).

Major League Baseball first introduced the draft in 1965. The first player taken first overall to be elected to the Baseball Hall of Fame was Ken Griffey, Jr. in 2016. He was joined by Chipper Jones in 2018. With his election, Baines is now the earliest #1 overall draft pick to be elected to the Baseball Hall of Fame.

Harold Baines was fairly clearly the most successful first overall draft pick in the first 15 years of the draft and arguably remains one of the five to ten most successful top draft picks to this day.

First Overall Draft Picks
(ranked by career pWORL)

Player	Drafted	Debuted	pWins	pLoss	pWOPA	pWORL
Alex Rodriguez	1993	1994	373.8	298.7	81.2	114.9
Chipper Jones	1990	1993	336.2	257.6	69.6	98.6
Ken Griffey Jr.	1987	1989	342.2	297.2	38.3	69.9
Darryl Strawberry	1980	1983	219.9	163.1	45.7	64.4
David Price	2007	2008	125.9	100.8	27.8	43.5
Bryce Harper	2010	2012	158.0	122.6	28.4	42.0
Harold Baines	**1977**	**1980**	**279.6**	**258.8**	**10.1**	**41.0**
Adrian González	2000	2004	219.3	181.7	19.7	39.0
Joe Mauer	2001	2004	183.5	163.2	20.9	38.5
Rick Monday	1965	1966	210.9	184.3	16.8	36.4
Josh Hamilton	1999	2007	138.0	111.9	23.1	35.5
Stephen Strasburg	2009	2010	97.1	83.0	22.0	33.5
Pat Burrell	1998	2000	195.7	170.5	13.8	32.0
Justin Upton	2005	2007	222.7	201.6	11.2	31.6
Andy Benes	1988	1989	158.3	160.5	8.4	28.4
Gerrit Cole	2011	2013	76.8	62.1	19.1	28.3
Darin Erstad	1995	1996	178.3	164.3	6.8	23.8
Tim Belcher	1983	1987	149.6	151.5	4.0	23.6
Carlos Correa	2012	2015	75.7	63.5	14.6	21.3
Bob Horner	1978	1978	125.6	111.0	8.4	19.7
Phil Nevin	1992	1995	134.1	122.6	6.2	19.2
B.J. Surhoff	1985	1987	233.6	236.3	-4.9	18.4
Floyd Bannister	1976	1977	137.7	140.8	-0.5	17.6
Ben McDonald	1989	1989	73.9	68.6	6.2	15.9
Jeff King	1986	1989	133.0	124.1	2.6	15.2
Jeff Burroughs	1969	1970	184.8	181.2	-5.8	12.8
Shawon Dunston	1982	1985	183.0	195.7	-6.7	11.7
Mike Moore	1981	1982	158.7	172.1	-11.3	10.6
Kris Benson	1996	1999	76.4	83.1	-1.7	8.6
Ron Blomberg	1967	1969	40.9	34.4	4.4	8.5
Tim Foli	1968	1970	177.0	198.4	-9.7	8.5
Dansby Swanson	2015	2016	50.1	47.6	2.9	7.6
Delmon Young	2003	2006	121.4	125.3	-8.4	4.1
Mike Ivie	1970	1971	75.7	73.7	-3.6	4.0
Matt Bush	2004	2016	8.9	7.6	1.0	2.6
Matt Anderson	1997	1998	12.4	13.2	-1.1	1.3
Tim Beckham	2008	2013	45.5	50.3	-3.8	0.9
Luke Hochevar	2006	2007	50.2	57.8	-7.0	0.7
Shawn Abner	1984	1987	22.7	23.8	-2.0	0.3
Al Chambers	1979	1983	3.0	3.9	-1.0	-0.6
Bryan Bullington	2002	2005	3.1	5.2	-2.0	-1.4
Danny Goodwin	1975	1975	13.0	15.8	-3.3	-1.5
David Clyde	1973	1973	22.8	28.1	-5.1	-1.9
Dave W. Roberts	1972	1972	52.6	60.2	-8.6	-3.1
Paul Wilson	1994	1996	52.1	66.4	-11.6	-3.6
Bill Almon	1974	1974	94.8	113.1	-15.3	-5.1

For missing draft years, player never played in the major leagues. Danny Goodwin was the first pick in two drafts: 1971 out of high school by the Chicago White Sox and again in 1975, out of college, by the California Angels.

Harold Baines's Career as Viewed by Player Won-Lost Records

Harold Baines

Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
1980	CHA	21	141	14.2	15.7	-0.8	-2.3
1981	CHA	22	81	9.2	8.0	1.7	0.8
1982	CHA	23	161	21.3	19.5	2.9	0.9
1983	CHA	24	156	21.6	18.5	4.3	2.4
1984	CHA	25	147	21.5	18.6	3.8	1.9
1985	CHA	26	160	20.9	22.2	-0.0	-2.1
1986	CHA	27	145	19.1	18.4	1.7	-0.1
1987	CHA	28	132	11.9	10.2	2.7	1.3
1988	CHA	29	158	13.3	13.1	1.4	-0.2
1989		30	146	13.4	13.1	1.7	0.1
	CHA		*96*	*8.9*	*9.2*	*0.0*	*0.0*
	TEX		*50*	*4.6*	*3.9*	*0.0*	*0.0*
1990		31	135	11.9	9.4	3.7	2.3
	OAK		*32*	*3.2*	*2.1*	*0.0*	*0.0*
	TEX		*103*	*8.7*	*7.3*	*0.0*	*0.0*
1991	OAK	32	141	12.3	10.9	2.4	0.9
1992	OAK	33	140	12.7	10.3	3.4	2.0
1993	BAL	34	117	10.5	8.7	2.7	1.4
1994	BAL	35	94	7.2	7.1	0.8	-0.2
1995	BAL	36	127	10.1	9.3	1.7	0.4
1996	CHA	37	143	12.9	11.2	2.7	1.1
1997		38	136	10.9	9.2	2.8	1.4
	BAL		*44*	*3.0*	*2.6*	*0.0*	*0.0*
	CHA		*92*	*7.9*	*6.6*	*0.0*	*0.0*
1998	BAL	39	103	7.3	7.1	1.0	-0.0
1999		40	134	11.2	10.0	2.3	0.8
	BAL		*106*	*9.2*	*8.0*	*0.0*	*0.0*
	CLE		*28*	*2.0*	*2.0*	*0.0*	*0.0*
2000		41	95	5.1	6.3	-0.7	-1.5
	BAL		*71*	*4.0*	*4.8*	*0.0*	*0.0*
	CHA		*24*	*1.0*	*1.5*	*0.0*	*0.0*
2001	CHA	42	30	1.0	2.0	-0.9	-1.1
	CAREER (reg. season)		**2,822**	**279.6**	**258.8**	**41.0**	**10.1**
	PostSeason (career)		31	2.7	2.4	0.6	0.3

Harold Baines

Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
1980	CHA	21	141 |	14.3	15.5	-0.5	-1.9
1981	CHA	22	81 |	9.1	8.1	1.5	0.7
1982	CHA	23	161 |	20.8	20.0	1.8	-0.1
1983	CHA	24	156 |	20.1	19.9	1.4	-0.5
1984	CHA	25	147 |	21.3	18.8	3.5	1.6
1985	CHA	26	160 |	21.8	21.4	1.6	-0.5
1986	CHA	27	145 |	19.6	18.0	2.5	0.8
1987	CHA	28	132 |	11.5	10.6	2.0	0.6
1988	CHA	29	158 |	13.6	12.8	2.0	0.3
1989		30	146 |	14.3	12.2	3.4	1.8
	CHA		*96* |	*10.0*	*8.0*	*0.0*	*0.0*
	TEX		*50* |	*4.2*	*4.2*	*0.0*	*0.0*
1990		31	135 |	11.4	10.0	2.4	1.1
	OAK		*32* |	*2.9*	*2.5*	*0.0*	*0.0*
	TEX		*103* |	*8.4*	*7.5*	*0.0*	*0.0*
1991	OAK	32	141 |	12.7	10.4	3.4	1.9
1992	OAK	33	140 |	11.7	11.3	1.4	-0.0
1993	BAL	34	117 |	10.6	8.7	2.9	1.6
1994	BAL	35	94 |	7.4	6.9	1.2	0.2
1995	BAL	36	127 |	10.6	8.8	2.6	1.2
1996	CHA	37	143 |	13.0	11.1	3.0	1.4
1997		38	136 |	10.5	9.6	2.0	0.6
	BAL		*44* |	*2.9*	*2.8*	*0.0*	*0.0*
	CHA		*92* |	*7.6*	*6.8*	*0.0*	*0.0*
1998	BAL	39	103 |	7.5	6.9	1.2	0.2
1999		40	134 |	11.4	9.7	2.8	1.4
	BAL		*106* |	*9.6*	*7.5*	*0.0*	*0.0*
	CLE		*28* |	*1.8*	*2.2*	*0.0*	*0.0*
2000		41	95 |	5.3	6.1	-0.3	-1.1
	BAL		*71* |	*4.2*	*4.6*	*0.0*	*0.0*
	CHA		*24* |	*1.1*	*1.4*	*0.0*	*0.0*
2001	CHA	42	30 |	1.0	2.1	-1.0	-1.2
	CAREER (reg. season)		**2,822 |**	**279.5**	**258.9**	**40.8**	**10.0**
	PostSeason (career)		31 |	2.7	2.4	0.5	0.2

Roy Halladay

Career Highlights

Roy Halladay was elected to the Hall of Fame in his first year of eligibility with 85.4% of the vote.

Five highlights of Roy Halladay's career:

- Roy Halladay is one of six pitchers to win a Cy Young award in each league, winning in 2003 in the American League and in 2011 in the National League.
- In Roy Halladay's first career postseason appearance, on October 6, 2010, he threw a no-hitter against the Cincinnati Reds. This was the second postseason no-hitter in major-league history. The only Red to reach base in the game was Jay Bruce, who walked with two out in the fifth inning.
- A little more than four months before Halladay's postseason no-hitter, he threw the 18th perfect game in major-league history on May 29, 2010. Halladay was the first pitcher in major-league history to throw a perfect game and a second no-hitter in the same season.
- Roy Halladay had five seasons in his career in which he had at least 200 strikeouts and fewer than 40 walks (2003, 2008 - 2011). No other pitcher in major-league history has had more than three such seasons.
- On Opening Day, 2018 (March 29), the Toronto Blue Jays posthumously retired Roy Halladay's uniform number, 32. The Philadelphia Phillies have announced plans to retire Hallday's number 34 on May 29, 2020, the tenth anniversary of his perfect game.

At What Was Roy Halladay Elite?

From 2002 through 2011, Roy Halladay was named to eight All-Star teams and received Cy Young votes seven times, winning the award twice. He also finished second in Cy Young voting twice, third once, and fifth twice. He finished in the top ten in MVP voting twice.

Over this ten-year period, Halladay won 20 or more games three times. He led his league in wins twice (his two Cy Young seasons), in complete games seven times, in innings pitched four times, and in strikeout-to-walk ratio five times.

Player won-lost records agree. Roy Halladay was the best pitcher – and one of the three best players – in baseball over the decade from 2002 – 2011.

Top Players, 2002 - 2011
(Ranked by pWORL)

		pWins	pLoss	pWOPA	pWORL
1	Albert Pujols	219.1	142.5	62.6	80.0
2	Alex Rodriguez	202.2	155.7	47.2	64.6
3	**Roy Halladay**	**140.1**	**98.7**	**45.9**	**61.9**
4	David Ortiz	155.2	110.1	39.3	56.8
5	Derek Jeter	200.0	173.7	34.9	52.9
6	Lance Berkman	191.8	145.2	34.4	50.7
7	C.C. Sabathia	137.9	107.4	33.6	50.2
8	Johan Santana	115.7	82.7	36.7	50.1
9	Chase Utley	152.1	117.6	35.0	47.8
10	Vladimir Guerrero	184.9	147.9	29.3	47.1

Roy Halladay's Career as Viewed by Player Won-Lost Records

Roy Halladay
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
1998	TOR	21	2 |	1.2	0.4	0.9	0.8
1999	TOR	22	36 |	7.2	8.5	-0.0	-1.2
2000	TOR	23	19 |	3.6	5.5	-1.2	-1.9
2001	TOR	24	17 |	5.4	3.5	2.7	2.1
2002	TOR	25	34 |	15.6	10.1	7.6	5.8
2003	TOR	26	36 |	17.7	11.6	8.4	6.4
2004	TOR	27	21 |	8.3	7.1	2.4	1.4
2005	TOR	28	19 |	10.4	5.6	6.1	5.0
2006	TOR	29	32 |	12.0	8.7	5.1	3.7
2007	TOR	30	31 |	12.7	9.6	4.9	3.3
2008	TOR	31	34 |	16.4	11.5	7.1	5.2
2009	TOR	32	32 |	14.5	11.6	4.9	3.1
2010	PHI	33	33 |	16.9	12.4	7.5	5.7
2011	PHI	34	32 |	15.6	10.5	7.9	6.3
2012	PHI	35	25 |	9.6	9.9	1.6	0.4
2013	PHI	36	13 |	3.9	6.8	-1.9	-2.6
	CAREER (reg. season)		**416 |**	**170.9**	**133.3**	**64.0**	**43.5**
	PostSeason (career)		5 |	2.5	1.8	1.2	0.9

Roy Halladay
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
1998	TOR	21	2 |	0.9	0.7	0.3	0.2
1999	TOR	22	36 |	7.6	8.1	0.7	-0.5
2000	TOR	23	19 |	3.5	5.6	-1.4	-2.0
2001	TOR	24	17 |	5.5	3.5	2.7	2.1
2002	TOR	25	34 |	15.4	10.3	7.3	5.5
2003	TOR	26	36 |	17.4	11.9	7.9	5.9
2004	TOR	27	21 |	8.7	6.6	3.4	2.3
2005	TOR	28	19 |	9.7	6.3	4.6	3.5
2006	TOR	29	32 |	11.6	9.1	4.1	2.7
2007	TOR	30	31 |	12.5	9.9	4.4	2.8
2008	TOR	31	34 |	16.6	11.3	7.6	5.6
2009	TOR	32	32 |	15.0	11.1	6.0	4.2
2010	PHI	33	33 |	15.7	13.7	5.2	3.4
2011	PHI	34	32 |	15.2	10.9	7.2	5.6
2012	PHI	35	25 |	9.8	9.7	2.1	0.9
2013	PHI	36	13 |	3.9	6.8	-1.8	-2.5
	CAREER (reg. season)		**416 |**	**168.8**	**135.3**	**60.2**	**39.7**
	PostSeason (career)		5 |	2.5	1.8	1.1	0.9

Edgar Martínez

Career Highlights

Edgar Martínez was elected to the Hall of Fame by the BBWAA in his tenth (and final) year of eligibility with 85.4% of the vote.

Five highlights of Edgar Martínez's career:

- Edgar Martínez was named to seven All-Star teams and received MVP votes five times. He was named Designated Hitter of the Year five times.

- Martínez won two batting titles, in 1992 (.343) and 1995 (.356). He led the American League in on-base percentage three times, in doubles twice, and in runs scored and RBI once apiece. For his career, Martínez batted .312/.418/.515. Baseball-Reference.com lists Martínez's on-base percentage as the 22nd best in major-league history and his OPS of .933 is ranked 32nd in major-league history.

- The Seattle Mariners have made the postseason four times in their 42-year history. Edgar Martínez played in every postseason game in Mariners history.

- Edgar Martínez had three hits in four of the first five postseason games in Seattle Mariners history in 1995. These included three doubles and two home runs and produced nine RBI. The last of these hits was a 2-run double in the bottom of the eleventh inning in Game 5 to give the Mariners a 6-5 victory and a series win over the New York Yankees, 3 games to 2.

- As measured by Player won-lost records, Edgar Martínez is the most valuable player in Seattle Mariners history. He has the most career pWins over either positional average (pWOPA) or replacement level (pWORL) as a Seattle Mariner, with 36.7 and 60.0, respectively. Martínez's number 11 was retired by the Mariners on August 12, 2017.

At What Was Edgar Martínez Elite?

The MLB award given out annually for best designated hitter – which Martínez won five times - was re-named the Edgar Martínez Award in his honor in 2004.

The next table, then, shows the top 10 designated hitters in major-league history, as measured by Player won-lost records. The players here are ranked by career eWins over positional average (eWOPA) earned only as a DH.

Top 10 Designated Hitters in MLB History
(Ranked by eWins over Positional Average, DH only)

		eWins	eLoss	eWOPA
1	David Ortiz	210.9	167.5	35.4
2	**Edgar Martínez**	**138.9**	**106.3**	**26.8**
3	Frank Thomas	126.6	101.7	19.2
4	Jim Thome	80.9	61.7	16.0
5	Travis Hafner	99.4	80.4	15.1
6	Edwin Encarnación	71.5	56.6	12.8
7	Nelson Cruz	69.1	55.4	11.6
8	Brian Downing	75.3	62.0	10.8
9	Chili Davis	106.2	92.4	8.8
10	Hal McRae	125.2	112.7	8.3

Edgar Martínez ranked #1 at the time of his retirement (and when the Edgar Martínez Award was named in his honor).

There is a school of thought that designated hitters are not “real” baseball players or, at least, they are not “complete” baseball players because designated hitters do not play the field. And that is true, of course: Edgar Martínez earned very few fielding wins once he became a full-time DH in 1995.

The next table evaluates this concern by looking at the top 20 players of the 1990s, as measured by eWins over replacement level (eWORL).

Top Players, 1990 - 1999, ranked by eWORL

		eWins	eLoss	eWOPA	eWORL
1	Barry Bonds	230.8	157.4	63.5	82.4
2	Greg Maddux	162.3	114.5	60.2	77.3
3	Roger Clemens	142.1	99.1	44.8	61.2
4	Ken Griffey Jr.	195.5	153.4	40.0	57.1
5	Kevin Brown	140.1	107.1	38.9	55.0
6	Randy Johnson	141.2	110.0	34.8	51.7
7	Frank Thomas	162.0	117.6	36.0	51.1
8	Barry Larkin	182.4	154.3	34.2	50.5
9	Mark McGwire	148.7	101.4	38.1	50.4
10	Jeff Bagwell	175.2	125.5	35.0	49.6
11	Craig Biggio	205.4	178.5	28.9	47.6
12	**Edgar Martínez**	**144.7**	**110.6**	**30.8**	**45.8**
13	Roberto Alomar	193.1	170.6	27.9	45.5
14	John Smoltz	143.5	124.9	28.5	45.2
15	Tom Glavine	139.9	122.6	27.6	43.8
16	Mike Piazza	119.5	89.8	33.0	43.3
17	Larry Walker	177.1	140.7	25.8	41.3
18	David Cone	126.6	105.9	25.2	40.5
19	Mike Mussina	108.8	83.2	27.1	40.3
20	Kevin Appier	116.9	92.3	26.0	40.3

By this measure, Edgar Martínez was one of the most valuable players of the 1990s, even given his lack of fielding wins over the second half of the decade.

Edgar Martínez's Career as Viewed by Player Won-Lost Records

Edgar Martínez
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
1987	SEA	24	13 |	1.0	1.0	0.1	-0.0
1988	SEA	25	14 |	0.8	0.8	0.0	-0.1
1989	SEA	26	65 |	4.9	4.2	1.1	0.7
1990	SEA	27	144 |	16.7	15.7	2.6	1.1
1991	SEA	28	150 |	20.4	16.6	5.5	3.7
1992	SEA	29	135 |	18.0	15.5	4.0	2.3
1993	SEA	30	42 |	3.3	3.5	0.2	-0.2
1994	SEA	31	89 |	9.2	9.0	1.1	0.1
1995	SEA	32	145 |	16.5	9.3	8.3	6.6
1996	SEA	33	139 |	16.5	10.4	7.3	5.5
1997	SEA	34	155 |	14.1	11.2	3.9	2.2
1998	SEA	35	154 |	15.1	11.8	4.4	2.6
1999	SEA	36	142 |	13.2	9.5	4.7	3.1
2000	SEA	37	153 |	15.6	11.1	5.7	3.8
2001	SEA	38	132 |	14.5	8.4	7.2	5.6
2002	SEA	39	97 |	9.0	6.5	3.2	2.2
2003	SEA	40	145 |	14.4	12.1	3.5	1.7
2004	SEA	41	141 |	8.7	12.5	-2.8	-4.2
	CAREER (reg. season)		**2,055 |**	**211.7**	**169.2**	**60.0**	**36.7**
	PostSeason (career)		34 |	3.3	3.1	0.4	-0.0

Edgar Martínez
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
1987	SEA	24	13 |	1.1	0.9	0.3	0.2
1988	SEA	25	14 |	0.8	0.8	0.1	-0.0
1989	SEA	26	65 |	4.3	4.9	-0.1	-0.6
1990	SEA	27	144 |	17.1	15.3	3.4	1.8
1991	SEA	28	150 |	20.4	16.7	5.4	3.7
1992	SEA	29	135 |	19.0	14.5	5.8	4.1
1993	SEA	30	42 |	3.4	3.4	0.4	-0.0
1994	SEA	31	89 |	9.9	8.2	2.6	1.7
1995	SEA	32	145 |	15.8	10.0	7.0	5.2
1996	SEA	33	139 |	16.0	10.9	6.2	4.4
1997	SEA	34	155 |	14.8	10.5	5.4	3.7
1998	SEA	35	154 |	15.3	11.5	5.1	3.3
1999	SEA	36	142 |	13.1	9.6	4.5	3.0
2000	SEA	37	153 |	15.8	11.0	6.1	4.2
2001	SEA	38	132 |	13.3	9.6	4.8	3.2
2002	SEA	39	97 |	8.7	6.8	2.7	1.6
2003	SEA	40	145 |	14.5	12.1	3.2	1.4
2004	SEA	41	141 |	10.0	11.2	-0.0	-1.5
	CAREER (reg. season)		**2,055 |**	**213.0**	**167.8**	**62.7**	**39.3**
	PostSeason (career)		34 |	3.5	2.9	0.8	0.4

Mike Mussina

Career Highlights

Mike Mussina was elected to the Hall of Fame in his sixth year of eligibility with 76.7% of the vote.

Five highlights of Mike Mussina's career:

- Mike Mussina was named to five All-Star teams in his career, received Cy Young votes eight times, and won six Gold Gloves.
- Mike Mussina had 11 or more traditional pitcher wins for 17 consecutive seasons from 1992 through 2008. He was the first pitcher in American League history with at least 10 wins in 17 consecutive seasons.
- Mussina was the starting and winning pitcher on September 6, 1995, when Cal Ripken played in his 2,131st consecutive game, breaking Lou Gehrig's record.
- Mussina took a no-hitter into the eighth inning four times in his career, the most by any pitcher in major-league history who never threw a no-hitter. Mussina retired the first 25 Cleveland Indians on May 30, 1997, before Sandy Alomar, Jr. singled with one out in the ninth inning. Mussina retired the first 26 Boston Red Sox on September 2, 2001, before Carl Everett singled with two out in the ninth inning.
- Mussina earned 20 traditional pitcher wins in a season only once, winning his 20th game of 2008 in the final start of his career. At age 39, Mussina was the oldest pitcher to win 20 games for the first time in his career. He was the first pitcher since Sandy Koufax to win 20 or more games in his final major-league season.

At What Was Mike Mussina Elite?

I think that, even after having been inducted into the Hall of Fame, a lot of people don't fully appreciate how good a pitcher Mike Mussina was. The next two tables show what Player won-lost records think of Mussina's career.

The first table shows the top 25 pitchers for whom I have calculated Player won-lost records, ranked by pWins over replacement level (pWORL). The numbers reflect a player's total pWins across all positions; players are included here if the majority of their wins were accumulated as a pitcher.

Top Pitchers, since 1918, ranked by pWORL

		pWins	pLoss	pWOPA	pWORL
1	Roger Clemens	317.0	228.7	94.7	131.4
2	Greg Maddux	327.2	271.9	77.9	115.1
3	Lefty Grove	265.7	191.0	85.3	114.5
4	Warren Spahn	351.6	294.9	74.7	114.3
5	Randy Johnson	279.9	221.0	69.8	102.9
6	Tom Seaver	307.0	258.4	65.1	98.6
7	Jim Palmer	241.6	186.3	61.8	88.6
8	Bob Gibson	262.5	218.7	58.5	87.2
9	Steve Carlton	335.8	305.9	49.3	87.0
10	Pedro Martínez	192.5	137.8	62.6	84.8
11	Juan Marichal	231.0	188.2	56.8	81.8
12	Nolan Ryan	354.9	329.7	38.3	81.3
13	**Mike Mussina**	**223.2**	**174.0**	**52.7**	**80.1**
14	Mariano Rivera	125.9	61.1	61.4	79.0
15	Tom Glavine	277.9	249.8	45.9	78.7
16	John Smoltz	238.9	201.8	49.6	78.3
17	Whitey Ford	209.4	164.7	55.0	78.1
18	Bob Feller	255.2	219.1	47.7	77.7
19	Fergie Jenkins	285.2	252.6	44.4	77.4
20	Gaylord Perry	315.7	290.5	38.1	76.0
21	Don Sutton	318.8	297.5	38.5	75.6
22	Robin Roberts	294.6	271.4	40.0	74.6
23	Early Wynn	307.3	285.7	38.3	74.4
24	Kevin Brown	204.3	164.6	48.2	72.3
25	Tommy John	276.3	248.7	38.4	71.0

That's a century of major-league pitching.

The next table shows the top ten players (pitchers and non-pitchers) in pWORL during Mike Mussina's career (1991 – 2008).

Top Players, 1991 - 2008, ranked by pWORL

		pWins	pLoss	pWOPA	pWORL
1	Barry Bonds	364.1	228.1	121.6	150.7
2	Greg Maddux	267.0	214.6	71.0	101.1
3	Randy Johnson	248.3	189.5	68.9	97.8
4	Alex Rodriguez	289.0	228.2	68.0	93.2
5	Roger Clemens	219.6	163.4	61.1	87.1
6	Chipper Jones	279.1	209.9	61.4	85.3
7	Manny Ramirez	297.6	228.0	58.3	84.9
8	Pedro Martínez	188.7	135.0	61.4	83.1
9	**Mike Mussina**	**223.2**	**174.0**	**52.7**	**80.1**
10	Derek Jeter	274.3	232.5	54.2	78.8

Yes, the time period here is cherry-picked. But it's an 18-year period!

Mike Mussina was really good for a really long time and is a well-deserving Hall of Famer.

Mike Mussina's Career as Viewed by Player Won-Lost Records

Mike Mussina
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
1991	BAL	22	12 |	4.5	4.8	0.4	-0.3
1992	BAL	23	32 |	13.9	9.2	6.5	4.9
1993	BAL	24	25 |	10.2	8.1	3.4	2.1
1994	BAL	25	24 |	12.1	7.5	6.1	4.7
1995	BAL	26	32 |	15.9	10.4	7.6	5.8
1996	BAL	27	36 |	15.2	12.4	4.9	3.0
1997	BAL	28	33 |	13.2	9.8	5.1	3.5
1998	BAL	29	29 |	12.7	10.2	4.3	2.7
1999	BAL	30	31 |	13.5	8.3	6.8	5.4
2000	BAL	31	34 |	14.3	12.2	4.2	2.4
2001	NYA	32	34 |	15.5	10.8	6.8	5.0
2002	NYA	33	33 |	13.1	10.8	4.2	2.5
2003	NYA	34	31 |	14.1	10.5	5.6	3.8
2004	NYA	35	27 |	11.0	9.2	3.4	2.0
2005	NYA	36	30 |	11.0	10.7	2.0	0.5
2006	NYA	37	32 |	10.7	8.5	3.7	2.4
2007	NYA	38	28 |	8.6	9.3	0.6	-0.6
2008	NYA	39	34 |	13.6	11.1	4.5	2.8
	CAREER (reg. season)		**537 |**	**223.2**	**174.0**	**80.1**	**52.7**
	PostSeason (career)		23 |	7.5	7.0	1.7	0.7

Mike Mussina
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
1991	BAL	22	12 |	5.2	4.2	1.7	1.1
1992	BAL	23	32 |	13.2	10.0	5.0	3.4
1993	BAL	24	25 |	9.9	8.4	2.7	1.5
1994	BAL	25	24 |	11.3	8.2	4.6	3.2
1995	BAL	26	32 |	15.6	10.7	6.9	5.1
1996	BAL	27	36 |	14.9	12.8	4.2	2.3
1997	BAL	28	33 |	13.0	10.1	4.7	3.1
1998	BAL	29	29 |	12.9	9.9	4.8	3.2
1999	BAL	30	31 |	12.9	8.9	5.7	4.2
2000	BAL	31	34 |	14.9	11.6	5.4	3.6
2001	NYA	32	34 |	15.5	10.7	7.0	5.1
2002	NYA	33	33 |	12.8	11.2	3.5	1.8
2003	NYA	34	31 |	14.7	9.9	6.7	5.0
2004	NYA	35	27 |	10.6	9.6	2.5	1.1
2005	NYA	36	30 |	11.1	10.5	2.3	0.8
2006	NYA	37	32 |	11.0	8.3	4.2	2.9
2007	NYA	38	28 |	9.3	8.7	2.0	0.7
2008	NYA	39	34 |	13.5	11.2	4.3	2.6
	CAREER (reg. season)		**537 |**	**222.1**	**175.1**	**78.2**	**50.8**
	PostSeason (career)		23 |	8.2	6.3	3.1	2.1

Mariano Rivera

Career Highlights

Mariano Rivera was the first player ever elected unanimously to the Hall of Fame by the BBWAA in a regular election.

Five highlights of Mariano Rivera's career:

- Mariano Rivera was named to 13 All-Star teams. He received Cy Young votes six times, with a high finish of second in 2005 (he also had three third-place finishes). He received MVP votes nine times, with a high finish of ninth in 2004 and 2005.
- Rivera was named MVP of the 1999 World Series (1-0, 2 saves, 0.00 ERA in 4.2 IP), the 2003 ALCS (1-0, 2 saves, 1.13 ERA in 8 IP), and the 2013 All-Star game (in which he pitched a perfect eighth inning).
- Rivera holds the major-league records for most career saves in the regular season (652), divisional series (18), league championship series (13), and World Series (11).
- Mariano Rivera had 11 seasons in his career in which he earned at least 30 saves and had an ERA below 2.00. No other player has had more than five such seasons in major-league history.
- Mariano Rivera was the last player in major-league history to regularly wear uniform number 42, which equals the (record) number of postseason saves that Rivera had in his career.

At What Was Mariano Rivera Elite?

Mariano Rivera is the greatest relief pitcher in major-league history. And Rivera's case as greatest relief pitcher of all time is probably stronger than the case of any other player at any other position.

As merely one example of Mariano Rivera's dominance of relief pitcher lists, the next table shows the top 10 relief pitchers for whom I have calculated Player won-lost records, measured by pWins over positional average (pWOPA), earned exclusively as a relief pitcher.

Top Relief Pitchers, 1918 - 2019
(Ranked by pWins over Positional Average, RP only)

		pWins	pLoss	pWOPA
1	**Mariano Rivera**	**122.5**	**57.4**	**61.6**
2	Trevor Hoffman	100.1	62.2	35.1
3	Lee Smith	109.1	75.9	30.0
4	Frankie Rodriguez	89.7	57.5	29.4
5	Joe Nathan	68.4	37.3	29.0
6	Rich Gossage	115.4	83.5	28.6
7	Jonathan Papelbon	66.4	36.2	28.1
8	Billy Wagner	79.3	50.6	26.5
9	Craig Kimbrel	56.7	28.5	26.4
10	John Franco	103.1	74.4	25.8

Rivera doesn't quite equal the numbers two and three players on the list combined, but Trevor Hoffman, who is #2 on the list, is as close to Rivera as he is to #119 on the list (Glen Perkins, 8.5 career pWOPA as a relief pitcher).

To the extent that there could be an argument against Mariano Rivera as a Hall-of-Famer – and obviously none of the 425 Hall-of-Fame voters last year thought there was one – it would have to at least start with the argument that "relief pitcher" is not a "position"; "pitcher" is the position.

So, how does Mariano Rivera stack up among all pitchers?

The next table shows the top 25 pitchers since 1947, ranked by pWins over positional average. The numbers here reflect a player's total pWins across all positions; players are included in this table if the majority of their wins were accumulated as a pitcher.

Top 25 Pitchers, since 1947, ranked by pWOPA

		pWins	pLoss	pWOPA	pWORL
1	Roger Clemens	317.0	228.7	94.7	131.4
2	Greg Maddux	327.2	271.9	77.9	115.1
3	Warren Spahn	343.3	287.4	73.4	112.0
4	Randy Johnson	279.9	221.0	69.8	102.9
5	Tom Seaver	307.0	258.4	65.1	98.6
6	Pedro Martínez	192.5	137.8	62.6	84.8
7	Jim Palmer	241.6	186.3	61.8	88.6
8	**Mariano Rivera**	**125.9**	**61.1**	**61.4**	**79.0**
9	Bob Gibson	262.5	218.7	58.5	87.2
10	Juan Marichal	231.0	188.2	56.8	81.8
11	Whitey Ford	209.4	164.7	55.0	78.1
12	Clayton Kershaw	155.9	114.3	52.8	69.8
13	Mike Mussina	223.2	174.0	52.7	80.1
14	John Smoltz	238.9	201.8	49.6	78.3
15	Steve Carlton	335.8	305.9	49.3	87.0
16	Kevin Brown	204.3	164.6	48.2	72.3
17	Tom Glavine	277.9	249.8	45.9	78.7
18	Curt Schilling	205.8	172.8	44.5	69.2
19	Fergie Jenkins	285.2	252.6	44.4	77.4
20	Roy Halladay	170.9	133.3	43.5	64.0
21	Justin Verlander	189.9	151.7	42.1	65.9
22	Dennis Eckersley	215.6	175.3	41.9	69.8
23	Bob Lemon	192.2	159.5	41.4	63.2
24	Andy Pettitte	210.7	175.2	41.1	67.4
25	Max Scherzer	154.6	121.6	41.0	59.1

That table doesn't exactly under-cut Mariano Rivera's Hall-of-Fame case.

Mariano Rivera's Career as Viewed by Player Won-Lost Records

Mariano Rivera
Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
1995	NYA	25	19 |	4.0	4.2	0.4	-0.2
1996	NYA	26	61 |	9.6	3.6	7.0	5.8
1997	NYA	27	66 |	7.2	4.1	4.0	3.0
1998	NYA	28	54 |	6.4	1.9	5.0	4.3
1999	NYA	29	66 |	6.5	2.5	4.7	3.9
2000	NYA	30	66 |	7.5	4.0	4.4	3.3
2001	NYA	31	71 |	8.8	4.0	5.7	4.5
2002	NYA	32	45 |	4.9	3.9	1.8	0.9
2003	NYA	33	64 |	7.1	2.9	5.0	4.0
2004	NYA	34	74 |	9.4	3.6	6.7	5.5
2005	NYA	35	71 |	7.6	3.2	5.2	4.2
2006	NYA	36	63 |	7.0	3.4	4.4	3.4
2007	NYA	37	67 |	6.4	3.9	3.4	2.4
2008	NYA	38	64 |	7.5	2.6	5.7	4.7
2009	NYA	39	66 |	6.2	3.1	3.8	2.9
2010	NYA	40	61 |	5.6	3.3	2.9	2.1
2011	NYA	41	64 |	6.2	2.8	4.1	3.3
2012	NYA	42	9 |	0.7	0.3	0.5	0.4
2013	NYA	43	64 |	7.1	3.7	4.2	3.1
	CAREER (reg. season)		**1,115 |**	**125.9**	**61.1**	**79.0**	**61.4**
	PostSeason (career)		96 |	12.9	3.5	10.7	9.1

Mariano Rivera
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
1995	NYA	25	19 |	4.0	4.3	0.4	-0.2
1996	NYA	26	61 |	9.1	4.2	5.9	4.7
1997	NYA	27	66 |	6.5	4.8	2.6	1.6
1998	NYA	28	54 |	5.1	3.2	2.5	1.7
1999	NYA	29	66 |	6.2	2.9	4.0	3.1
2000	NYA	30	66 |	7.3	4.3	4.0	2.9
2001	NYA	31	71 |	8.2	4.6	4.5	3.3
2002	NYA	32	45 |	4.7	4.1	1.5	0.7
2003	NYA	33	64 |	6.3	3.7	3.6	2.6
2004	NYA	34	74 |	8.7	4.3	5.3	4.1
2005	NYA	35	71 |	7.3	3.6	4.5	3.5
2006	NYA	36	63 |	6.8	3.6	3.9	2.9
2007	NYA	37	67 |	6.1	4.2	2.8	1.8
2008	NYA	38	64 |	6.8	3.3	4.3	3.4
2009	NYA	39	66 |	5.7	3.7	2.7	1.8
2010	NYA	40	61 |	5.5	3.4	2.8	2.0
2011	NYA	41	64 |	5.6	3.4	3.0	2.1
2012	NYA	42	9 |	0.7	0.3	0.5	0.4
2013	NYA	43	64 |	6.4	4.4	2.8	1.7
	CAREER (reg. season)		**1,115 |**	**116.9**	**70.2**	**61.4**	**43.8**
	PostSeason (career)		96 |	11.4	5.0	7.7	6.2

Lee Smith

Career Highlights

Lee Smith was elected to the Hall of Fame by the Today's Game Era Committee.

Five highlights of Lee Smith's career:

- Lee Smith was named to the All-Star team seven times. He received Cy Young votes four times, finishing as high as second in 1991 (6-3, 47 saves, 2.34 ERA, 67 K, only 13 walks, in 73 IP). Smith received MVP votes four times.
- Smith won three Rolaids Relief Man of the Year awards in his career: in 1991, 1992, and 1994.
- Lee Smith set the major-league record for career saves with his 358th career save on April 13, 1993. He retired in 1997 with 478 career saves and held the career record for 13 years until Trevor Hoffman passed him on September 24, 2006.
- Lee Smith still holds the Chicago Cubs franchise record for career saves with 180. He also had the most saves in the history of the St. Louis Cardinals when he retired (160).
- Lee Smith hit the only home run of his major-league career on July 5, 1982. This game was also the last of Lee Smith's six career games started.

At What Was Lee Smith Elite?

Lee Smith was, obviously, an elite relief pitcher.

The 2019 Hall-of-Fame class was interesting. The BBWAA elected two players who were so dominant at their (relatively young) positions that Major League Baseball actually named awards after them: the best DH in baseball gets the Edgar Martínez Award and the best relief pitcher in the American League gets the Mariano Rivera Award.

Meanwhile, the Today's Game Era Committee elected two players who played the same positions as Martínez and Rivera, but who retired just as Martínez's and Rivera's careers were getting started.

Especially in the case of Mariano Rivera – undisputed greatest relief pitcher in major-league history, first unanimous BBWAA selection – it casts a bit of an unfair shadow on the guys who came before, who it's not necessarily fair to judge against an ideal that didn't exist yet when they played.

The next two tables try to get around that by focusing only on major-league history through Lee Smith's final season, 1997. The next two tables show the top 10 relief pitchers through 1997, ranked by pWins over positional average (pWOPA) and pWins over replacement level (pWORL). The numbers here reflect a player's total pWins across all positions; players are included in this table if the majority of their wins were accumulated as a relief pitcher.

Top Relief Pitchers, 1918 - 1997, ranked by pWOPA

		pWins	pLoss	pWOPA	pWORL
1	**Lee Smith**	**110.5**	**78.8**	**28.8**	**45.6**
2	Rich Gossage	130.4	102.2	25.5	45.3
3	Dan Quisenberry	71.1	44.4	24.6	34.8
4	Bruce Sutter	87.7	62.7	22.9	36.1
5	Tom Henke	67.0	42.4	22.6	32.5
6	Hoyt Wilhelm	137.7	116.6	22.5	44.0
7	John Franco	80.3	56.3	21.8	34.2
8	Rollie Fingers	120.4	97.8	21.4	39.9
9	Doug Jones	71.0	48.3	20.8	31.5
10	Dave Righetti	99.0	78.9	18.9	33.2

Top Relief Pitchers, 1918 - 1997, ranked by pWORL

		pWins	pLoss	pWOPA	pWORL
1	**Lee Smith**	**110.5**	**78.8**	**28.8**	**45.6**
2	Rich Gossage	130.4	102.2	25.5	45.3
3	Hoyt Wilhelm	137.7	116.6	22.5	44.0
4	Rollie Fingers	120.4	97.8	21.4	39.9
5	Bruce Sutter	87.7	62.7	22.9	36.1
6	Lindy McDaniel	121.2	106.0	16.1	34.9
7	Dan Quisenberry	71.1	44.4	24.6	34.8
8	John Franco	80.3	56.3	21.8	34.2
9	Dave Righetti	99.0	78.9	18.9	33.2
10	Tom Henke	67.0	42.4	22.6	32.5

There are five pitchers in the National Baseball Hall of Fame whose careers ended in or before 1997 and were primarily relief pitchers (Dennis Eckersley technically fails on both counts: he pitched in 1998 and he earned more player wins as a starting pitcher than as a relief pitcher). Remarkably, the five Hall-of-Fame relief pitchers of this era are the first five players listed in the second table above.

If you accept the number of relief pitchers in the Hall of Fame from this time period, Player won-lost records suggest that the voters chose the right ones – although it took 20 years and a Veterans' Committee to elect the guy at the top of the list.

Lee Smith's Career as Viewed by Player Won-Lost Records

Lee Smith

Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
1980	CHN	22	18 |	0.6	0.7	-0.0	-0.1
1981	CHN	23	40 |	3.1	4.3	-0.6	-1.2
1982	CHN	24	72 |	6.1	5.6	1.5	0.6
1983	CHN	25	66 |	8.6	5.2	4.4	3.2
1984	CHN	26	69 |	9.6	5.5	5.2	3.8
1985	CHN	27	65 |	10.1	6.1	5.2	3.7
1986	CHN	28	66 |	8.7	7.0	2.9	1.5
1987	CHN	29	62 |	7.4	5.7	2.6	1.4
1988	BOS	30	64 |	7.7	5.4	3.2	2.0
1989	BOS	31	64 |	5.1	3.7	2.0	1.2
1990		32	64 |	8.8	4.2	5.4	4.3
	BOS		*11* |	*1.4*	*0.7*	*0.0*	*0.0*
	SLN		*53* |	*7.4*	*3.5*	*0.0*	*0.0*
1991	SLN	33	67 |	8.5	5.3	4.2	2.9
1992	SLN	34	70 |	7.1	4.7	3.3	2.2
1993		35	62 |	5.9	4.6	2.1	1.2
	NYA		*8* |	*0.5*	*0.2*	*0.0*	*0.0*
	SLN		*54* |	*5.4*	*4.5*	*0.0*	*0.0*
1994	BAL	36	41 |	4.7	3.2	2.0	1.3
1995	CAL	37	52 |	5.4	3.8	2.3	1.5
1996		38	54 |	2.4	2.5	0.3	-0.2
	CAL		*11* |	*0.3*	*0.3*	*0.0*	*0.0*
	CIN		*43* |	*2.1*	*2.2*	*0.0*	*0.0*
1997	MON	39	25 |	0.8	1.2	-0.3	-0.5
CAREER (reg. season)			**1,021 |**	**110.5**	**78.8**	**45.6**	**28.8**
PostSeason (career)			4 |	0.3	0.9	-0.5	-0.6

Lee Smith

Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
1980	CHN	22	18 |	0.7	0.6	0.3	0.2
1981	CHN	23	40 |	3.6	3.8	0.4	-0.2
1982	CHN	24	72 |	6.2	5.5	1.7	0.8
1983	CHN	25	66 |	8.1	5.7	3.5	2.2
1984	CHN	26	69 |	7.8	7.3	1.9	0.6
1985	CHN	27	65 |	8.7	7.5	2.6	1.1
1986	CHN	28	66 |	8.3	7.3	2.3	1.0
1987	CHN	29	62 |	7.2	5.9	2.2	1.0
1988	BOS	30	64 |	7.0	6.1	1.8	0.7
1989	BOS	31	64 |	4.8	4.0	1.4	0.6
1990		32	64 |	7.2	5.8	2.6	1.4
	BOS		*11* |	*1.2*	*0.9*	*0.0*	*0.0*
	SLN		*53* |	*6.0*	*4.9*	*0.0*	*0.0*
1991	SLN	33	67 |	7.4	6.4	2.0	0.8
1992	SLN	34	70 |	6.2	5.6	1.4	0.4
1993		35	62 |	5.2	5.4	0.8	-0.2
	NYA		*8* |	*0.5*	*0.2*	*0.0*	*0.0*
	SLN		*54* |	*4.8*	*5.1*	*0.0*	*0.0*
1994	BAL	36	41 |	4.2	3.7	1.3	0.5
1995	CAL	37	52 |	5.1	4.2	1.6	0.8
1996		38	54 |	2.5	2.4	0.5	0.0
	CAL		*11* |	*0.3*	*0.2*	*0.0*	*0.0*
	CIN		*43* |	*2.1*	*2.2*	*0.0*	*0.0*
1997	MON	39	25 |	0.9	1.1	0.0	-0.2
CAREER (reg. season)			**1,021 |**	**101.1**	**88.2**	**28.3**	**11.4**
PostSeason (career)			4 |	0.5	0.8	-0.2	-0.3

Chapter 4: A Look Back in Baseball History

- **40 Years Ago: J.R. Richard Breaks Through**

J.R. Richard was one of the greatest baseball tragedies of my youth.

Richard was the second player taken in the 1969 draft (behind Jeff Burroughs). Two years later, he struck out 15 batters in a complete-game victory in his major-league debut.

Richard was huge - 6'8", listed in various places at 225 to 240 pounds - and threw perhaps the hardest fastball in baseball. For his first few years in the majors, he didn't always know exactly where that hellacious fastball was going: he led the National League in walks three times and in wild pitches three times. But he started to put things together at age 26 in 1976, when he won 20 games with an ERA below 3 and his first of four consecutive 200-K seasons.

Finally, in 1979, J.R. Richard broke through in a huge way. As measured by Player won-lost records, he was the best pitcher in major-league baseball: 18-13, MLB-leading 2.71 ERA and 313 strikeouts in 292.1 innings (tied for second in MLB).

In the first half of 1980, he was even better. At the All-Star break, he was 10-4, 1.96 ERA, with 115 K in 110.1 IP. He started the All-Star game and pitched two scoreless innings (with 3 strikeouts).

He took himself out of his first start after the All-Star game after 3.1 innings (in which he struck out 4 batters while allowing only 2 baserunners - oh, and hit a double in his only plate appearance against Hall-of-Famer Phil Niekro), "complaining of nausea and numbness in his arm". He went on the disabled list. Soon thereafter, the Astros - and much of the media - became critical of Richard. Unfortunately, the critics were shut up and made to look foolish on July 30, 1980, when J.R. Richard suffered a stroke that nearly killed him and ended his major-league pitching career. The tragedy of J.R. Richard's life continued: at one point, he ended up homeless. From what I can tell, Richard is doing better now, but still, what a tragic, haunting story. So much potential, lost in an instant.

The first two tables below present J.R. Richard's career as measured by Player won-lost records, in and out of context.

J.R. Richard
Basic Player Won-Lost Records as measured by pWins (tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
1971	HOU	21	4 |	1.4	1.5	0.1	-0.0
1972	HOU	22	4 |	0.1	0.2	-0.1	-0.1
1973	HOU	23	16 |	4.1	3.9	0.9	0.4
1974	HOU	24	15 |	2.8	3.7	-0.3	-0.7
1975	HOU	25	33 |	12.4	14.6	0.2	-1.4
1976	HOU	26	39 |	18.5	18.8	2.9	0.7
1977	HOU	27	36 |	17.7	15.6	5.0	3.0
1978	HOU	28	37 |	16.8	15.7	4.1	2.2
1979	HOU	29	38 |	20.1	16.0	7.6	5.5
1980	HOU	30	17 |	9.3	5.6	5.1	4.3
	CAREER (reg. season)		**239 |**	**103.3**	**95.6**	**25.5**	**13.8**
	PostSeason (career)		0 |	0.0	0.0	0.0	0.0

J.R. Richard
Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
1971	HOU	21	4 |	1.3	1.6	0.1	-0.1
1972	HOU	22	4 |	0.1	0.3	-0.1	-0.1
1973	HOU	23	16 |	3.9	4.1	0.5	0.0
1974	HOU	24	15 |	3.0	3.5	0.1	-0.3
1975	HOU	25	33 |	12.9	14.1	1.1	-0.5
1976	HOU	26	39 |	18.1	19.1	2.3	0.1
1977	HOU	27	36 |	18.4	14.9	6.5	4.5
1978	HOU	28	37 |	16.9	15.6	4.3	2.4
1979	HOU	29	38 |	19.7	16.4	7.0	4.9
1980	HOU	30	17 |	9.1	5.8	4.8	4.0
	CAREER (reg. season)		**239 |**	**103.5**	**95.4**	**26.5**	**14.9**
	PostSeason (career)		0 |	0.0	0.0	0.0	0.0

Most Similar Players: Ages 26-29

J.R. Richard was pretty wild as a young pitcher. It took him several years to get his walks under control and to really start to be able to take advantage of his phenomenal stuff.

As I noted above and as is, I think, fairly evident in the above table, Richard took a clear step forward in his age-26 season, 1976 - from below-average to above-average. He then took another step forward, to very good, if not great, the next season, in 1977.

J. R. Richard's last full season was at age 29, in 1979, when, as I noted above, he was arguably the best pitcher in the major leagues.

The next table shows the 10 pitchers most similar to J.R. Richard from age 26 through age 29, as measured by Player won-lost records. For the comparisons here, I do not include batting, baserunning, or fielding, and do not include context (i.e., pWins).

Most Similar Players to J.R. Richard in Value
Ages 26 through 29

Player	Games	eWins	eLosses	eWOPA	eWORL
J.R. Richard	**150**	**73.1**	**66.1**	**11.9**	**20.1**
Catfish Hunter	156	67.3	56.2	12.7	20.4
Frank Viola	144	64.8	55.4	10.6	18.5
Bob Gibson	166	72.5	63.6	13.6	21.9
Mike Garcia	164	65.9	57.4	12.5	20.3
Nolan Ryan	150	76.0	65.5	11.0	20.1
Hal Newhouser	152	70.6	62.2	12.5	20.7
Bob Feller	143	69.3	61.7	12.0	20.5
Gaylord Perry	166	63.3	57.2	10.9	18.3
Tommy Bridges	144	71.3	63.7	11.7	20.0
Steve Carlton	157	77.3	71.5	11.1	19.8

Seven of the ten pitchers listed there are in the Hall of Fame.

As impressive as that is, this list is also instructive in terms of projecting Richard to have maintained perfect health for the next decade but for the stroke. The player most similar to Richard over these seasons, Catfish Hunter, had five consecutive 20-win seasons at ages 25 – 29 and won 17 games at age 30, but he only pitched 62 more games after that in his career, which ended at age 33.

A near-fatal stroke is certainly more tragic than a bum elbow, but even in the alternate universe where J.R. Richard avoids the former, there's no guarantee he could have avoided the latter.

The Player Richard Most Reminds Me Of: Randy Johnson

The pitchers in the previous table are good statistical matches for J.R. Richard's performance from ages 26 through 29. But they aren't necessarily a good match for the shape of Richard's career to that point. Most of these pitchers peaked at age 26 or 27 - as is pretty common for pitchers (and players) in general. Richard's career, on the other hand, was continually improving throughout these years. His best full season came in his last full season at age 29. And he was even better than that in his age-30 season before his stroke. The player who most reminds me of J.R. Richard is Randy Johnson. Like Richard, Johnson was huge - even taller than Richard (6'10") - threw exceptionally hard and spent most of his 20's figuring out how to control his stuff. Like Richard, Johnson led his lead in walks three times (at ages 26, 27, and 28, in Johnson's case).

It turns out that Johnson doesn't make the list of pitchers most similar to Richard at ages 26 - 29 because Johnson wasn't actually as good as Richard at those ages. Generally, Johnson was about one year behind Richard in his development. Richard pitched 200 innings for the first time at age 25; Johnson pitched 200 innings for the first time at age 26. Richard struck out 200 batters for the first time at age 26; Johnson struck out 200 batters for the first time at age 27. Richard hit 300 strikeouts at age 28; Johnson struck out 300 batters for the first time at age 29. Richard had his huge breakout season at age 30. Randy Johnson won his first Cy Young Award at age 31, going 18-2, 2.48, with 294 K's in 214.1 IP in the strike-shortened 1995 season.

Of course, that's where the comparisons end, because that's where J.R. Richard's career ended.

The next table compares J.R. Richard's and Randy Johnson's careers, as measured by Player won-lost records.

	J.R. Richard				Randy Johnson			
Age	**pWins**	**pLoss**	**pWOPA**	**pWORL**	**pWins**	**pLoss**	**pWOPA**	**pWORL**
21	1.4	1.5	-0.0	0.1				
22	0.1	0.2	-0.1	-0.1				
23	4.1	3.9	0.4	0.9				
24	2.8	3.7	-0.7	-0.3	1.7	1.3	0.5	0.7
25	12.4	14.6	-1.4	0.2	9.2	10.3	-0.9	0.4
26	18.5	18.8	0.7	2.9	13.9	12.5	1.6	3.3
27	17.7	15.6	3.0	5.0	14.0	13.4	0.8	2.6
28	16.8	15.7	2.2	4.1	14.3	15.6	-1.2	0.8
29	20.1	16.0	5.5	7.6	17.0	11.3	5.8	7.7
30	9.3	5.6	4.3	5.1	11.2	8.4	2.9	4.3
31					16.4	7.4	9.2	10.9
32					3.9	2.6	1.4	1.9
33					16.1	8.4	7.9	9.6
34					18.0	14.9	3.7	5.9
35					18.4	13.3	6.5	8.4
36					18.5	13.4	6.2	8.2
37					19.0	12.5	7.7	9.8
38					19.0	10.5	9.5	11.5
39					7.5	7.6	0.3	1.3
40					15.2	12.6	4.0	5.7
41					13.1	11.0	2.5	4.2
42					11.6	11.4	0.5	2.1
43					3.5	3.5	0.3	0.8
44					11.5	11.5	0.9	2.3
45					6.8	7.5	-0.2	0.7
CAREER	103.3	95.6	13.8	25.5	279.9	221.0	69.8	102.9
AGES 25 - 30	94.9	86.2	14.2	24.8	79.5	71.6	9.0	19.1

Obviously, it's hard to predict that any pitcher is going to win 5 Cy Young Awards with two additional 2nd-place finishes between the ages of 31 and 40, as Randy Johnson did. And, given the history of pitchers who blow out their arms or just suddenly lose their effectiveness one day, it's far more likely than not that J.R. Richard would have ended up with a career much worse than Randy Johnson's, even if he hadn't had the stroke.

But damn! Surely there's an alternate universe out there somewhere, where J.R. Richard dominated the 1980s like Randy Johnson dominated the 2000s.

- **50 Years Ago: How the Miracle Mets Did It**

The 2019 season was the 50th anniversary of one of the most famous teams in major-league baseball history: the 1969 Miracle New York Mets.

From 1962 through 1967, the New York Mets lost 120, 111, 109, 112, 95, and 101 games, respectively. The 1968 Mets improved somewhat, winning a franchise best 73 games (while still losing 89 games).

And then came 1969. The Mets won 100 games and the World Series!

How did they do it? How did the 1969 Mets win 27 more games than they did the year before?

The first two tables below compare the 1968 and 1969 New York Mets.

Player Won-Lost Records, 1968 vs. 1969 Mets

Team	pWins	pLosses	pWOPA	pWORL	eWins	eLosses	eWOPA	eWORL
1969	262.0	224.0	37.7	66.2|	244.9	241.1	4.2	32.7
1968	236.5	252.5	-16.6	9.8|	243.4	245.6	-1.9	24.4
Difference	**25.5**	**-28.5**	**54.3**	**56.4|**	**1.5**	**-4.5**	**6.1**	**8.2**

Player Won-Lost Records, 1968 vs. 1969 Mets
Net Wins by Factor

Team	Batting	Baserunning	Pitching	Fielding
1969	-2.5	-0.5	3.9	2.5
1968	-5.0	-0.7	1.4	2.5
Difference	**2.5**	**0.2**	**2.5**	**0.0**

The 1969 Mets won 27 games more than they did in 1968. Since pWins tie to team wins, by construction, the 1969 Mets earned about 27 more pWins (actually, 25.5) by construction and about 54 more pWOPA (basically twice 27).

On the other hand, eWins do not tie to team wins, but control for context. And, while the 1969 Mets earned 56.4 more pWORL than the 1968 Mets, they amassed only 8.2 more eWORL.

So, one part of the answer - almost certainly the largest part - to the question "How did the Miracle Mets do it?" was that they did a better job (and/or "were luckier") at converting their performance into wins. Note that this isn't some heretofore unknown revelation that Player won-lost records has just uncovered: the 1968 Mets had 77 Pythagorean wins while the '69 Mets had 92 - a solid, respectable 15-game improvement, but not the 27-game difference in actual wins. Baseball-Reference shows the 1968 Mets with 34.6 rWAR, the '69 Mets with 41.1, a gap of only 6.5 wins (which is quite close to, but actually slightly smaller than, the gap in eWORL). The 1968 Mets went 26-37 in 1-run games; the '69 Mets went 41-23 in such games.

All of that said, the 1968 Mets were a sub-.500 team - in actual results, Pythagorean record, and eWins over positional average (eWOPA) - and the 1969 Mets were over .500.

The next table looks at the key contributors to the 1968 Mets who were also on the 1969 Mets and compares their (context-neutral, teammate-adjusted) Player won-lost records for the two years. The players are sorted by their eWins over replacement level (eWORL) in 1968.

Player Won-Lost Records, Key Members of 1968 New York Mets Who Also Played for 1969 Mets

	1968 New York Mets				1969 New York Mets			
Player	**Age**	**Games**	**eWOPA**	**eWORL**	**Age**	**Games**	**eWOPA**	**eWORL**
Tom Seaver	23	38	3.9	5.5	24	39	2.7	4.8
Ed Charles	35	117	2.9	4.2	36	61	-0.2	0.3
Cleon Jones	25	147	1.7	3.6	26	137	3.9	5.7
Ron Swoboda	24	132	0.9	2.7	25	109	-1.3	0.0
Jerry Koosman	25	35	0.7	2.3	26	32	2.0	3.8
Jerry Grote	25	124	1.2	2.3	26	113	1.4	2.5
Ken Boswell	22	75	0.9	1.7	23	102	0.2	1.4
Art Shamsky	26	116	0.2	1.3	27	98	0.6	1.7
Bud Harrelson	24	111	0.1	1.3	25	122	0.6	1.9
Ron Taylor	30	58	0.5	1.2	31	59	0.3	1.1
Al Jackson	32	27	0.5	1.1	33	9	-0.2	-0.1
Cal Koonce	27	55	0.2	1.0	28	40	-0.7	0.1

Perhaps the most striking thing about this table is that of the first nine players listed, only one was older than 26 in 1968, Ed Charles. Charles also saw the largest performance decline from 1968 to 1969 of any player in the above table.

The next table shows players who were on the 1968 Mets but earned less than 1.0 eWORL who earned more than 1.0 eWORL for the 1969 Mets.

Minor Members of 1968 New York Mets Who Stepped Up in 1969

	1968 New York Mets				1969 New York Mets			
Player	**Age**	**Games**	**eWOPA**	**eWORL**	**Age**	**Games**	**eWOPA**	**eWORL**
Jim McAndrew	24	12	0.1	0.7	25	27	0.5	1.5
Don Cardwell	32	30	-0.7	0.5	33	30	-0.1	1.1
Nolan Ryan	21	21	-1.9	-0.9	22	25	0.3	1.1
Tommie Agee	25	132	-2.1	-1.0	26	149	2.0	4.0

Two members of the 1968 Mets improved somewhat, from just below 1 eWORL to just above: Don Cardwell and Jim McAndrew. In McAndrew's case, the difference was mostly about playing time: the 25-year-old McAndrew appeared in just more than twice as many games (27) as the 24-year-old McAndrew had the year before (12).

The third player on the list is a familiar name. Nolan Ryan did not really embark on his legendary Hall-of-Fame career until he was traded to the California Angels in the 1971-72 offseason. But the 1969 season was the first season in Ryan’s career where he showed glimpses of what was to come: 92 strikeouts against only 60 hits allowed in 89.2 innings pitched.

The last player in the above table is the member of the 1968 Mets who took by far the most dramatic step forward in 1968, as measured by (context-neutral, teammate-adjusted) eWins: Tommie Agee. Like most of the players who have shown up so far, Agee was young enough - entering his age-26 season in 1969 - that significant improvement shouldn't have been completely unexpected. In Agee's case, he also had a previous track record of success, having been an above-average center fielder for the Chicago White Sox in 1966 and 1967 at ages 23 and 24.

Finally, the next table shows members of the 1969 Mets who earned at least 0.5 eWORL who did not play at all for the 1968 Mets.

Player Won-Lost Records, New Members of 1969 New York Mets

Player	Age	Games	eWins	eLosses	eWOPA	eWORL
Gary Gentry	22	35	13.9	15.0	-0.3	1.5
Tug McGraw	24	43	7.3	7.7	-0.0	1.3
Donn Clendenon	33	72	7.0	6.2	0.2	0.9
Jack Dilauro	26	23	2.3	2.0	0.3	0.6

The Mets had four players who did not play at all for them in 1968 contribute at least 0.5 eWORL. Two of the four (Gentry and Dilauro) made their major-league debut in 1969. Tug McGraw also came up through the Mets minor-league system, having appeared previously for the Mets in 1965, '66, and '67, but not 1968.

The only addition the 1969 Mets made from outside of their organization for 1969 was platoon first baseman Donn Clendenon, who the Mets acquired from the Montreal Expos in mid-June. Clendenon filled his role well enough, but it's hard to see him as the final piece of the puzzle that was able to push the Mets over the top.

Tug McGraw is perhaps the quintessential 1969 Miracle Met. Like most of his teammates, Tug McGraw was a young guy who had come up through the Mets organization. In 1969, McGraw was 24 years old and just starting what turned out to be an excellent 19-year career. Overall, in 1969, National League batters hit .243/.329/.350 against McGraw, a batting line that was very similar to the overall National League average of .250/.319/.369. The result was the league-average (context-neutral) Player won-lost record shown above.

Somehow, though, that league-average-ish batting line allowed by McGraw translated into a 2.24 ERA for McGraw - far better than league average (3.59) - and 12 saves without a single blown save. Which led to a much more valuable season for McGraw in context than out, as shown below.

	Games	Wins	Losses	WOPA	WORL
Tug McGraw					
In Context (pWins)	43	9.5	5.5	4.2	5.6
Context-Neutral (eWins)		7.3	7.7	-0.0	1.3

So, how did the Mets do it? Three keys.

- Collect a Group of Good, Young Baseball Players
- None of Whom Have a Bad Season
- Add in a Generous Helping of "Clutch" and "Luck"

Nothing to it, right?

- **75 Years Ago: Vern Stephens, Forgotten Superstar**

Any good statistic should offer some new insights and identify some players who perhaps had better careers than people remember. In the case of Baseball Player won-lost records, one such player was the starting shortstop for the only St. Louis Browns team to win a pennant, which they did 75 years before 2019, in 1944.

Vern Stephens was a major-league shortstop from 1942 through 1950 and a third baseman from 1951 through 1954 (ignoring 3 games in 1941 and 25 games in 1955 at either end of his career). Bill James wrote fairly extensively about Stephens in his book on the Hall of Fame, *Whatever Happened to the Hall of Fame* (Free Press, 1995), in which he devoted a chapter to comparing Stephens to Phil Rizzuto – who had not yet been elected to the Hall of Fame when James wrote the book, but who was elected by the Veterans' Committee in 1994, between the publication of the hardcover and paperback versions of James's book.

Using my usual format for player articles, here are five highlights of Vern Stephens's career.

- Vern Stephens was named to eight All-Star teams, including 1945, when the All-Star Game was canceled due to World War II travel restrictions. Stephens was the starting shortstop for the American League in two All-Star games, 1943 and 1944.

- Vern Stephens received MVP votes nine times. He finished in the top 10 in MVP voting six times and in the top 5 three times.

- Vern Stephens was the starting shortstop for the 1944 St. Louis Browns, who won the only American League pennant in that franchise's 52-year history. In 1944, Stephens batted .293/.365/.462 with 20 home runs and an AL-leading 109 RBI. Stephens finished third in MVP voting in 1944, the highest finish of his career, behind Detroit Tigers pitchers Hal Newhouser and Dizzy Trout.

- In addition to 1944, Stephens led the American League in RBI two other times, in 1949 with 159 and in 1950 with 144. His 159 RBI in 1949 are the most in a season by a shortstop in MLB history. His 144 RBI in 1950 are the third-most in a season by a shortstop in MLB history. Stephens also led the AL in home runs in 1945 with 24. He hit 20 or more home runs six times in his career with a career high of 39 in 1949.

- Vern Stephens was the first third baseman in the history of the Baltimore Orioles. Stephens had the first hit by an Oriole in Memorial Stadium when he singled in the bottom of the second inning of their home opener on April 15, 1954.

Vern Stephens's Career as Viewed by Player Won-Lost Records

Vern Stephens

Basic Player Won-Lost Records as Measured by pWins (Tied to Team Wins)

Season	Team	Age	Games	pWins	pLoss	pWORL	pWOPA
1941	SLA	20	3	0.0	0.0	-0.0	-0.0
1942	SLA	21	145	20.8	19.6	4.1	1.8
1943	SLA	22	137	20.5	17.3	5.3	3.4
1944	SLA	23	145	23.8	17.0	10.0	7.9
1945	SLA	24	149	24.7	19.8	8.0	5.8
1946	SLA	25	115	15.3	15.0	2.3	0.7
1947	SLA	26	150	20.9	20.2	2.5	0.6
1948	BOS	27	155	25.6	20.7	7.8	5.4
1949	BOS	28	155	27.2	18.2	11.9	9.4
1950	BOS	29	149	23.3	18.8	7.5	5.2
1951	BOS	30	109	13.6	11.3	3.0	1.7
1952	BOS	31	92	10.3	9.5	1.9	0.9
1953		32	90	8.4	8.3	0.5	-0.4
	CHA		*44*	*3.7*	*3.3*	*0.0*	*0.0*
	SLA		*46*	*4.8*	*5.0*	*0.0*	*0.0*
1954	BAL	33	101	10.6	10.9	0.1	-1.1
1955		34	25	1.7	2.0	-0.2	-0.4
	BAL		*3*	*0.1*	*0.2*	*0.0*	*0.0*
	CHA		*22*	*1.6*	*1.9*	*0.0*	*0.0*
	CAREER (reg. season)		**1,720**	**246.7**	**208.7**	**64.6**	**40.5**
	PostSeason (career)		6	0.7	0.9	-0.1	-0.2

Vern Stephens

Basic Player Won-Lost Records as Measured by (Context-Neutral) eWins

Season	Team	Age	Games	eWins	eLoss	eWORL	eWOPA
1941	SLA	20	3	0.0	0.0	0.0	0.0
1942	SLA	21	145	20.7	19.6	4.0	1.7
1943	SLA	22	137	20.6	17.2	5.6	3.6
1944	SLA	23	145	22.9	17.9	8.3	6.2
1945	SLA	24	149	24.4	20.2	7.5	5.2
1946	SLA	25	115	16.1	14.2	3.9	2.3
1947	SLA	26	150	22.3	18.7	5.5	3.6
1948	BOS	27	155	24.4	21.9	5.5	3.0
1949	BOS	28	155	25.7	19.7	9.1	6.5
1950	BOS	29	149	22.3	19.8	5.5	3.3
1951	BOS	30	109	13.3	11.6	2.4	1.1
1952	BOS	31	92	10.1	9.8	1.5	0.4
1953		32	90	8.4	8.4	0.3	-0.6
	CHA		*44*	*3.3*	*3.8*	*0.0*	*0.0*
	SLA		*46*	*5.1*	*4.7*	*0.0*	*0.0*
1954	BAL	33	101	11.1	10.4	1.2	-0.0
1955		34	25	2.0	1.7	0.4	0.2
	BAL		*3*	*0.1*	*0.2*	*0.0*	*0.0*
	CHA		*22*	*1.9*	*1.6*	*0.0*	*0.0*
	CAREER (reg. season)		**1,720**	**244.2**	**211.2**	**60.6**	**36.4**
	PostSeason (career)		6	0.8	0.8	0.1	0.0

At What Was Vern Stephens Elite?

Vern Stephens was the second-best shortstop in baseball in the 1940s.

Top 10 Shortstops of the 1940s
(Ranked by eWOPA, shortstop only)

		pWins	pLoss	pWOPA
1	Lou Boudreau	195.0	167.2	32.7
2	**Vern Stephens**	**173.6**	**147.9**	**29.6**
3	Pee Wee Reese	135.2	119.8	18.0
4	Luke Appling	155.0	142.7	15.5
5	Johnny Pesky	62.2	54.9	8.2
6	Eddie Joost	103.3	97.7	7.5
7	Arky Vaughan	52.7	46.8	7.3
8	Joe Cronin	36.4	31.8	5.7
9	Eddie Lake	76.4	72.7	5.1
10	Phil Rizzuto	104.6	102.3	4.2

There are six Hall-of-Famers in the above table and Stephens ranks ahead of five of them: Reese, Appling, Vaughan, Cronin, and Rizzuto.

There is, of course, an obvious difficulty in evaluating Vern Stephens's career in the 1940s: World War II. Stephens was one of relatively few significant major-league players who did not serve in the military in World War II. According to Stephens's SABR Biography by Mark Armour, Stephens failed his army physical due to a minor-league knee injury which he re-aggravated in 1943. The injury apparently worried the draft board but did not appear to adversely affect Stephens's ability to play major-league baseball.

Vern Stephens was probably the best position player in the American League in 1944 and 1945. Which is impressive, but would certainly be more impressive if, for example, Joe DiMaggio, Ted Williams, or even Luke Appling were playing in those leagues.

That said, Vern Stephens's best season, as measured by Player won-lost records, was not 1944 or 1945; it was 1949. Stephens had five seasons with more than 5.0 pWOPA and 7.0 pWORL. Two of these were 1944 and 1945. But the other three were 1948 – 1950.

The next table, then, shows the best players in the major leagues in the first five years after World War II, 1946 – 1950.

Top 10 Players, 1946 - 1950
(Ranked by pWORL)

		pWins	pLoss	pWOPA	pWOPA
1	Ted Williams	123.2	121.5	40.2	50.6
2	Stan Musial	116.8	114.1	28.6	38.9
3	Pee Wee Reese	107.9	101.9	28.8	38.7
4	Bobby Doerr	109.6	103.7	26.8	37.0
5	Joe DiMaggio	100.3	97.4	25.3	34.2
6	**Vern Stephens**	**112.3**	**110.8**	**21.2**	**31.9**
7	Tommy Henrich	90.4	86.0	23.0	31.0
8	Hal Newhouser	93.0	91.5	19.4	30.1
9	Warren Spahn	86.6	84.9	18.4	28.2
10	Jackie Robinson	85.1	82.3	19.6	27.4

Everybody ahead of Stephens in this list is in the Hall of Fame. Although, interestingly, he ends up behind one other shortstop (Reese) and two players who were his teammates with the Boston Red Sox from 1948 – 1950 (Williams and Doerr). Still, he's one of only two non-HOFers on the list.

And, finally, extending beyond the 1940s, the top 20 shortstops as measured by Player won-lost records.

Top 20 Shortstops, since 1918
(Ranked by eWOPA, shortstop only)

		pWins	pLoss	pWOPA
1	Cal Ripken	306.8	278.2	48.5
2	Arky Vaughan	231.5	192.6	43.7
3	Alex Rodriguez	179.5	144.4	43.1
4	Barry Larkin	281.8	252.6	39.1
5	Alan Trammell	266.5	247.6	38.0
6	Pee Wee Reese	271.9	241.7	37.9
7	Joe Cronin	267.1	237.8	36.6
8	Ernie Banks	167.2	137.4	35.6
9	Derek Jeter	347.4	330.5	33.9
10	Lou Boudreau	215.9	188.4	33.3
11	**Vern Stephens**	**202.3**	**174.2**	**32.8**
12	Luke Appling	308.1	287.4	27.5
13	Ozzie Smith	326.1	316.2	26.5
14	Bert Campaneris	269.5	266.7	25.0
15	Jim Fregosi	187.5	173.4	23.6
16	Joe Sewell	178.9	163.2	23.5
17	Robin Yount	195.7	188.4	23.3
18	Nomar Garciaparra	147.3	131.4	23.0
19	Hanley Ramirez	147.8	128.3	22.6
20	Troy Tulowitzki	170.6	152.2	22.4

Eleven of the top thirteen shortstops of the last 100 years, as measured by Player won-lost records are in the Hall of Fame (including Derek Jeter, who has been elected to, but not inducted in, the Hall of Fame as I write this). The exceptions are Alex Rodriguez, who is not yet eligible for the Hall of Fame, and who would be an easy first-ballot selection based purely on his statistics, and Vern Stephens.

Knock one win off Stephens's total in 1943 and two wins in each of 1944 and 1945 for World War II and Stephens is still in the top 13 (in fact, he'd still be ranked at #11) and is still the only eligible non-HOFer among them.

- **100 Years Ago: Can We Identify the Players who Threw the World Series?**

The 2019 season marked the 100th anniversary of perhaps the most famous – or at least the most infamous – World Series in major-league history. The Cincinnati Reds defeated the heavily favored Chicago White Sox 5 games to 3 in the 1919 World Series. Less than a year later, eight members of the Chicago White Sox were banned from organized baseball for life for throwing the World Series in exchange for payoffs from gamblers.

The purpose of this analysis is not to argue whether any of these players threw the World Series or not. From what I know of the available evidence, they did. Rather, what I want to see is whether we can identify the "Eight Men Out" from their World Series statistics.

Let's start with a thought exercise. If a player was going to throw a game – or a series of games – what would we expect him to do and how might that show up in the statistics.

One obvious way for a player to help throw a game would be to simply play badly: not try in the batters' box or in the field. In that case, we would simply expect a player's statistics to be bad: say, 0-for-4 with two strikeouts and an error in the field. Baseball is a tough sport and even the best players in baseball sometimes have games like that. But one would not necessarily want to just strike out or pop out every at bat through a six or seven or eight game series. That might be a little too obvious.

Alternately, then, a player could make a conscious effort to try harder in less important situations: maybe go 1-for-4 but the one is a harmless single with two outs and the bases empty, while two of the outs came with runners in scoring position. It may not be obvious, in such a case, from a player's raw statistics that he was trying to throw the series. One would have to dig deeper to put the player's performance in context.

Let's put some names here. Lefty Williams started three games in the 1919 World Series and lost them all. For the series, he allowed 12 runs (all earned) on 12 hits and 8 walks in 16.1 innings, a 6.61 ERA. A 6.61 ERA is bad, regardless of the context in which it was compiled. We know that Lefty Williams helped to throw the 1919 World Series, but I don't know that these statistics necessarily show that. Jack Morris had an 8.44 ERA in two starts in the 1992 World Series: sometimes pitchers just don't have it.

On the other hand, Shoeless Joe Jackson led all White Sox batters in the 1919 World Series in batting average, on-base percentage, slugging percentage, home runs, runs scored, and RBI. He batted .375/.394/.563 with the only home run of the series, 6 RBI, and 5 runs scored. Many people point to this performance as evidence that Jackson wasn't ***really*** trying to throw the World Series. But maybe he was just more subtle about it than Williams?

I calculate Player won-lost records two ways: pWins tie to team wins, while eWins control for the context in which they take place. As a general rule, positive contributions that take place in more important situations and positive contributions that take place in wins will generate more pWins than eWins. Positive contributions that take place in less important situations or in games a player's team ends up losing will typically generate fewer pWins than eWins.

Trying to think through our two possible ways of cheating in terms of pWins and eWins, then, simply playing bad will produce very few pWins, but also very few eWins – it's not like the ***expected*** payoff of a 6.61 ERA is very high. Trying harder in less important situations, on the other hand, would likely lead to more eWins than pWins – i.e., fewer wins than expected.

The next table, then, looks at the Player won-lost records of the Chicago White Sox in the 1919 World Series.

Player Won-Lost Records, 1919 World Series, Chicago White Sox

Player	pWins	pLoss	eWins	eLoss	Difference
Lefty Williams	0.8	1.5	1.1	1.2	-0.32
Buck Weaver	0.8	1.0	1.0	0.8	-0.20
Joe Jackson	1.4	1.2	1.6	1.0	-0.19
Eddie Cicotte	1.3	1.6	1.5	1.5	-0.13
Happy Felsch	0.8	1.6	0.9	1.5	-0.09
Swede Risberg	0.8	1.1	0.8	1.0	-0.05
Big Bill James	0.1	0.4	0.2	0.4	-0.05
Nemo Leibold	0.5	0.7	0.5	0.6	-0.04
Eddie Murphy	0.0	0.1	0.0	0.0	-0.03
Fred McMullin	0.0	0.0	0.0	0.0	-0.02
Erskine Mayer	0.0	0.0	0.0	0.0	-0.00
Byrd Lynn	0.0	0.0	0.0	0.0	-0.00
Grover Lowdermilk	0.0	0.0	0.0	0.0	0.00
Roy Wilkinson	0.1	0.0	0.0	0.1	0.01
Eddie Collins	1.0	1.2	1.0	1.2	0.02
Chick Gandil	0.7	1.0	0.7	1.0	0.03
Shano Collins	0.4	0.5	0.4	0.6	0.05
Ray Schalk	1.0	0.5	0.9	0.6	0.11
Dickie Kerr	1.3	0.6	1.0	0.8	0.26

The players are ranked by the difference between their pWins and eWins. Surprisingly, the largest difference is the player who I used as an example of just being bad: Lefty Williams. It turns out my focus on Williams's 6.61 ERA skipped a step. Williams allowed 20 baserunners in 16-1/3 innings pitched. That works out to a WHIP of 1.224.

Excluding Dickey Kerr (17 baserunners in 19 innings and two complete-game victories), the rest of the White Sox staff (excluding Williams) allowed 38 hits and 14 walks in 35-2/3 innings, a WHIP of 1.458. White Sox pitchers other than Kerr and Williams had a combined ERA of 3.53. Somehow, Williams managed to allow (a lot) more runs despite allowing fewer baserunners.

Meanwhile, sitting at number two and three in the table are the two top White Sox batters in the 1919 World Series. Buck Weaver batted .324/.324/.500, led the White Sox with 5 extra-base hits (4 doubles, 1 triple), and scored four runs, more than anyone but Jackson.

The top six players in the above table are among the "Eight Men Out" – and include the two of those eight who have received the most vigorous subsequent defense of innocence.

A seventh of the eight, Fred McMullin, fails to make the top six only because of playing time. McMullin had only two at-bats in the 1919 World Series. He went 1-for-2 in those at bats. The hit came in the 8th inning of Game 1 with the White Sox trailing 8 – 1. The out came with two outs in the top of the ninth inning of Game 2 with the White Sox trailing 4 – 2 with a runner on first base (Ray Schalk).

Interestingly, the one of the "Eight Men Out" that leaves is the one who is considered to have been one of the ringleaders, Chick Gandil. The value of Gandil's World Series performance, in terms of wins, was almost exactly what one would expect. That said, one would not have expected much from Chick Gandil's performance in the 1919 World Series: a batting line of .233/.258/.300 and an error.

Meanwhile, the clean Sox – Collins, Schalk, Kerr – generated more pWins than eWins – almost without exception – Nemo Leibold (who batted 1-for-18) and Big Bill James (who pitched 4.2 relief

innings, allowing 4 runs on 8 hits and 3 walks) are the only "clean" White Sox players who had a meaningful role in the 1919 World Series who under-performed expectations (given their performance – obviously 1-for-18 doesn't produce many eWins).

It turns out that it's surprisingly easy to find the Black Sox in the above table. But, of course, we knew going in who we were looking for. Are the 1919 White Sox unusual in this regard? Was the gap between the pWins and eWins of the Black Sox – or the gap between the pWins and eWins of the clean Sox – unusual for a losing World Series team?

The next two tables take a crack at answering that by looking at two other losing World Series teams. The 1919 World Series was unusual historically not only because it was thrown, but also because it was a best-of-nine series, which the Reds won 5-to-3. There was one other World Series which was won 5-to-3 for which I have calculated Player won-lost records, the 1921 World Series in which the New York Giants defeated the New York Yankees. The World Series records of the 1921 New York Yankees are shown next.

Player Won-Lost Records, 1921 World Series, New York Yankees

Player	pWins	pLoss	eWins	eLoss	Difference
Bob Shawkey	0.42	1.02	0.66	0.78	-0.24
Carl Mays	1.59	1.37	1.82	1.14	-0.23
Chick Fewster	0.32	0.68	0.49	0.51	-0.17
Home Run Baker	0.17	0.35	0.26	0.26	-0.09
Wally Schang	0.79	0.83	0.86	0.75	-0.08
Wally Pipp	0.41	0.84	0.47	0.78	-0.06
Babe Ruth	0.68	0.61	0.74	0.55	-0.06
Roger Peckinpaugh	0.99	1.22	1.04	1.18	-0.05
Bob Meusel	1.02	1.20	1.05	1.17	-0.03
Elmer Miller	0.64	0.98	0.67	0.94	-0.03
Harry Harper	0.05	0.39	0.07	0.37	-0.02
Aaron Ward	0.84	0.99	0.86	0.97	-0.01
Jack Quinn	0.20	0.40	0.21	0.39	-0.01
Tom Rogers	0.00	0.00	0.00	0.00	-0.00
Bill Piercy	0.01	0.01	0.01	0.01	0.00
Rip Collins	0.00	0.02	0.00	0.02	0.00
Al DeVormer	0.01	0.00	0.00	0.01	0.00
Mike McNally	0.77	0.81	0.69	0.89	0.09
Waite Hoyt	2.08	1.29	1.99	1.38	0.09

None of the Yankees were quite as extreme as Lefty Williams, but the pWins-to-eWins gaps of Bob Shawkey, Carl Mays, and Chick Fewster are consistent with those of Weaver, Jackson, and Cicotte. Surprisingly, the biggest difference is perhaps at the bottom of the table. Nobody on the 1921 Yankees had as favorable a pWins-to-eWins gap as Dickey Kerr or Ray Schalk did for the White Sox.

After 1921, the World Series returned to the best-of-seven format with which we are all familiar. After having eight of their players banned for life, the White Sox sunk into decades of mediocrity – or worse. Like the Israelites of the Old Testament, the White Sox finally found their promised land after 40 years in the desert, returning to the World Series in 1959. Where they lost, four games to two.

The next table, then, looks at the World Series records of the 1959 White Sox.

Player Won-Lost Records, 1959 World Series, Chicago White Sox

Player	pWins	pLoss	eWins	eLoss	Difference
Early Wynn	0.90	1.41	1.18	1.13	-0.28
Gerry Staley	0.15	0.56	0.38	0.33	-0.23
Al Smith	0.55	0.80	0.71	0.64	-0.16
Luis Aparicio	0.58	1.15	0.74	0.99	-0.16
Billy Goodman	0.23	0.53	0.32	0.45	-0.09
Jim Rivera	0.37	0.53	0.40	0.49	-0.04
Nellie Fox	0.86	0.77	0.90	0.74	-0.04
Norm Cash	0.00	0.15	0.02	0.13	-0.02
Jim McAnany	0.10	0.16	0.12	0.15	-0.01
Ted Kluszewski	0.85	0.46	0.86	0.45	-0.01
Jim Landis	0.67	0.93	0.68	0.92	-0.01
Bubba Phillips	0.26	0.25	0.26	0.25	-0.00
Sammy Esposito	0.00	0.03	0.00	0.03	-0.00
Billy Pierce	0.05	0.03	0.05	0.03	-0.00
Ray Moore	0.00	0.01	0.00	0.01	-0.00
Johnny Romano	0.00	0.02	0.00	0.02	-0.00
Turk Lown	0.06	0.03	0.05	0.03	0.00
Earl Torgeson	0.05	0.02	0.04	0.03	0.01
Sherm Lollar	0.66	0.79	0.64	0.80	0.02
Bob Shaw	1.05	1.12	1.02	1.15	0.03
Dick Donovan	0.61	0.24	0.47	0.38	0.14

The results here look broadly similar to the 1921 Yankees. Early Wynn's gap here is nearly as bad as Lefty Williams. But I don't think anybody thinks that Early Wynn was trying to throw the 1959 World Series. And, in fact, a large part of the reason for Wynn's gap was the White Sox 11-0 victory in Game 1, where Wynn earned fewer pWins than expected for his seven innings of six-hit, shutout ball simply because he pitched with a 2-0 lead starting in the second inning which grew to 11-0 by the time Wynn went out to pitch the top of the fifth inning (Wynn earned .45 pWins vs. .51 eWins).

The next table summarizes the results of the three previous tables, comparing the records of the eight players with the largest pWins-to-eWins gaps to the rest of the team. For the 1919 White Sox, however, instead of the eight players with the largest gaps, the eight players who were subsequently banned for life are compared to the "Clean Sox".

Player Won-Lost Records, 1959 World Series, Chicago White Sox

Player	pWins	pLoss	eWins	eLoss	Difference
1919 Chicago White Sox					
Black Sox	6.63	8.98	7.60	8.01	*-0.97*
Clean Sox	4.37	4.02	4.04	4.34	*0.33*
---	---	---	---	---	---
1921 New York Yankees					
Bottom 8	5.38	6.93	6.35	5.96	*-0.97*
Everyone Else	5.62	6.07	5.55	6.14	*0.07*
---	---	---	---	---	---
1959 Chicago White Sox					
Bottom 8	3.65	5.91	4.65	4.90	-1.01
Everyone Else	4.35	4.09	4.20	4.25	0.15

It's interesting. The headline number that was my primary focus – the "Difference" of the Black Sox – is perhaps the least remarkable number there. It's literally identical to the number for the bottom eight players on the 1921 New York Yankees and would be identical to the number for the 1959 White Sox if I had shown one fewer decimal place.

But remember: The Black Sox were not the "Bottom 8" for the 1919 White Sox. They were the bottom six. I have replaced Big Bill James and Nemo Leibold's combined -0.09 with Fred McMullin and Chick Gandil, who combined for +0.01. Subbing in James and Leibold would give the 1919 White Sox a larger difference than the 1921 Yankees or 1959 White Sox. But, of course, there's no reason to think there was anything untoward about Nemo Leibold's performance in the World Series; and there's lots of good reason to think there was very definitely something untoward about Chick Gandil's performance.

There are, however, two differences between the 1919 White Sox and the other two teams. First, the Black Sox played a larger role in the 1919 World Series than the "Bottom 8" of either the Yankees or 1959 Sox. The Black Sox earned 65% of the player decisions for the White Sox in the 1919 World Series. The Bottom 8 for the 1921 Yankees accounted for just over half (51.3%) of their team's decisions and the Bottom 8 for the 1959 White Sox were at 53.1%. This may not mean much of anything, but it could suggest that the White Sox coordinated their efforts more, trying harder as a group in games that they ultimately won than in games that they ultimately lost (on purpose).

The other difference is the difference of everyone else. For the 1919 White Sox, the "Clean Sox" had significantly more pWins than eWins as a group, so that the gap between the "Black Sox" and "Clean Sox", in terms of pWin-to-eWin gap, was 1.3. For the other two teams, "Everyone Else" mostly saw their pWins match their eWins.

For the 1959 White Sox, the gap for "Everyone Else" was 0.15. More than 90% of that was Dick Donovan, who earned 0.61 pWins against 0.47 eWins, a gap of 0.14. Donovan's pWins exceeded his eWins because of his five-out save in Game 5 (in which he entered with the bases loaded and one out), which the White Sox won 1-0. Donovan earned .36 pWins for getting five huge clutch outs; he earned .08 eWins for getting five batters to hit the ball in play (one pop-out, one fly-out, three groundouts).

Obviously, it's somewhat hard to be purely objective here, because I know that there was, in fact, something different about the 1919 White Sox than the 1921 Yankees or 1959 White Sox. And the sample size here is extremely small. But I do think there's something in the data here.

The Black Sox and Clean Sox were playing different series, as reflected in their respective pWins-to-eWins gaps. While the 1921 Yankees and 1959 White Sox seem to perhaps have had more consistent results across their entire teams.

Do I think one could do something like this to evaluate whether any other teams may have tried to throw a World Series, or the extent to which individual players may have thrown individual games? No, I do not. The sample sizes are too small and the differences, if they exist at all and I'm not simply making them up, are far too subtle.

Do I think this is strong evidence that Buck Weaver was not as innocent as the movie *Eight Men Out* would have us believe? No, I think it might be weak evidence of such, but certainly not "strong" evidence.

Mostly, this was just an opportunity to play with numbers and maybe learn a little something about some baseball history, which are two of my favorite things to do in life.

Appendix 1: How Baseball Player Won-Lost Records are Calculated

The job of a Major League Baseball player is to help his team win games, for the ultimate purpose of making the playoffs and winning the World Series. Since the early history of Major League Baseball, pitchers have been credited with Wins and Losses as official measures of the effectiveness of their pitching. Of course, Pitcher Wins are a fairly crude measure of how well a pitcher did his job, as wins are the product of the performance of the entire team - batters, baserunners, and fielders, in addition to pitchers.

While the implementation of Pitcher Wins as a measure of pitcher effectiveness is less than ideal, nevertheless the concept is perfectly sound. The ultimate measure of a player's contribution - be he a pitcher, a hitter, a baserunner, or a fielder - is in how much he contributes to his team's wins.

Using play-by-play data compiled from Retrosheet, I have constructed a set of Player won-lost records that attempt to quantify the precise extent to which individual players contribute directly to wins and losses in Major League Baseball on the baseball field. The information used here was obtained free of charge from and is copyrighted by Retrosheet. Interested parties may contact Retrosheet at "www.retrosheet.org".

- **Basic Calculations**

The starting point for my construction of Player wins and losses is context-dependent player wins and losses - pWins and pLosses - and the starting point for constructing pWins and pLosses is Win Probabilities. The concept of Win Probability was first developed by Eldon and Harlan Mills in 1969 and published in their book, *Player Win Averages*.

The basic concept underlying win probability systems is elegantly simple. At any point in time, the situation in a baseball game can be uniquely described by considering the inning, the number and location of any baserunners, the number of outs, and the difference in score between the two teams. Given these four things, one can calculate a probability of each team winning the game. Hence, at the start of a batter's plate appearance, one can calculate the probability of the batting team winning the game. After the completion of the batter's plate appearance, one can once again calculate the probability of the batting team winning the game. The difference between these two probabilities, typically called the Win Probability Advancement or something similar, is the value added by the offensive team during that particular plate appearance (where such value could, of course, be negative).

If we assume that the two teams are evenly matched, then the initial probability of winning is 50% for each team. At the end of the game, the probability of one team winning will be 100%, while the probability of the other team winning will be 0%. The sum of the Win Probability advancements for a particular team will add up to exactly 50% for a winning team (100% minus 50%) and exactly -50% for a losing team (0% minus 50%). Hence, Win Probability Advancement is a perfect accounting structure for allocating credit for team wins and losses to individual players.

Changes in Win Probabilities are credited to the individual players responsible for these changes. These contributions are called Player Game Points here. Positive changes in Win Probabilities are credited as positive Player Game Points, while negative changes in Win Probabilities are credited as negative Player Game Points.

Player Game Points are assigned to both offensive and defensive players on each individual play. Anything which increases the probability of the offensive team winning is credited as positive points to the offensive player(s) involved and as negative points to the defensive player(s) involved. Anything which increases the probability of the defensive team winning is credited as positive points to the

defensive player(s) involved and as negative points to the offensive player(s) involved. Within any individual game, the number of positive Player Game Points by offensive players on one team will be exactly equal to the number of negative Player Game Points by defensive players on the other team and vice versa. Similarly, the number of positive player game points collected by members of the winning team will exactly equal the number of negative player game points accumulated by the losing team (and, again, vice versa).

Player Game Points assigned in this way provide a perfect accounting structure for assigning 100% of the credit for all changes in Win Probability to players on both teams involved in a game.

I convert these Player Game Points into context-dependent Player Wins and Losses, which I call pWins and pLosses. Given a set of pWins and pLosses for a season, I then also construct a set of context-neutral Player Wins and Losses, called eWins and eLosses as well, which can be compared to pWins and pLosses, to identify the contextual factors affecting players' performances and how those contextual factors affect the translation of player wins and losses into team wins and losses.

For both context-dependent and context-neutral Player decisions, two adjustments are made to these results to move from initial player game points to Player won-lost records.

1. Normalizing Component Won-Lost Records to 0.500

A key implicit assumption underlying my Player won-loss records is that Major League Baseball players will have a combined winning percentage of 0.500. While this is trivially true at the aggregate level, almost regardless of what you do, it should also be true at finer levels of detail as well.

So, for example, if Player won-loss records are calculated correctly, the total number of wins accumulated by baserunners on third base for advancing on wild pitches and passed balls should be exactly equal to the total number of losses accumulated by baserunners on third base for failing to advance on wild pitches or passed balls. Likewise, the total number of wins accumulated by second basemen for turning double plays on ground balls in double-play situations should be exactly equal to the total number of losses accumulated by second basemen for failing to turn double plays on ground balls in double-play situations.

To ensure this symmetry, I normalize player won-loss records to ensure that the total number of player wins is exactly equal to the number of player losses for every component of player game points as well as by sub-component, at the finest level of detail which makes logical sense in each case.

2. Normalizing Player Won-Loss Records by Game

The total number of player game points accumulated in an average major-league game is around 3.3 per team. This number varies tremendously game-to-game, however, with some teams earning 2 wins in some team victories while some other teams may earn 6 wins in team losses. At the end of the day (or season), however, all wins are equal. Hence, in my work, I have chosen to assign each team one player win and one player loss for each team game. In addition, the winning team earns a second full win, while the losing team earns a second full loss. Ties are allocated as 1.5 wins and 1.5 losses for both teams. Context-neutral player decisions (eWins and eLosses) are also normalized to average three Player decisions per game. For eWins and eLosses, this normalization is done at the season level, rather than the game level, so that different numbers of context-neutral player decisions will be earned in different games.

Technically, the second normalization here undoes some of the first normalization. When I first constructed Player won-lost records, I assumed that any such asymmmetries introduced by the second normalization would be random and would be likely to balance out over time. In fact, however, the normalization of games to exactly two pWins per team win (and two pLosses per team loss) lead to systematic asymmetries for some components. To correct this, I iterate through these two normalizations three times. That is, I normalize the results so that winning percentages by component and sub-component are equal to 0.500. I then normalize player decisions to tie to team wins and losses. I then take those results and re-normalize the results by component and sub-component. I then re-normalize those re-normalized results to again tie back to team wins and losses. I then repeat the last two steps two more times.

The result is a set of pWins which tie exactly to team wins (two pWins and one pLoss in team wins, one pWin and two pLosses in team losses) and for which pWin winning percentages are approximately 0.500 for every component and sub-component.

Why 3 Player Decisions per Game?

The choice of three player decisions per game here is largely arbitrary. I chose three because the resulting Player won-lost records end up being on a similar scale to traditional pitcher won-lost records, with which most baseball fans are quite familiar. For example, expressed in this way, Cody Bellinger led the major leagues in pWins in 2019 with 24.6 while Whit Merrifield led the major leagues in pLosses with 22.6. In comparison, Justin Verlander led all major league pitchers in 2019 with 21 wins (Verlander amassed 15.4 pWins).

Over the entire Retrosheet Era (1918 – 2019 when this was written), the most pWins accumulated by a player in a single season was 31.3 by Babe Ruth in 1927 (against 15.0 pLosses). The most single-season pLosses were accumulated by Julio Franco in 1985 with 23.6 pLosses (and 19.3 pWins).

Why Do Players Get Wins in Games Their Team Loses?

If one is interested in assigning credit to players for team wins or blame to players for team losses, one might think that it would make sense to only credit a player with pWins in games which his team won and only credit pLosses in games which his team lost. I have chosen instead to give players some pWins even in team losses and some pLosses even in team wins. I do this for a couple of reasons.

Most simply put, baseball players do tons of positive things in team losses and baseball players do tons of negative things in team wins. Throwing away all of those things based solely on the final score of the game leads, in my opinion, to too much valuable data simply being lost. It makes the results too dependent on context.

As I noted above, in the average major-league baseball game of the Retrosheet Era, the average team amasses 3.3 player game points. The win probability for the winning team goes from 50% at the start of the game to 100% at the end, so that the winning team will amass exactly 0.5 more positive player game points than negative player game points by construction. This means that the players on an average winning team will amass a combined record of something like 1.9 - 1.4 in a typical game. That works out to a 0.576 winning percentage, or about 93 wins in a 162-game schedule (93 - 69). Put another way, more than 40% of all player game points (1 - 0.576) would be zeroed out in a system that credited no pWins in team losses (or pLosses in team wins). That's simply too much lost information for me to be comfortable making such an adjustment.

There are two reasons why such a large percentage of plays do not contribute to victory. First, it is indicative, I think, of the fairly high level of competitive balance within Major League Baseball. Put

simply, bad Major League Baseball teams are not that much worse than good Major League Baseball teams. Surely, we can all remember a time when a first-place team lost two out of three games (or maybe even three out of three games) to a last-place team. For example, in early April 2019, the Detroit Tigers won 2 of 3 games from the New York Yankees in New York. The Tigers ended the 2019 season with a record of 47 – 114; the New York Yankees finished with a record of 103 – 59.

But the other reason why such a large percentage of plays do not contribute to victory, and why I assign player wins even in team losses and vice-versa, is because of the rules of baseball. Because there is no clock in baseball, the only way for a game to end (in a league with no slaughter rule) is for the winning team to do some things that reduce its chances of winning: it has to make 3 outs per inning for at least 8 innings (not counting rain-shortened games). Likewise, a losing team is guaranteed to do some things that increase its chance of winning: it must get the other team out 3 times per inning.

My pWins and pLosses will still reward players, however, who do positive things that contribute to wins more favorably than players who do positive things that lead to losses. As I noted above, an average team will amass a player winning percentage of approximately 0.576 in team wins (and 0.424 in team losses). By assigning 2 wins and only 1 loss in team wins, however, players will amass a 0.667 player winning percentage in team wins (and 0.333 in team losses). So, player wins that contribute to team wins will still be more valuable than player wins that happen in team losses. The latter are simply not worthless.

Relationship of Player Decisions to Team Decisions

Under my system, to move from players' team-dependent won-lost records (pWins and pLosses) to a team won-lost record, one can subtract out what I call "background wins" and "background losses." One-third of a player's decisions are background wins and one-third of a player's decisions are background losses. Mathematically, then, if the sum of the team-dependent won-lost records of the players on a team is W wins and L losses, then the team's won-lost record will be as follows:

$$\text{Team Wins} = W - (W + L) / 3; \quad \text{Team Losses} = L - (W + L) / 3$$

As some practical examples, a team of .500 players will be a .500 team (of course), but, for example, a team of .510 players (e.g., 248 - 238) will be a .530 team (86 - 76 in a 162-game season), and a team of .550 players (e.g., 267 - 219) will be a .650 team (105 - 57). At the other extreme, a team of .400 players (e.g., 194 - 292) will be a .200 team (32 - 130).

There are two implications to this relationship between player wins and team wins. First, the range of winning percentages for players is narrower than the range of team winning percentages. This is important in evaluating the concept of replacement level. In my work, team-level replacement level is a winning percentage around 0.328. But, ***player***-level replacement level is closer to 0.443.

The second implication is that player wins and losses do not have a purely additive effect on team wins and losses; instead, the effect is somewhat more multiplicative. In an average game, the players on the winning team will amass a (context-neutral) winning percentage of approximately 0.576 - not all that much above 0.500. Having players who are a little bit better than average will translate into a team that is a lot better than average. In fact, a team of 0.576 players would win well over 100 games in a 162-game season. The reverse is true of below-average players. A team of slightly below-average players will lose far more often than they win.

For example, the players on the 2019 Detroit Tigers amassed a pWin percentage of 0.431. In fact, that number has already been adjusted to reflect the Tigers' team record of 47-114, and hence understates the

raw context-neutral performance of the Tigers' players. In terms of raw context-neutral numbers, with no adjustments, the combined performance of the players on the 2019 Detroit Tigers was a player winning percentage of 0.474. In other words, in this case, a team of 0.474 players became a 0.292 team.

Players' final won-lost records will be pushed away from 0.500 depending on exactly how their performance translates into team wins and losses. So, the final Player records of the Tigers' players fell from 0.474 to 0.431 because the players' losses contributed more to losses than the players' wins were able to contribute to team victories. By tying to team wins and losses, pWins and pLosses for a player will be dependent on the context in which they take place. Part of that context is the quality of a player's teammates.

But even beyond the actual context of pWins and pLosses, this tendency of player records to push away from 0.500 also affects eWins and eLosses for a player as well. We can expect players with context-neutral won-lost records over 0.500 to have their record translate into (slightly) more wins than might be implied by their raw record, and players with context-neutral won-lost records below 0.500 to have their record translate into (slightly) more losses than their raw record.

This (expected) effect is stronger the more concentrated a player's record is within a game. Because of this, this "expected team win adjustment" is stronger for pitchers, especially starting pitchers, who concentrate their performance more heavily in the games they play. Because of this, ***pitching*** accounts for 31.2% of total player decisions, but ***pitchers*** earn 43.2% of pWins over replacement level.

Basic Results: pWins

Player wins end up being on a similar scale to traditional pitcher wins: 20 wins is a good season total; 300 wins is an excellent career total.

There are 83 major-league players who have accumulated 300 or more pWins within the seasons for which Retrosheet has released play-by-play data (1918 - 2019). They are shown below.

300 pGame Winners of the Retrosheet Era*

Player	pWins	pLosses	pWOPA	pWORL
Hank Aaron	**496.8**	369.2	97.7	141.8
Barry Bonds	**466.8**	310.6	137.2	174.7
Willie Mays	**465.0**	329.8	114.6	155.0
Babe Ruth	***447.0***	*257.1*	*173.4*	*211.7*
Pete Rose	**438.8**	394.4	25.3	65.8
Carl Yastrzemski	**430.6**	360.1	45.3	85.3
Rickey Henderson	**428.1**	350.2	62.6	100.1
Stan Musial	**423.7**	310.4	88.8	127.6
Mel Ott	***419.7***	*297.0*	*100.5*	*139.0*
Frank Robinson	**398.1**	302.4	69.6	105.5
Dave Winfield	**397.5**	339.7	38.7	74.9
Cal Ripken	**382.4**	351.6	50.6	85.2
Al Kaline	**380.5**	299.3	57.8	92.5
Alex Rodriguez	**373.8**	298.7	80.8	114.1
Ted Williams	**372.9**	249.9	102.6	135.5
Joe Morgan	**371.3**	293.3	87.0	119.3
Reggie Jackson	**370.2**	295.9	58.7	92.6
Derek Jeter	**367.6**	323.1	60.6	93.7
Robin Yount	**366.6**	345.7	33.9	67.8
Paul Waner	***363.0***	*303.9*	*34.5*	*70.5*
Albert Pujols	**359.8**	267.3	72.9	105.2
Adrian Beltre	**358.5**	318.3	35.6	68.4
Craig Biggio	**357.6**	325.5	34.5	67.4
Roberto Clemente	**356.8**	295.3	36.5	69.3
Nolan Ryan	**354.9**	329.7	37.1	78.2
Mickey Mantle	**354.3**	227.2	111.5	141.6
Brooks Robinson	**352.3**	310.4	32.3	65.2
Warren Spahn	**351.6**	294.9	70.6	110.2
Andre Dawson	**350.6**	310.0	23.5	55.3
Lou Brock	**347.5**	328.6	-8.2	25.0
Eddie Murray	**346.6**	285.3	39.1	70.7
Gary Sheffield	**343.2**	288.0	41.0	72.4
Ken Griffey Jr.	**342.2**	297.2	39.9	70.9
Mike Schmidt	**338.3**	257.6	70.5	98.7
Chipper Jones	**336.2**	257.6	69.6	98.3
Steve Carlton	**335.8**	305.9	47.8	83.8
Al Simmons	***335.2***	*264.2*	*54.7*	*86.5*
Goose Goslin	***335.1***	*292.9*	*23.0*	*56.2*
Ozzie Smith	**333.3**	312.4	37.4	67.7
Billy Williams	**332.1**	278.1	30.1	60.9
Carlos Beltran	**331.4**	290.0	34.6	65.4
Dwight Evans	**329.9**	272.0	46.0	75.3
Luis Aparicio	**329.8**	328.1	20.0	52.9
Phil Niekro	**329.4**	323.0	23.9	62.1
George Brett	**327.6**	275.9	43.8	73.7
Greg Maddux	**327.2**	271.9	78.2	114.0
Frankie Frisch	***327.0***	*278.0*	*51.6*	*83.6*
Vada Pinson	**325.5**	297.5	8.4	39.4
Rusty Staub	**324.9**	305.8	-0.6	31.7
Luke Appling	***323.6***	*306.9*	*23.3*	*56.8*
Eddie Mathews	**321.0**	241.4	70.0	98.9
Omar Vizquel	**320.1**	337.6	-0.5	31.0
Manny Ramirez	**320.0**	247.6	60.1	88.5
Tony Gwynn	**319.5**	286.2	13.1	41.8
Don Sutton	**318.8**	297.5	36.8	72.3
Luis González	**318.7**	290.0	10.8	40.3
Roger Clemens	**317.0**	228.7	94.0	129.3
Paul Molitor	**316.8**	273.3	37.8	69.7
Sammy Sosa	**316.7**	277.6	20.6	49.9
Gaylord Perry	**315.7**	290.5	36.3	72.9

Player	pWins	pLosses	pWOPA	pWORL
Dave Parker	**315.6**	273.4	24.5	53.7
Tim Raines	**315.4**	273.2	27.9	56.2
Ichiro Suzuki	**312.4**	302.4	-1.1	28.6
Roberto Alomar	**312.1**	282.9	36.0	64.8
Steve Finley	**310.8**	289.0	14.3	43.3
Ernie Banks	**310.4**	279.4	22.2	52.2
Bobby Abreu	**309.5**	264.1	30.2	58.2
Graig Nettles	**309.3**	270.9	32.7	60.9
Rafael Palmeiro	**309.0**	267.3	19.4	48.8
Charlie Gehringer	***308.9***	*265.5*	*47.4*	*78.2*
Lou Gehrig	***308.7***	*186.8*	*99.9*	*126.3*
Enos Slaughter	**307.7**	251.6	39.7	69.8
Early Wynn	**307.3**	285.7	34.3	70.3
Willie Davis	**307.2**	274.7	16.0	44.8
Tom Seaver	**307.0**	258.4	63.3	95.3
Tony Pérez	**306.9**	255.9	31.6	59.5
Torii Hunter	**305.7**	289.8	11.8	40.6
Lou Whitaker	**303.5**	262.2	51.3	78.0
Darrell Evans	**303.4**	259.3	31.7	59.2
Jeff Kent	**301.2**	266.0	36.0	63.4
Harmon Killebrew	**301.0**	234.8	46.9	74.1
Miguel Cabrera	**300.3**	243.1	43.6	69.9
Pee Wee Reese	**300.1**	239.4	67.8	96.5

[*] *Play-by-play data are missing for many games prior to 1932. For those players for whom Retrosheet is missing games in these seasons, player records are extrapolated based on the games for which Retrosheet has data. Players whose records include some extrapolated games are shown in italics above.*

Accumulating 300 pWins is certainly an accomplishment. But it's fairly clear looking at the above list that the list of the top players in pWins is not necessarily a list of the best players, period. For example, Rusty Staub was (slightly) below (positional) average over the course of his career.

Don't get me wrong: Rusty Staub had a fine, noteworthy major-league career. But did he have a better career than, say, 5-time Cy Young winner Randy Johnson, who "only" amassed 279.9 pWins in his illustrious career?

Comparing Players across Positions: pWins over Positional Average (pWOPA)

Player won-lost records are an excellent overall measure of player value. When context and the effects of teammates are controlled for, Player won-lost records can also, in my opinion, serve as an excellent starting point for measuring player talent. As a means of comparing players who play different positions, however, raw Player won-lost records are not necessarily an ideal comparative tool.

In constructing Player wins and losses, all events are measured against expected, or average, results across the event. Because of this, fielding Player won-lost records are constructed such that aggregate winning percentages are 0.500 for all fielding positions. Hence, one can say that a shortstop with a defensive winning percentage of 0.475 was a below-average defensive shortstop and a first baseman with a defensive winning percentage of 0.510 was an above-average defensive first baseman, but there is no basis for determining which of these two players was a better fielder - the below-average fielder at the more difficult position or the above-average fielder at the easier position.

From an offensive perspective, batting Player won-lost records are constructed by comparing across all batters, not simply batters who share the same fielding position. In the National League, this means that offensive comparisons include pitcher hitting, so that, on average, non-pitcher hitters will be slightly above average in the National League, while, of course, because of the DH rule, the average non-pitcher hitter will define the average in the American League.

In order to compare players across positions, it is therefore necessary to normalize players' records relative to an average player at the position(s) a player played. Positional averages are discussed in considerably more detail in Appendix 2.

The top 50 players in career pWOPA over the Retrosheet Era (1918 - 2019) are shown in the table below.

Top 50 Players in pWins over Positional Average*

	Player	pWins	pLosses	pWOPA	pWORL
1	*Babe Ruth*	*447.0*	*257.1*	***173.4***	*211.7*
2	Barry Bonds	466.8	310.6	**137.2**	174.7
3	Willie Mays	465.0	329.8	**114.6**	155.0
4	Mickey Mantle	354.3	227.2	**111.5**	141.6
5	Ted Williams	372.9	249.9	**102.6**	135.5
6	*Mel Ott*	*419.7*	*297.0*	***100.5***	*139.0*
7	*Lou Gehrig*	*308.7*	*186.8*	***99.9***	*126.3*
8	Hank Aaron	496.8	369.2	**97.7**	141.8
9	Roger Clemens	317.0	228.7	**94.0**	129.3
10	Stan Musial	423.7	310.4	**88.8**	127.6
11	Joe Morgan	371.3	293.3	**87.0**	119.3
12	Joe DiMaggio	287.4	193.1	**85.3**	110.8
13	*Lefty Grove*	*265.7*	*191.0*	***82.4***	*112.3*
14	Alex Rodriguez	373.8	298.7	**80.8**	114.1
15	*Jimmie Foxx*	*299.8*	*199.9*	***79.8***	*106.8*
16	Greg Maddux	327.2	271.9	**78.2**	114.0
17	Albert Pujols	359.8	267.3	**72.9**	105.2
18	Warren Spahn	351.6	294.9	**70.6**	110.2
19	Mike Schmidt	338.3	257.6	**70.5**	98.7
20	Eddie Mathews	321.0	241.4	**70.0**	98.9
21	Frank Robinson	398.1	302.4	**69.6**	105.5
22	Chipper Jones	336.2	257.6	**69.6**	98.3
23	Randy Johnson	279.9	221.0	**69.5**	101.4
24	Pee Wee Reese	300.1	239.4	**67.8**	96.5
25	*Rogers Hornsby*	*290.9*	*223.2*	***67.6***	*94.7*
26	Yogi Berra	246.3	182.5	**65.7**	88.4
27	Tom Seaver	307.0	258.4	**63.3**	95.3
28	Rickey Henderson	428.1	350.2	**62.6**	100.1
29	Pedro Martínez	192.5	137.8	**62.4**	83.9
30	Mariano Rivera	125.9	61.1	**61.9**	81.3
31	Derek Jeter	367.6	323.1	**60.6**	93.7
32	Jim Palmer	241.6	186.3	**60.3**	86.2
33	Manny Ramirez	320.0	247.6	**60.1**	88.5
34	Reggie Jackson	370.2	295.9	**58.7**	92.6
35	Duke Snider	270.3	199.3	**58.3**	83.2
36	Al Kaline	380.5	299.3	**57.8**	92.5
37	Bob Gibson	262.5	218.7	**56.4**	84.6
38	Juan Marichal	231.0	188.2	**55.0**	79.5
39	*Al Simmons*	*335.2*	*264.2*	***54.7***	*86.5*
40	Mike Trout	178.0	122.3	**54.2**	68.8
41	Clayton Kershaw	155.9	114.3	**53.4**	69.6
42	Whitey Ford	209.4	164.7	**53.2**	76.3
43	Willie McCovey	296.5	220.4	**52.7**	78.5
44	Arky Vaughan	269.6	221.3	**52.3**	78.4
45	Mike Mussina	223.2	174.0	**52.1**	78.6
46	Barry Larkin	291.5	249.5	**51.8**	77.9
47	David Ortiz	250.9	189.0	**51.8**	80.9
48	*Frankie Frisch*	*327.0*	*278.0*	***51.6***	*83.6*
49	Jackie Robinson	195.6	140.6	**51.6**	69.5
50	*Bill Dickey*	*187.2*	*141.5*	***51.5***	*69.3*

**Player records are extrapolated for some missing games for players in italics.*

pWins over Replacement Level: pWORL

Replacement Level is the level of performance which a team should be able to get from a player who the team can find easily on short notice - such as a minor-league call-up or a veteran waiver-wire pickup. The theory here is that major-league baseball players only have value to a team above and beyond what the team could get from basically pulling players off the street. That is, there's no real marginal value to having a third baseman make routine plays that anybody who's capable of playing third base at the high school or college level could make, since if a major-league team were to lose its starting third baseman, they would fill the position with somebody and that somebody would, in fact, make at least those routine plays at third base. This is similar to the economic concept of Opportunity Cost.

For my work, I define Replacement Level as equal to a winning percentage one weighted standard deviation below Positional Average, with separate standard deviations calculated for pitchers and non-pitchers. Unique standard deviations are calculated in this way for each year. These standard deviations are then applied to the unique Positional Averages of each individual player. Overall, this works out to an average Replacement Level of about 0.443 (0.450 for non-pitchers, and 0.429 for pitchers). A team of 0.443 players would have an expected winning percentage of 0.328 (53 - 109 over a 162-game season).

The top 50 players in career pWORL over the Retrosheet Era (1918 - 2019) are shown in the table below.

Top 50 Players in pWins over Replacement Level*

	Player	pWins	pLosses	pWOPA	pWORL
1	*Babe Ruth*	*447.0*	*257.1*	*173.4*	***211.7***
2	Barry Bonds	466.8	310.6	137.2	**174.7**
3	Willie Mays	465.0	329.8	114.6	**155.0**
4	Hank Aaron	496.8	369.2	97.7	**141.8**
5	Mickey Mantle	354.3	227.2	111.5	**141.6**
6	*Mel Ott*	*419.7*	*297.0*	*100.5*	***139.0***
7	Ted Williams	372.9	249.9	102.6	**135.5**
8	Roger Clemens	317.0	228.7	94.0	**129.3**
9	Stan Musial	423.7	310.4	88.8	**127.6**
10	*Lou Gehrig*	*308.7*	*186.8*	*99.9*	***126.3***
11	Joe Morgan	371.3	293.3	87.0	**119.3**
12	Alex Rodriguez	373.8	298.7	80.8	**114.1**
13	Greg Maddux	327.2	271.9	78.2	**114.0**
14	*Lefty Grove*	*265.7*	*191.0*	*82.4*	***112.3***
15	Joe DiMaggio	287.4	193.1	85.3	**110.8**
16	Warren Spahn	351.6	294.9	70.6	**110.2**
17	*Jimmie Foxx*	*299.8*	*199.9*	*79.8*	***106.8***
18	Frank Robinson	398.1	302.4	69.6	**105.5**
19	Albert Pujols	359.8	267.3	72.9	**105.2**
20	Randy Johnson	279.9	221.0	69.5	**101.4**
21	Rickey Henderson	428.1	350.2	62.6	**100.1**
22	Eddie Mathews	321.0	241.4	70.0	**98.9**
23	Mike Schmidt	338.3	257.6	70.5	**98.7**
24	Chipper Jones	336.2	257.6	69.6	**98.3**
25	Pee Wee Reese	300.1	239.4	67.8	**96.5**
26	Tom Seaver	307.0	258.4	63.3	**95.3**
27	*Rogers Hornsby*	*290.9*	*223.2*	*67.6*	***94.7***
28	Derek Jeter	367.6	323.1	60.6	**93.7**
29	Reggie Jackson	370.2	295.9	58.7	**92.6**
30	Al Kaline	380.5	299.3	57.8	**92.5**
31	Manny Ramirez	320.0	247.6	60.1	**88.5**
32	Yogi Berra	246.3	182.5	65.7	**88.4**
33	*Al Simmons*	*335.2*	*264.2*	*54.7*	***86.5***
34	Jim Palmer	241.6	186.3	60.3	**86.2**
35	Carl Yastrzemski	430.6	360.1	45.3	**85.3**
36	Cal Ripken	382.4	351.6	50.6	**85.2**
37	Bob Gibson	262.5	218.7	56.4	**84.6**
38	Pedro Martínez	192.5	137.8	62.4	**83.9**
39	Steve Carlton	335.8	305.9	47.8	**83.8**
40	*Frankie Frisch*	*327.0*	*278.0*	*51.6*	***83.6***
41	Duke Snider	270.3	199.3	58.3	**83.2**
42	Mariano Rivera	125.9	61.1	61.9	**81.3**
43	David Ortiz	250.9	189.0	51.8	**80.9**
44	Juan Marichal	231.0	188.2	55.0	**79.5**
45	Mike Mussina	223.2	174.0	52.1	**78.6**
46	Willie McCovey	296.5	220.4	52.7	**78.5**
47	Arky Vaughan	269.6	221.3	52.3	**78.4**
48	*Charlie Gehringer*	*308.9*	*265.5*	*47.4*	***78.2***
49	Nolan Ryan	354.9	329.7	37.1	**78.2**
50	Lou Whitaker	303.5	262.2	51.3	**78.0**

**Player records are extrapolated for some missing games for players in italics.*

Contextual Factors

As explained above, I calculate two measures of Player won-lost records: (pWins & pLosses) and (eWins & eLosses). Comparing the results for these two sets of Player records, it is possible to isolate and identify the specific contextual factors that affect how player performance translates into team wins.

My ***pWins and pLosses*** are tied to team wins: the players on a team earn a total of two pWins and one pLoss in every team win, and one pWin and two pLosses in every team loss. These records are highly contextual. That is, hitting a grand slam with two outs in the bottom of the ninth inning with your team trailing by three runs will earn more pWins than hitting a solo home run leading off the top of the 8th inning with your team trailing 13-1. Positive events that contribute to wins are more valuable than positive events that end up going for naught in team losses. I believe that a good case can be made that pWins and pLosses do the best possible job of truly capturing player value - which is an inevitable function of the context in which it occurs. Nevertheless, calculating Player wins and losses in this way leads to player value being due, at least in part, to factors outside of a player's control: the quality of his teammates, the timing of his performance.

Because of this, I also calculate a set of Player won-lost records which attempt to control for the quality of a player's teammates and the context in which he performed. I call these expected Player won-lost records, or ***eWins and eLosses***.

Most sabermetric measures - e.g., Linear Weights, bWAR, fWAR, WARP, et al. - are designed to be context-neutral, and are therefore most comparable to my eWins and eLosses. Bill James's Win Shares do tie to team wins, but the linkage of team wins to player Win Shares is done via an across-the-board adjustment based on end-of-season data, rather than linking to team wins on a game-by-game basis, like my pWins and pLosses. Context does come into play for some subsets of players for some statistics. For example, both Baseball-Reference and Fangraphs incorporate leverage into their WAR statistics for relief pitchers.

There are two ways in which context-dependent player wins might differ from context-neutral player wins, which I call "context" and "win adjustments".

Context refers to the importance of a specific play in terms of determining team victories relative to a play of average importance. Differences in context will affect the total number of player decisions, so that, for example, a player who performed in an above-average context (>1) will earn more context-dependent player decisions than context-neutral player decisions.

Win Adjustments measure differences in a player's player winning percentage across different situations, i.e., the increase in a team's probability of victory relative to the average increase in win probability associated with a particular event. So, for example, a player who hits better in the clutch than at other times may have a higher winning percentage when measured using pWins and pLosses than based on eWins and eLosses. The player's "win adjustment" would be the difference between these two winning percentages.

Context and Win Adjustments can both differ across two dimensions: inter-game or intra-game.

Inter-game refers to differences in the relative importance of situations within a single game.

Intra-game refers to differences in the relative importance of situations across different games.

After calculating pWins and pLosses, which tie to team wins and losses, I also calculate a set of expected wins (eWins) and expected losses (eLosses). For eWins and eLosses, I replace the actual context and win adjustments with ***expected*** context and ***expected*** win adjustment.

In my original version of Player won-lost records, I calculated expected context based on the positions played by a player, assigning a single expected context to all starting pitchers and a separate single expected context to all relief pitchers. I also introduced expected contexts for pinch hitting and pinch running. For all other players, I set expected context equal to 1.0. In fact, however, using a constant context for all relief pitchers ends up applying the same context to closers, set-up men, and mop-up men. But, in fact, part of the value of an elite relief pitcher is the fact that such a player's manager is able to utilize him at the most advantageous time(s) within a game. As for non-pitchers, while it is true that there is little correlation between expected context and one's fielding position, there are correlations which do tie to a player's own ability. For example, average context varies (somewhat) by lineup position - batters who bat higher in the lineup tend to perform in a slightly higher average context than batters who bat lower in the lineup. But where one bats in the lineup is not entirely random: better hitters tend to bat higher in the lineup; hence, better hitters tend to perform in a somewhat higher context on average.

To more accurately account for these factors, I have changed my approach and now set expected context equal to actual context for all players. This means that a player's total pDecisions (pWins plus pLosses) will equal his eDecisions (eWins plus eLosses), by construction. Differences between pWins and eWins, then, are entirely due to differences between the player's actual win adjustment and his expected win adjustment.

Expected win adjustments are not equal to zero, but are, instead, a function of a player's winning percentage. There is a moderate positive correlation between a player's winning percentage - i.e., eWins / (eWins + eLosses) - and his win adjustment due to the somewhat non-linear relationship between player wins and team wins. This correlation is reflected in the expected win adjustment used to construct player eWins and eLosses. The choice between ***pWins*** and ***eWins*** will likely depend on one's purposes in putting together a list. One could think of ***pWins*** as measuring what actually happened, while ***eWins*** perhaps measure what *should have* happened. Personally, I think both of these measures provide us with useful and interesting information.

The top 50 players in eWins over positional average and replacement level (eWOPA and eWORL) are shown on the next two pages.

Top 50 Players in eWins over Positional Average*

	Player	eWins	eLosses	eWOPA	eWORL
1	*Babe Ruth*	*432.7*	*271.4*	***143.7***	*182.0*
2	Barry Bonds	462.8	314.6	**127.8**	165.3
3	*Mel Ott*	*419.5*	*297.2*	***100.8***	*139.3*
4	Ted Williams	371.0	251.9	**99.7**	132.7
5	Mickey Mantle	346.7	234.8	**96.3**	126.4
6	Willie Mays	455.2	339.6	**94.9**	135.3
7	Roger Clemens	314.9	230.8	**90.0**	125.3
8	Hank Aaron	491.3	374.6	**87.4**	131.5
9	Greg Maddux	329.1	270.0	**85.1**	120.9
10	Joe Morgan	368.6	296.0	**81.1**	113.4
11	*Lou Gehrig*	*298.8*	*196.7*	***80.3***	*106.8*
12	Alex Rodriguez	373.2	299.2	**79.7**	113.1
13	*Rogers Hornsby*	*295.6*	*218.5*	***77.5***	*104.7*
14	Mike Schmidt	340.9	255.0	**76.5**	104.7
15	Stan Musial	416.8	317.3	**74.9**	113.7
16	*Jimmie Foxx*	*294.7*	*205.0*	***68.9***	*95.9*
17	Frank Robinson	396.4	304.0	**66.6**	102.4
18	Randy Johnson	276.4	224.4	**63.8**	95.8
19	Eddie Mathews	318.2	244.3	**63.7**	92.6
20	Rickey Henderson	427.9	350.4	**62.9**	100.5
21	Pedro Martínez	191.6	138.6	**61.3**	82.9
22	Joe DiMaggio	275.2	205.4	**61.3**	86.8
23	Albert Pujols	352.9	274.2	**58.3**	90.7
24	*Lefty Grove*	*251.5*	*205.2*	***57.8***	*87.7*
25	Warren Spahn	343.6	303.0	**57.5**	97.1
26	Chipper Jones	329.2	264.5	**55.5**	84.2
27	Mike Trout	178.3	122.0	**54.5**	69.1
28	*Charlie Gehringer*	*312.7*	*261.8*	***54.4***	*85.2*
29	Arky Vaughan	269.8	221.1	**53.2**	79.2
30	Bob Gibson	259.9	221.4	**53.0**	81.2
31	Jim Thome	274.8	208.5	**52.7**	79.3
32	Kevin Brown	206.2	162.7	**52.5**	75.8
33	Al Kaline	377.7	302.0	**52.2**	86.9
34	Tom Seaver	300.5	264.9	**52.1**	84.1
35	Johnny Mize	222.0	155.7	**51.6**	71.9
36	Manny Ramirez	315.5	252.2	**51.5**	79.9
37	Cal Ripken	382.6	351.4	**51.1**	85.8
38	Frank Thomas	254.6	189.7	**51.1**	77.1
39	Mike Mussina	222.1	175.1	**50.2**	76.8
40	Clayton Kershaw	153.3	117.0	**49.3**	65.5
41	Gaylord Perry	320.4	285.9	**49.2**	85.8
42	John Smoltz	237.4	203.3	**49.1**	77.2
43	Reggie Jackson	365.0	301.1	**48.6**	82.6
44	Mark McGwire	220.8	158.4	**47.4**	65.6
45	Mike Piazza	214.3	173.0	**47.3**	66.8
46	Johnny Bench	245.2	199.0	**47.2**	68.9
47	Jeff Bagwell	275.0	203.7	**46.8**	70.2
48	Duke Snider	264.4	205.2	**46.7**	71.7
49	Ken Griffey Jr.	345.7	293.7	**46.6**	77.6
50	Harmon Killebrew	300.8	235.1	**46.5**	73.6

**Player records are extrapolated for some missing games for players in italics.*

Top 50 Players in eWins over Replacement Level*

	Player	eWins	eLosses	eWOPA	eWORL
1	*Babe Ruth*	*432.7*	*271.4*	*143.7*	***182.0***
2	Barry Bonds	462.8	314.6	127.8	**165.3**
3	*Mel Ott*	*419.5*	*297.2*	*100.8*	***139.3***
4	Willie Mays	455.2	339.6	94.9	**135.3**
5	Ted Williams	371.0	251.9	99.7	**132.7**
6	Hank Aaron	491.3	374.6	87.4	**131.5**
7	Mickey Mantle	346.7	234.8	96.3	**126.4**
8	Roger Clemens	314.9	230.8	90.0	**125.3**
9	Greg Maddux	329.1	270.0	85.1	**120.9**
10	Stan Musial	416.8	317.3	74.9	**113.7**
11	Joe Morgan	368.6	296.0	81.1	**113.4**
12	Alex Rodriguez	373.2	299.2	79.7	**113.1**
13	*Lou Gehrig*	*298.8*	*196.7*	*80.3*	***106.8***
14	Mike Schmidt	340.9	255.0	76.5	**104.7**
15	*Rogers Hornsby*	*295.6*	*218.5*	*77.5*	***104.7***
16	Frank Robinson	396.4	304.0	66.6	**102.4**
17	Rickey Henderson	427.9	350.4	62.9	**100.5**
18	Warren Spahn	343.6	303.0	57.5	**97.1**
19	*Jimmie Foxx*	*294.7*	*205.0*	*68.9*	***95.9***
20	Randy Johnson	276.4	224.4	63.8	**95.8**
21	Eddie Mathews	318.2	244.3	63.7	**92.6**
22	Albert Pujols	352.9	274.2	58.3	**90.7**
23	*Lefty Grove*	*251.5*	*205.2*	*57.8*	***87.7***
24	Al Kaline	377.7	302.0	52.2	**86.9**
25	Joe DiMaggio	275.2	205.4	61.3	**86.8**
26	Gaylord Perry	320.4	285.9	49.2	**85.8**
27	Cal Ripken	382.6	351.4	51.1	**85.8**
28	*Charlie Gehringer*	*312.7*	*261.8*	*54.4*	***85.2***
29	Chipper Jones	329.2	264.5	55.5	**84.2**
30	Tom Seaver	300.5	264.9	52.1	**84.1**
31	Pedro Martínez	191.6	138.6	61.3	**82.9**
32	Reggie Jackson	365.0	301.1	48.6	**82.6**
33	Bob Gibson	259.9	221.4	53.0	**81.2**
34	Carl Yastrzemski	427.9	362.7	40.7	**80.8**
35	Manny Ramirez	315.5	252.2	51.5	**79.9**
36	Nolan Ryan	354.8	329.9	38.8	**79.9**
37	Jim Thome	274.8	208.5	52.7	**79.3**
38	Arky Vaughan	269.8	221.1	53.2	**79.2**
39	Ken Griffey Jr.	345.7	293.7	46.6	**77.6**
40	John Smoltz	237.4	203.3	49.1	**77.2**
41	Frank Thomas	254.6	189.7	51.1	**77.1**
42	Mike Mussina	222.1	175.1	50.2	**76.8**
43	Kevin Brown	206.2	162.7	52.5	**75.8**
44	Harmon Killebrew	300.8	235.1	46.5	**73.6**
45	Bert Blyleven	292.0	259.0	40.0	**73.5**
46	Steve Carlton	329.1	312.6	37.1	**73.1**
47	*Joe Cronin*	*290.1*	*254.9*	*42.9*	***72.3***
48	Willie Stargell	295.9	230.2	46.1	**72.0**
49	Gary Sheffield	342.9	288.3	40.5	**71.9**
50	Johnny Mize	222.0	155.7	51.6	**71.9**

**Player records are extrapolated for some missing games for players in italics.*

Components of Player Wins and Losses

Player wins and losses are calculated using a nine-step process, each step of which assumes average performance in all subsequent steps. Each step of the process is associated with a Component of Player wins and losses (player decisions). These nine components are outlined briefly below. There are four basic positions from which a player can contribute toward his baseball team's probability of winning: Batter, Baserunner, Pitcher, and Fielder. Player decisions are allocated to each of these four positions, as appropriate, within each of the following nine components.

Component 1: Basestealing

Player decisions are assessed to baserunners, pitchers, and catchers for stolen bases, caught stealing, pickoffs, and balks.

Component 2: Wild Pitches and Passed Balls

Player decisions are assessed to baserunners, pitchers, and catchers for wild pitches and passed balls.

Component 3: Balls not in Play

Player decisions are assessed to batters and pitchers for plate appearances that do not involve the batter putting the ball in play: i.e., strikeouts, walks, and hit-by-pitches.

Component 4: Balls in Play

Player decisions are assessed to batters and pitchers on balls that are put in play, including home runs, based on how and where the ball is hit.

Component 5: Hits versus Outs on Balls in Play

Player decisions are assessed to batters, pitchers, and fielders on balls in play, based on whether they are converted into outs or not.

Component 6: Singles versus Doubles versus Triples

Player decisions are assessed to batters, pitchers, and fielders on hits in play, based on whether the hit becomes a single, a double, or a triple.

Component 7: Double Plays

Player decisions are assessed to batters, baserunners, pitchers, and fielders on ground-ball outs in double-play situations, based on whether the batter grounds into a double play or not.

Component 8: Baserunner Outs

Player decisions are assessed to batters, baserunners, and fielders based on baserunner outs.

Component 9: Baserunner Advancements

Player decisions are assessed to batters, baserunners, and fielders based on how many bases, if any, baserunners advance on balls in play.

For components where Player decisions are shared across multiple players (e.g., pitchers and fielders in Component 5), I divide credit between players based on the extent to which player winning percentages within the particular component persist over time.

The distribution of Player wins and losses by component varies across seasons and across leagues, depending on the exact distribution of plays. The average distribution of player decisions by component across all seasons for which I have calculated Player won-lost records is as follows.

Breakdowns of Player Game Points by Component: 1918 - 2019
Distribution of Player Decisions

		Percent of Offensive/Defensive Component Decisions Allocated to Player Decisions			
		Offense		Defense	
	Total	Batters	Baserunners	Pitchers	Fielders
Component 1: Stolen Bases, etc.	2.2%	0.0%	100.0%	50.4%	49.6%
Component 2: Wild Pitches, Passed Balls	1.3%	0.0%	100.0%	73.2%	26.8%
Component 3: Balls Not in Play	14.7%	100.0%	0.0%	100.0%	0.0%
Component 4: Balls in Play	34.7%	100.0%	0.0%	100.0%	0.0%
Component 5: Hit vs. Out	33.1%	100.0%	0.0%	28.9%	71.1%
Component 6: Single v. Double v. Triple	3.5%	100.0%	0.0%	27.0%	73.0%
Component 7: Double Plays	2.2%	86.7%	13.3%	16.8%	83.2%
Component 8: Baserunner Outs	2.3%	40.5%	59.5%	0.0%	100.0%
Component 9: Baserunner Advancements	6.0%	47.3%	52.7%	0.0%	100.0%
Total Decisions (Offense / Defense)		**91.7%**	**8.3%**	**62.4%**	**37.6%**
Total Player Decisions		**45.8%**	**4.2%**	**31.2%**	**18.8%**

The breakdown of fielding wins and losses (on balls in play) by component by fielding position are summarized below.

	Percent of Component Decisions by Fielder								
	P	C	1B	2B	3B	SS	LF	CF	RF
Comp. 5	5.7%	1.1%	7.1%	15.3%	15.5%	18.2%	12.4%	12.3%	12.4%
Comp. 6	1.4%	0.0%	0.0%	0.4%	2.1%	0.3%	41.2%	22.7%	31.8%
Comp. 7	0.9%	1.4%	6.7%	47.6%	1.1%	42.4%	0.0%	0.0%	0.0%
Comp. 8	2.4%	1.0%	5.1%	6.1%	4.1%	5.6%	25.6%	23.0%	27.3%
Comp. 9	6.9%	1.2%	5.4%	7.3%	8.2%	9.1%	19.9%	21.3%	20.6%
Total	**5.1%**	**1.0%**	**6.2%**	**14.0%**	**11.9%**	**15.9%**	**15.9%**	**14.6%**	**15.4%**

Pitcher numbers here represent only the "fielding" portion of the pitcher's credit, not the "pitching" portion of the credit.

Value vs. Talent

Sabermetricians often distinguish between two measures of player performance: value and true talent. My basic Player won-lost records, ***pWins and pLosses***, are purely the former, a value measure. Unfortunately, as anybody who has ever read an MVP debate knows, the word "value" can have different definitions to different people.

My definition of value would be this: *A player's value is his contributions to his team's on-field success*. Player value is a retrospective evaluation, which quantifies what happened in the past. True talent, on the other hand, is a prospective measure of expected performance, which predicts what will happen.

As I said, Player won-lost records are a measure of player value, by which I mean a player's (on-field) contributions to his team's on-field performance, measured in wins and losses. Value, defined in this way, is highly dependent on context. Several key types of context which affect player value include the following.

1. Run-Scoring Environment

Runs are more valuable in a lower run-scoring environment. Scoring one run is more likely to lead to winning in an environment where 1-0 victories are fairly common than in an environment where the average final score is 8-6. This is why Player won-lost records control for the run-scoring environment, both for the season and league in which the game took place as well as for the ballpark in which the game was played. The relationship between Player won-lost records and the run-scoring environment were explored in Chapter 2 of this book.

2. Timing of Events

The timing of events within a game can affect the value of those events. Hits which drive in runners on base can be viewed as more valuable than hits with the bases empty which do not produce runs. Home runs are more valuable in tie games than when the score is 15-0 (in either direction).

3. Retrospective Context

The value of a win is greater than the value of a loss. Retrospectively, one can argue that this means that the win value of an event is greater if it contributes to a win than if it contributes to a loss.

At this point, I must concede that value is ultimately subjective and, hence, my Player won-lost records are ultimately subjective. The main point of subjectivity is the value of a win versus the value of a loss. I value team wins at two pWins and one pLoss, and I value team losses at a pWin-pLoss record of 1-2. I explained and attempted to defend that choice earlier in this Appendix.

There is also some inherent subjectivity in the assignment of value to specific players. I have attempted to make these assignments as objectively as possible. Again, my choices in this respect were explained earlier in this Appendix. Note, however, that given the overall value of team wins and team losses, the total value for a team is fixed, which means that, to the extent one assigns too much value to one player on a team it must be at the expense of assigning too little value to one of his teammates.

Player won-lost records, as I calculate them, represent a complete accounting of all value accumulated within a major-league baseball game. Note that this means that "luck" has to be accounted

for somewhere, regardless of whether we think the accumulation of that "luck" was the result of any skill, whether any such skill "persists", or whether there is any predictive ability associated with such events.

Value versus True Talent

So, what is the difference between "value" and "true talent"? The key difference, as I see it, is that "value" can be directly observed, while "true talent" can only be inferred. Going one step farther, "true talent" can only be inferred from value. Hence, to my mind, measuring value is a necessary first step to being able to assess true talent.

Unfortunately, I think that too often there is confusion between value and true talent, where "true talent" measures make their way into what are intended to be "value" measures. For example, in his Win Shares system, Bill James increases the fielding Win Shares for third basemen if they played for a team with a below-average number of innings pitched by left-handed pitchers. The rationale for this is that left-handed pitchers allow more balls hit toward the third baseman (because LHP face more RHB).

I assume that this is true, but, even if it is true, that would simply mean that third basemen are less valuable with right-handed pitchers on the mound than with lefties pitching. This is also a good example of why a single-number value system can be misleading, although Bill James has corrected for this by adding Loss Shares to his Win Shares system.

Another example of a "value" system that slips in some "true talent" into its calculations is Fangraphs' calculation of WAR (Wins above Replacement). For pitchers, Fangraphs calculates WAR based on FIP (Fielding Independent Pitching). Rather than considering the actual number of runs allowed by a pitcher, FIP calculates how many runs a pitcher would be expected to allow given his walks, strikeouts, and home runs allowed. As such, FIP doesn't explain what did happen, it explains what would be expected to have happened.

Now, there's an argument to be made for using FIP and it's right there in the name: it controls for the fielders behind the pitcher. The fielders are then valued based on their fielding (using UZR). The problem is that UZR controls for the hardness of the balls-in-play, for the hit types, for the handedness of the pitcher and hitter, etc. In other words, for a bunch of things that are ***not*** captured in FIP - which leaves those things completely uncaptured. So, we are left with WAR measuring what we would have expected players to be worth, not what they really were worth.

So, What's the Point of Context-Neutral Wins and Losses (eWins, eLosses)?

So, if context is a necessary condition of measuring player value, then what is the point of the context-neutral wins and losses that I calculate, eWins and eLosses? By constructing wins and losses that are stripped of context, it becomes possible to distinguish the value of ***what*** players do (eWins, eLosses) from the value of ***when*** players do these things via the contextual factors that relate eWins and eLosses to pWins and pLosses.

In this way, value can be divided into its myriad sub-components, not simply batting versus baserunning versus pitching versus fielding, or basestealing versus baserunner outs versus baserunner advancement, but also inter-game context versus inter-game win adjustments versus the impact of one's teammates on one's fielding, etc. In this way, I believe that Player won-lost records can serve as something of the Platonic ideal of baseball statistics, with everything expressed in the same units - wins and losses - and with everything accounted for in a way which ties back perfectly to what actually happened on the baseball field.

Appendix 2: Comparing Players Using Baseball Player Won-Lost Records

The core calculation of Baseball Player won-lost records is pWins and pLosses. These are calculated play by play such that the total player decisions by a team are exactly three per game, two pWins and one pLoss for a winning team, one pWin and two pLosses for a losing team (teams earn 1.5 pWins and 1.5 pLosses in a tie game). Because the number of pWins and pLosses are known for certain at the team level, by construction, pWins and pLosses are a fairly objective calculation. If the exact pWins that I calculate for a specific player are not precisely correct, any mis-allocation of pWins will be confined to teammates within a specific game.

Given a set of pWins and pLosses, I then calculate a set of context-neutral Player won-lost records, eWins and eLosses. Oversimplifying, eWins for a given event are calculated by taking the average value of the pWins associated with the event over the course of the season. The precise calculation of pWins and eWins were described in more detail in Appendix 1.

Baseball Player won-lost records, pWins and pLosses, are, in my humble opinion, a perfect measure of player value. When context and the effects of teammates are controlled for, eWins and eLosses can also, in my opinion, serve as an excellent starting point for measuring player talent. But in order to make comparisons between players, it is necessary to make one additional calculation: positional averages.

- **Positional Averages**

In constructing Player won-lost records, all events are measured against expected, or average, results across the event. Because of this, fielding won-lost records are constructed such that aggregate winning percentages are 0.500 for all fielding positions. Hence, one can say that a shortstop with a defensive winning percentage of 0.475 was a below-average defensive shortstop and a first baseman with a defensive winning percentage of 0.510 was an above-average defensive first baseman, but there is no basis for determining which of these two players was a better fielder – the below-average fielder at the more difficult position or the above-average fielder at the easier position.

From an offensive perspective, batting won-lost records are constructed by comparing across all batters, not simply batters who share the same fielding position. In the National League, this means that offensive comparisons include pitcher hitting, so that, on average, non-pitcher hitters will be slightly above average in the National League, while because of the DH rule, the average non-pitcher hitter will define the average in the American League.

These are, in fact, two sides of the same coin. There is a clear negative correlation between the average offensive production at a defensive position and the importance and/or difficulty associated with playing that position. That is, players at the toughest defensive positions tend to be weaker hitters than players at easier defensive positions.

Bill James used this observation to define what he called the Defensive Spectrum:

1B – LF – RF – 3B – CF – 2B – SS – C

Positions get more difficult/valuable defensively moving left to right (e.g., shortstop is a more defensive position than second base) while offensive production increases moving right to left (e.g., on average, first basemen tend to out-hit left fielders).

When comparing, for example, a left fielder to a shortstop, one must somehow balance the fact that left fielders are expected to hit better than shortstops against the fact that shortstops are, on average, better defensive players than left fielders.

There are three ways to do this:

(1) One can adjust offensive Player won-lost records based on the defensive position of the player

(2) One can adjust defensive Player won-lost records based on the defensive position of the player

(3) One can adjust the baseline against which players are measured.

The problem with both (1) and (2) is that either of these approaches would be difficult, if not impossible, to incorporate within a system that tied directly to actual team wins and losses as is my goal here.

By process of elimination, then, I believe that the best choice is (3), measuring players against different baselines based on the position(s) which they played, what I call "positional averages".

In discussions of Player won-lost records with other people, particularly in discussions at the Hall of Merit at Baseballthinkfactory.org, there are significant differences of opinion as to the proper way to calculate and use positional averages. My hope is for Player won-lost records to be as widely accepted as possible. While I think it is important to take player position into account in evaluating players, the specific calculation of positional averages is not central to the calculation of Player won-lost records. It is also very important to me that Player won-lost records be understood as a set of numbers which can be used, interpreted, and analyzed differently by different people as those people see fit; not a single inscrutable number.

To facilitate this, I have modified the Player won-lost records on my website, so that positional averages can be selected by the user. To help users of the website better understand their choices, this appendix looks at positional averages over time.

- Positional Averages over Time

The next table summarizes positional averages by position across all seasons for which I have calculated Player won-lost records (1918 – 2019). The numbers here are (context-neutral, teammate-adjusted) offensive player winning percentages in non-DH leagues. The next-to-last row shows what I call a "DH-league adjustment", the difference between offensive winning percentages for position players in the NL versus the AL since 1973. The last row, then, shows the positional average for designated hitters (for those league-seasons for which the DH rule was in effect).

This table excludes fielding won-lost records, for which the average is exactly 0.500 at every position in every season by construction. This table also excludes the defensive contributions of pitchers which will be discussed later.

The first column shows the long-run positional averages across all seasons for which I have calculated Player won-lost records. The second column shows positional averages for the most recent season for which I have calculated Player won-lost records. The final two columns then show the minimum and maximum single-season positional averages by season. Obviously, the minimums and maximums at different positions occurred in different seasons.

	1918 - 2019	2019	Minimum	Maximum
Pitcher (Offense)	0.354	0.286	0.278	0.420
Catcher	0.492	0.488	0.470	0.508
First Base	0.532	0.520	0.504	0.546
Second Base	0.496	0.499	0.470	0.516
Third Base	0.511	0.520	0.480	0.524
Shortstop	0.487	0.510	0.456	0.510
Left Field	0.526	0.516	0.507	0.544
Center Field	0.517	0.504	0.499	0.530
Right Field	0.528	0.522	0.511	0.542
Pinch Hitter	0.479	0.486	0.458	0.501
Pinch Runner	0.502	0.514	0.410	0.579
DH-Adjustment	0.009	0.010	0.008	0.010
Designated Hitter	0.520	0.519	0.504	0.530

The long-run averages are generally consistent with the defensive spectrum as I outlined it earlier. Focusing on the eight non-pitching, fielding positions, the highest long-run positional average is at first base (0.532) followed relatively closely by the two corner outfield positions. The lowest positional averages are second base (0.496), catcher (0.492), and shortstop (0.487).

In 2019, however, the positional average at second base (0.499) was lower than at shortstop (0.510). I explore this specific relationship a bit later in this appendix.

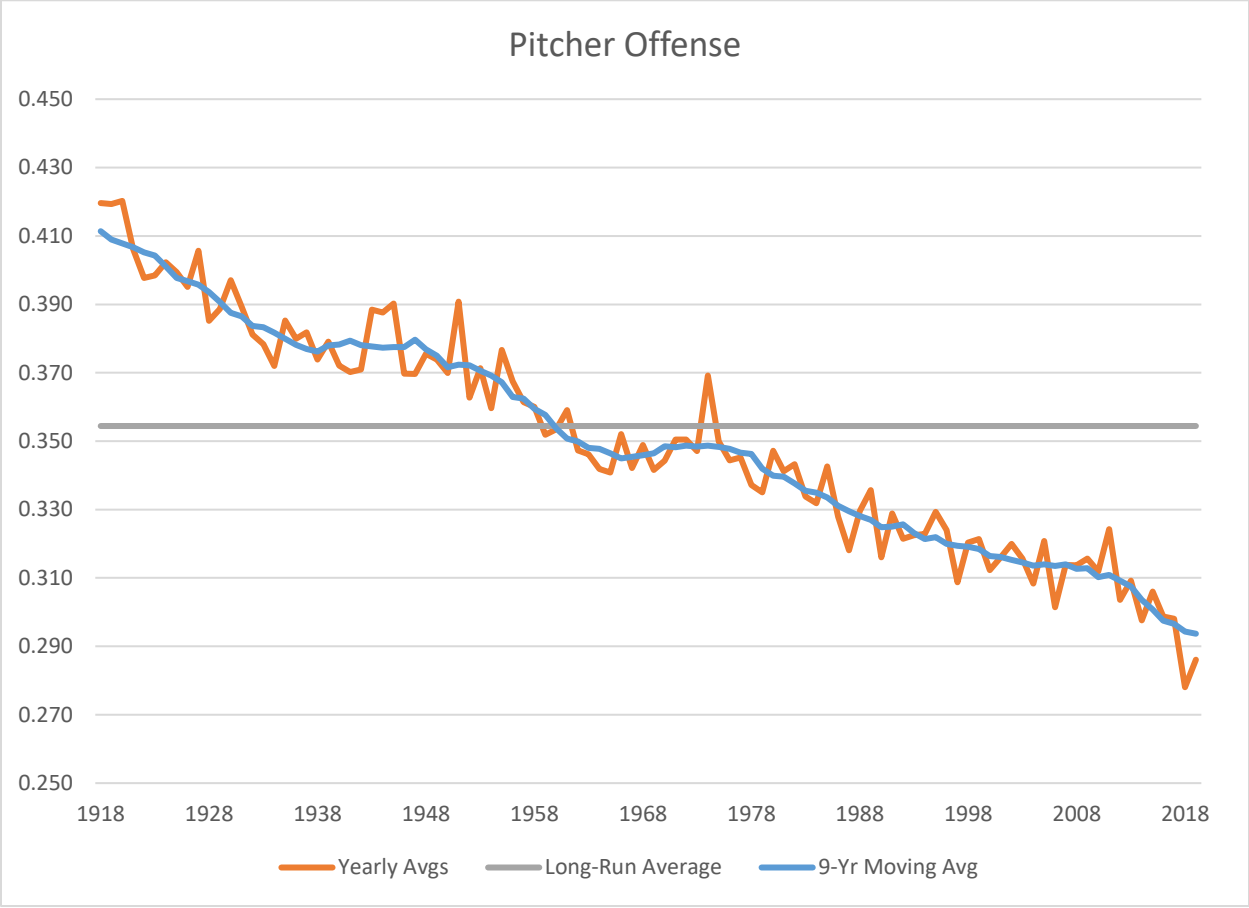
It is also interesting that, except for catcher (0.488 in 2019, 0.492 long-run), the 2019 positional averages tended to be more clustered, with first base and all three outfield positions lower than their long-run averages (but all still above 0.500) but the positional averages for second base, third base, and shortstop all higher than their long-run counterparts.

The next several pages take a closer look at the numbers by position. Rather than overwhelm you with a set of tables filled with eye-glazing numbers, let's break out some graphs.

- Pitcher Offense

The most obvious example of the need to allow positional averages to change over time is pitcher batting. In 1921, major-league pitchers batted a combined .212/.250/.274 which translated into a Player won-lost winning percentage of 0.406. In 2018, major-league pitchers batted a combined .115/.144/.149, which translated into a Player won-lost winning percentage of 0.278. I have calculated Player won-lost records for 102 seasons, 1918 through 2019. The highest positional average for pitcher offense was in the first of these seasons, 1918 (0.420). The lowest positional average for pitcher offense was in the next-to-last of these seasons, 2018.

Here is a graph of the positional average for pitcher offense for all 102 seasons for which I have calculated Player won-lost records. The solid gray horizontal line is the average across all 102 seasons. The orange line is the year-by-year positional average. The blue line is a 9-year moving positional average for the season, the four seasons before, and the four seasons after.



It is not a perfect downward trend, but it's pretty close. Major-league pitchers have gotten uniformly worse at hitting for (at least) the last 100 years.

There was a bit of a spike during World War II (the 3-year plateau just under 0.390 is 1943-45) and there have been a few one-year spikes that I can't really explain – 1951, 1974, 2011.

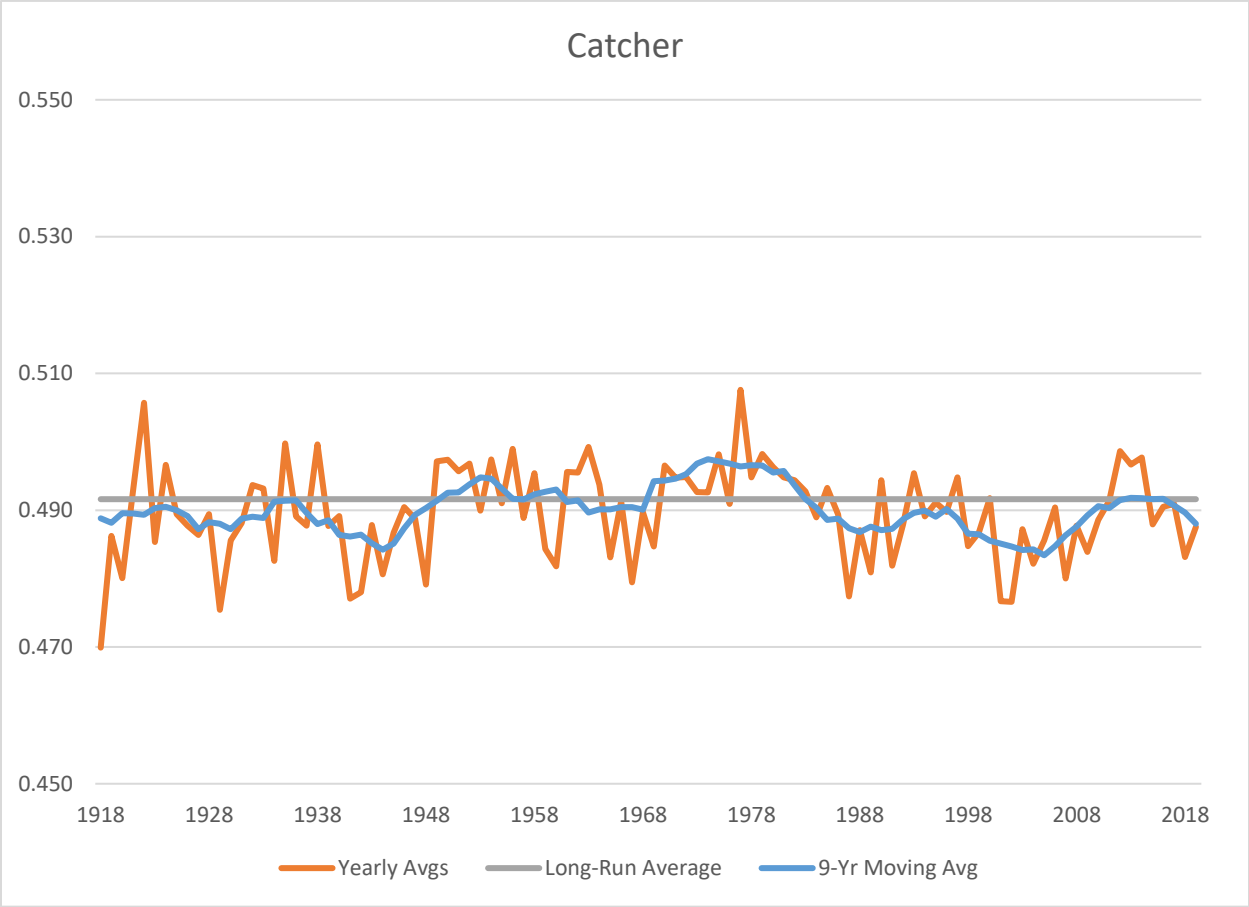
I have seen a couple of explanations for this trend. Bill James (and I think others) has speculated that pitcher hitting is a measure of the quality of play in major-league baseball. The premise is that, because pitchers are not selected for their hitting, the average quality of pitcher hitting is likely to remain constant over time. The fact that pitcher hitting has declined relative to overall offense can then be taken as evidence that the quality of major-league baseball has improved dramatically over the past 100 years. The spike in the above graph during World War II, when the quality of play in major-league baseball declined for a few years, is consistent with this hypothesis.

The other argument which I have seen posited is that the introduction of the DH rule – and its expansion to lower levels of baseball – has led to major-league pitchers being less experienced at hitting. Looking at the graph on the previous page, it is hard to say how much the trend since the introduction of the DH rule differs from what that trend might have looked like in the absence of such a rule. Just eyeballing the data, the decline in pitcher offense from, say, 1973 (0.347) to 2019 (0.286), a decline of approximately 0.0013 per year, is not meaningfully different from (and, in fact, slightly smaller than) the decline from, say, 1920 (0.420) to 1959 (0.352), which works out to 0.0018 per year.

On the other hand, one could look at the data here and hypothesize that the negative trend in pitcher offense had stopped by 1959 or so. The positional average for pitcher offense was 0.352 in 1959 and 0.347 in 1973, which is not very different. So, it could be that the decline through the 1950s is the result of the improving quality of major-league baseball while the decline since the mid-1970s is the result of the designated hitter rule.

Regardless, this is the clearest example of why one might not want to use a simple 100-year average to calculate positional averages for pitcher offense. The implication would be that the vast majority of pitchers in the 1920s and 1930s were above average while virtually all pitchers over the past two to three decades have been below average. That would seem to distort what I think most people are trying to accomplish in measuring "average".

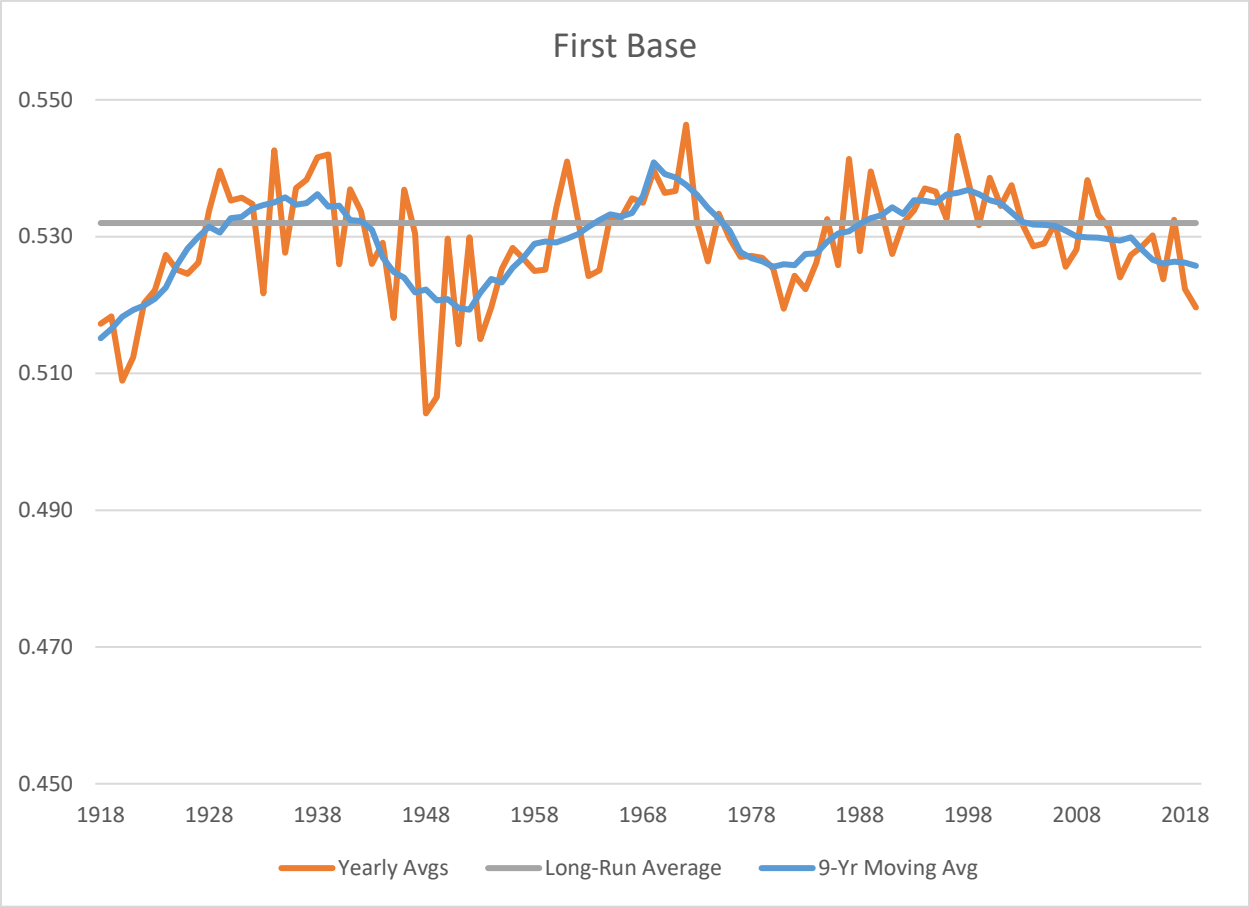
- Catcher



One quick note of explanation. The numbers here are for non-DH leagues. This is necessary because there were no DH leagues prior to 1973. But because of this, the combined positional average for non-pitchers is over 0.500. If you want to re-center things to 0.500, subtract approximately 0.009 (i.e., just less than one percent). So, in this case, the average positional average for catchers (the gray line) is 0.4916, which translates to 0.4824 in a DH league.

Certainly, there is nothing like the trend we saw in pitcher offense. In general, I don't really see a trend at all. Catcher positional averages tended to be above the historical average from about 1949 (0.497) through 1985 (0.493) although there were a number of down years within that time period. The recent three-year spike is 2012 – 2014, when positional averages were 0.499, 0.497, and 0.498, respectively. The average since 1986 (34 seasons) has been 0.488, which is virtually identical to the 102-year average of 0.492.

- First Base



First base has tended to have the highest positional average of any position through history. I have put the positional graphs here over the same scale, 0.450 to 0.550, so that, hopefully, you can visualize the positional averages relative to each other. There are two exceptions to this, the first and last of these. The first, pitcher offense, is on a lower scale because positional averages for pitcher offense have all been below 0.450. The last, pinch runners, I will explain when I get to it.

Anyway, a fair bit of variation, but no obvious trends. The results were much more erratic before the late 1950s. Positional averages were stronger for first basemen in the late 1920s and 1930s – the era of Lou Gehrig, Jimmie Foxx, Hank Greenberg, et al (average of 0.536 from 1928 – 1939). Positional averages tended to be below historical norms from 1948 through 1959 (average of 0.521 for these 12 seasons).

Using single-season positional averages, as I have done in the past, helps Gil Hodges look better in Player won-lost records, for example, as he gets credit for being the best first baseman of the 1950s.

There was something of a glut of quality first basemen from 1987 through 2002 (average of 0.535) with the positional average peaking at 0.545 in 1997.

Since 2002, the positional average dropped from 0.538 in 2002 to 0.532 in 2003 and held fairly steady – with some year-to-year variation – through 2011 (0.531). It hovered around an average of 0.527 from 2012 through 2018 before dipping to 0.520 in 2019. It is obviously too early to tell if 2019 was simply an anomalously low value or if it is indicative of a (subtle) shift in the defensive spectrum.

One thing I want to emphasize is that the numbers here are offense-only. The positional average for fielding is exactly 0.500 at every position in every season by construction. One possible explanation for some of the longer-term variation here (and at other positions) could be shifts in the fielding standards which are considered acceptable for a first baseman. One somewhat odd result I observed here is that the positional average for first basemen tends to be higher in more extreme run-scoring environments. The 1920s and 1930s, for example, had very high levels of run-scoring as did, of course, the mid-to-late 1990s and early 2000s, and both of these time periods saw above-average positional averages for first basemen. But, interestingly, there was also a spike in the positional average for first basemen from 1965 through 1972 (0.537) which was the time period with the lowest run scoring since the Deadball Era.

Overall, from 1918 through 2019, the average runs scored per 27 outs was around 4.76 (that is a simple average of the 102 annual averages). One can calculate a measure of how "extreme" run scoring is in a season by taking the absolute value of the difference between run scoring (per 27 outs) in a particular season and 4.76. The correlation between that measure and first base positional average over the full 102 years for which I have calculated Baseball Player won-lost records is 0.255 which is moderately strong.

What might this mean? Thinking about it, I have a hypothesis. In extreme run-scoring environments, it is most important for teams to have a slugger. In low-scoring environments, it's valuable to have a slugger because home runs become more valuable in an environment where it is difficult to string together hits. The surest way to score runs in a low-scoring environment is via the home run. In high-scoring environments, it is important to have as many good hitters as possible so that teams are, perhaps, more willing to find room for defensively-challenged sluggers. In each of these situations, the increase in the average offensive output of first basemen could logically be expected to coincide with a decrease in the average fielding ability of first basemen.

Seven-time Gold Glove winner Vic Power's last season was 1965; seven-time Gold Glove winner Bill White saw his playing time drop sharply in 1967 and 1968. In the high-run-scoring 1990s, Rafael Palmeiro infamously won a Gold Glove at first base in 1999 despite playing only 28 games at the position. Obviously, Palmeiro was a poor choice (that season), but the fact that he won suggests that there may not have been a particularly good choice.

But there is no direct mechanism for recognizing that the average defensive first baseman in 1999 was below average. That very sentence makes no sense.

The lowest single-season positional average for first base was in 1948, 0.504, and first-base positional averages were generally below their long-run average from 1948 through 1959 with an average value of 0.521. This roughly corresponds to the career of Gil Hodges who, using single-season positional averages, had a career positional average of 0.516.

In contrast, the twenty years from 1992 through 2011 saw a positional average for first base of 0.534. The latter half of this time period corresponds to the career of Todd Helton who, using single-season positional averages, had a career positional average of 0.525, 0.009 higher than Gil Hodges's career positional average despite both players being almost exclusively first basemen who played their entire careers in non-DH leagues. Now, a difference of 0.009 doesn't sound like much, but Helton had more than 450 player decisions (pWins plus pLosses) in his career. Using one-year positional averages, Todd Helton and Gil Hodges had nearly identical career eWins over positional average (eWOPA), 27.7 for Helton to 27.6 for Hodges. Using the long-run positional average for first base, however, Helton's

eWOPA rises to 27.9 while Hodges's eWOPA declines to 24.6. What had been a 0.1-win lead in eWOPA for Helton using one-year positional averages becomes a 3.3-win lead using a common positional average.

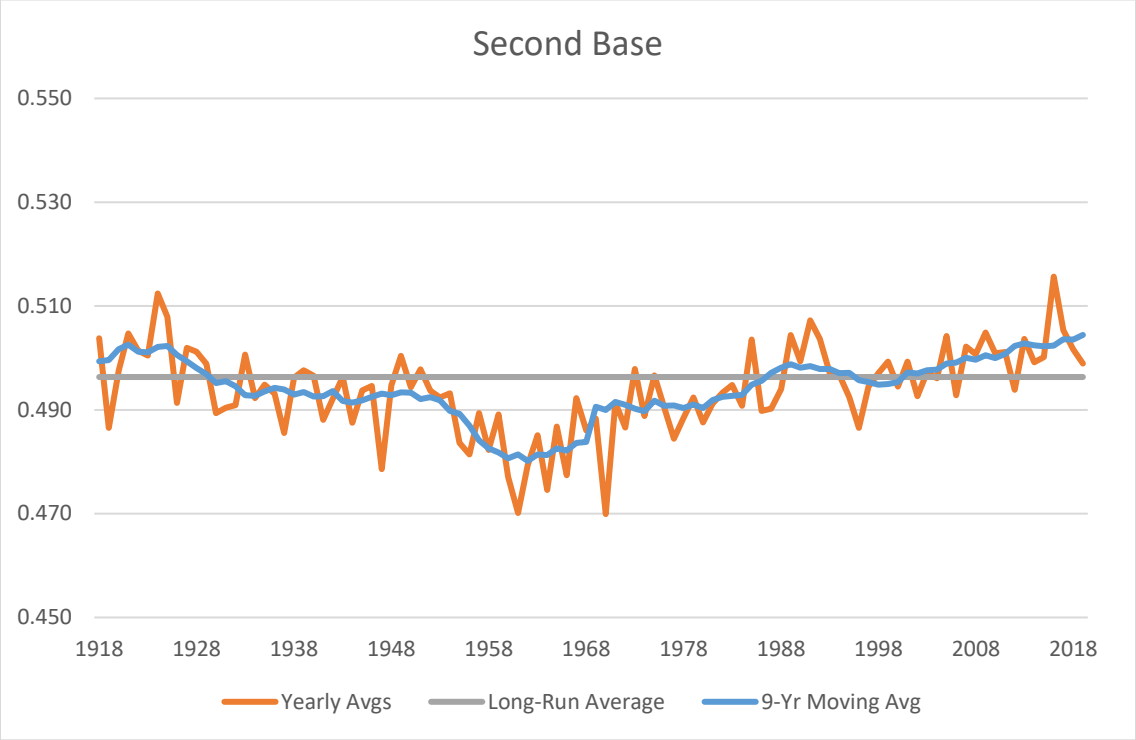
Is that difference in one-year positional averages unfair to Todd Helton? Not necessarily.

Gil Hodges had a reputation as an excellent defensive first baseman (he won the first three Gold Gloves awarded at ages 33, 34, and 35). And Player won-lost records recognize him as an excellent defensive first baseman with a career fielding winning percentage of 0.538 with 4.2 more fielding wins than fielding losses. Todd Helton was also an excellent defensive first baseman (he also won three Gold Gloves, at ages 27, 28, and 30) with a career fielding winning percentage of 0.529 with 4.3 more fielding wins than fielding losses.

Those seem directly comparable, but are they? Not necessarily. Gil Hodges' 0.538 winning percentage is measured against the first basemen of his time. But what if there were more good-fielding first basemen in Gil Hodges' time? With relatively few exceptions (e.g., Ted Kluszewski), the first basemen of Hodges' day were smaller, more athletic men than the first basemen of Todd Helton's day. These seem like two sides of the same coin. Doesn't the fact that first basemen didn't hit as well in the 1950s as they did in the 2000s suggest that poor-fielding sluggers were more tolerated in the latter time period (e.g., Jason Giambi, Jim Thome, Ryan Howard) than in the former time period?

Vic Power had a 1,626-game major-league career, most of it playing first base (1,307 games) with a lifetime batting line of .284/.315/.411 and a career-high in home runs of 16. Player won-lost records (a) recognize that Vic Power was an excellent defensive first baseman (career winning percentage of 0.545), but (b) do not think that was enough to make up for his weak bat, even with the lower positional averages of the 1950s (Power had -15.0 career pWOPA using one-year positional averages). Power's bat brings down the positional average against which Hodges's batting is compared. But Power's glove brings **up** the positional average against which Hodges's fielding is compared. But because of the nature of the way Player won-lost records are calculated, the former is done (at least somewhat) explicitly, because we can observe how first basemen hit relative to other positions; while the latter is implicit, because the average fielding winning percentage will always be 0.500 at every position in every season. Allowing the former, the offensive positional average, to vary across seasons helps us to capture the implicit differences in the latter.

- Second Base



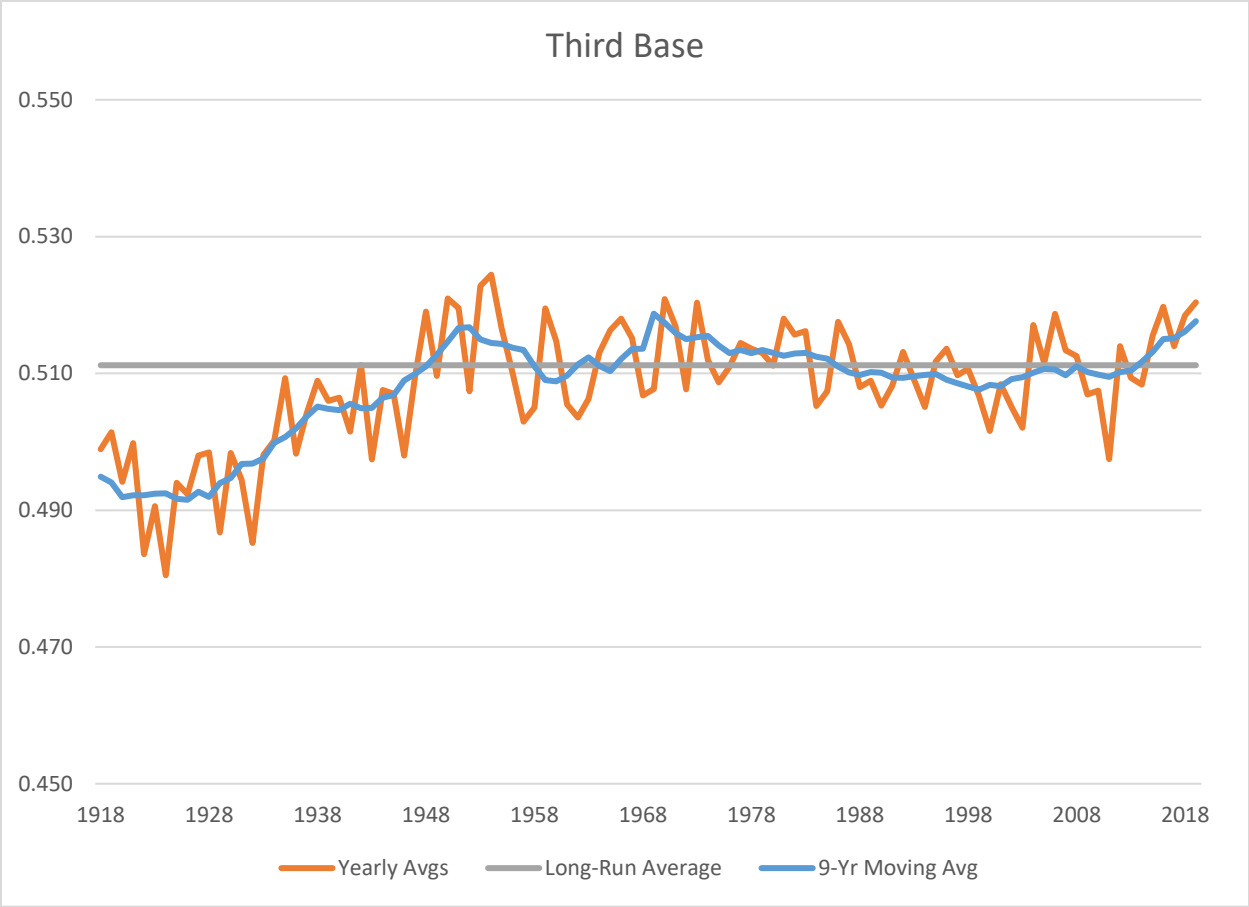
Positional averages for second base trended down fairly consistently over the first 40 years for which I have data. This is consistent with an observation by Bill James – which he incorporated into his calculation of Win Shares – that second base was a "hitter's position" into the 1920s and 1930s before switching places with third base on the defensive spectrum. In his Win Shares, James has second base establish its modern place in the defensive spectrum by 1946. The data here suggest that the transition of second base to a defense-first position may have lasted a decade or two longer than that. As with pitcher offense, this shift over time is something that I think one ought to incorporate into the positional averages used over time.

But interestingly, that only tells half the story for second base. After bottoming out between 1961 and 1970 (the two bottom-most points in the above graph), the positional average for second base increased from 0.470 in 1970 to 0.491 in 1971 and mostly stayed at this higher level into the late 1990s. And positional averages for second base have then trended upward since the late 1990s.

The positional average in 2016 was 0.516, which was the highest positional average for second base over the past 102 years, and the 2018 positional average, 0.5016, was virtually identical to the positional average in 1922 (0.5014).

The reason for this recent surge could be for the same reason hypothesized by Bill James for the decline from the 1920s into the 1940s: the relative importance of the double play. In 1920, there were 1,967 double plays in 22,263 major-league innings, or 8.84 double plays per 100 innings. In 1930, this number had grown to 11.35 double plays per inning. And by 1950, there were 12.52 double plays per 100 innings. But as strikeouts have increased, the number of balls in play have decreased and, with that, so have double plays. In 2000, the number of double plays per 100 innings had declined to 10.89 per 100 innings. This figure has been below 10.00 over the past two seasons, bottoming out at 9.23 double plays per 100 innings in 2019, a number not dramatically different from the 1920 number.

- Third Base

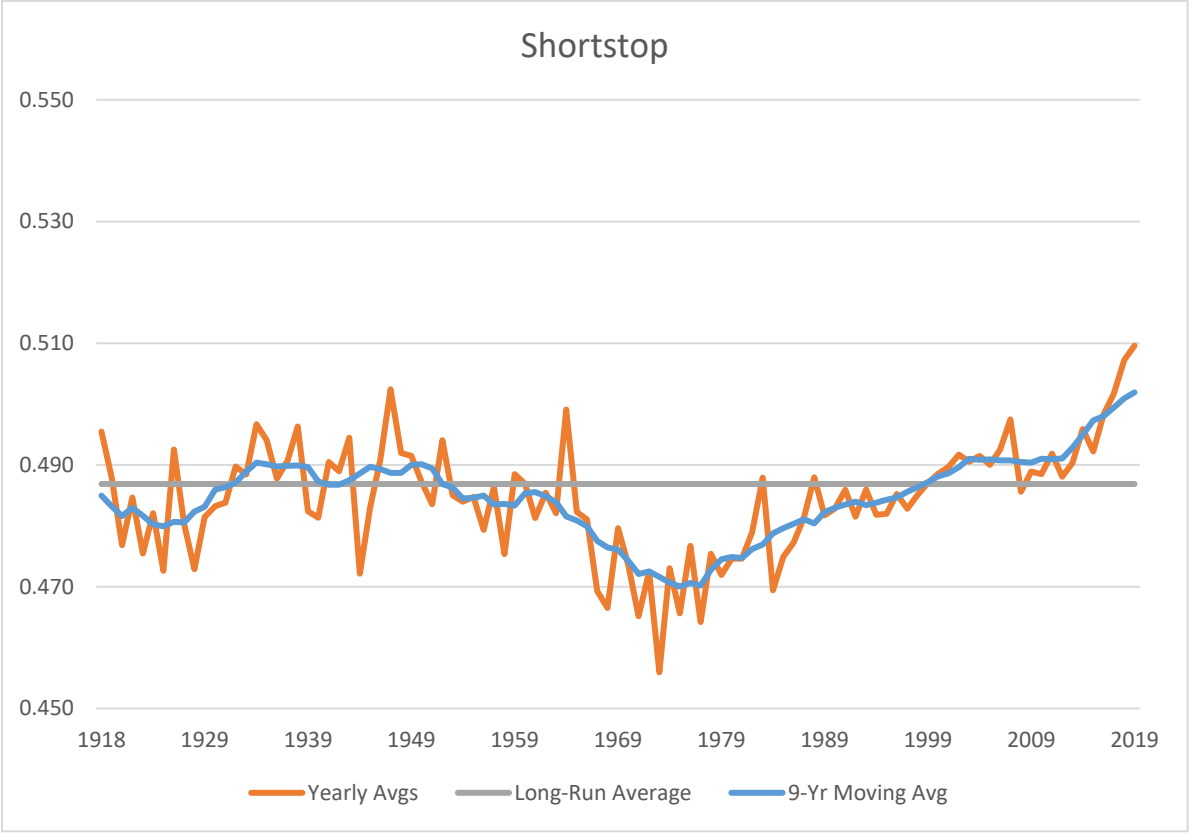


Positional averages at third base trended up from the mid-1920s (the low point on the graph is 1924) through 1948 or so. This is the mirror image of the results seen with second base which Bill James discussed in his *Win Shares* book. Since then, however, the results for third base have held fairly steady.

From 1947 through 2019, the positional average for third base has averaged 0.512. If you incorporate the DH-adjustment which I discussed earlier, this works out to about 0.503 in a DH league. In other words, the average third baseman has tended to be approximately a league-average hitter over the past 70 years or so.

Positional averages for third basemen have been above this long-term average since 2015, 0.518 average over the past five years and 0.520 in 2019, the highest positional average for third basemen since 1970.

- Shortstop

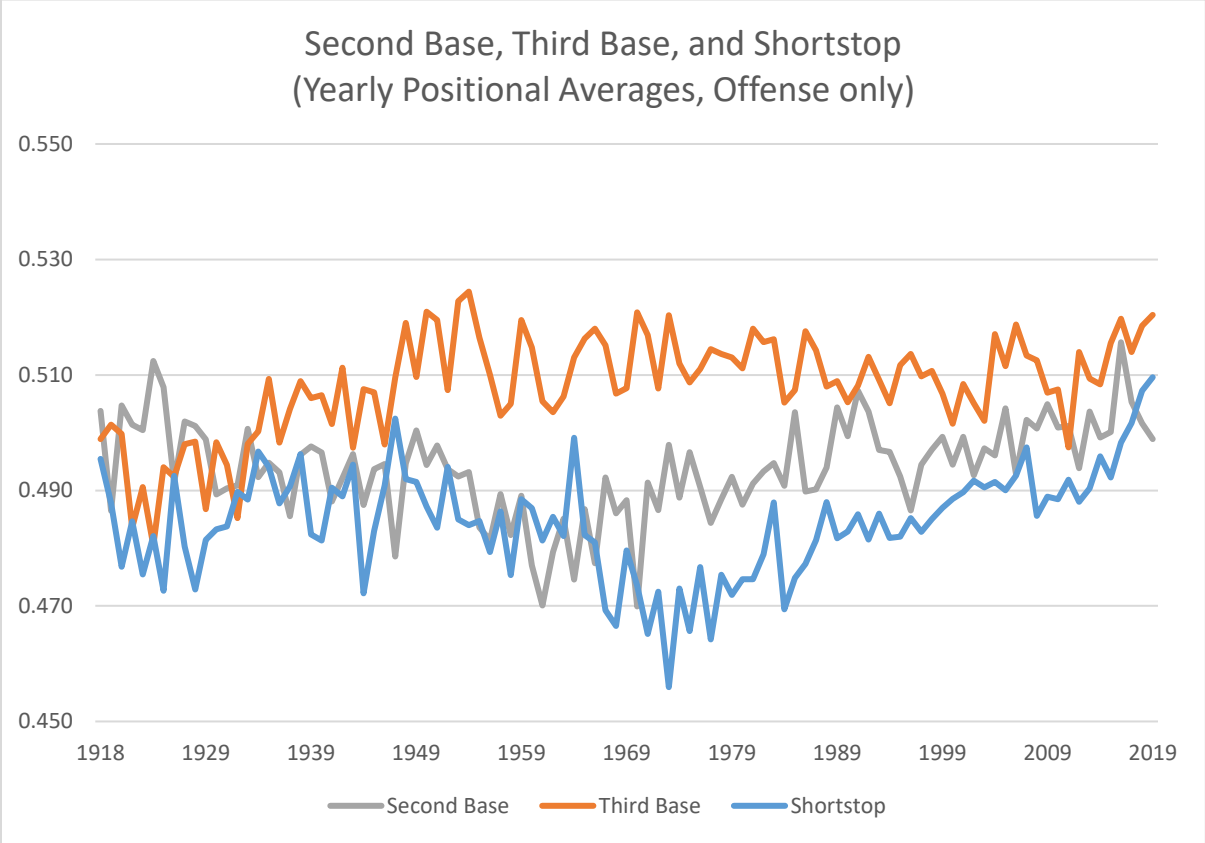


The numbers here are interesting. The results were fairly stable through 1965 (0.482) or 1966 (0.481) before dropping sharply – 0.469 in 1967 – and remaining low through 1984 (0.469). Results then bounced back up to the long-run average from 1985 through 1997 (as well as 1983) before trending upward since then. This trend has been especially sharp since 2015 (0.492). Since then, the positional average for shortstop has been 0.498, 0.502, 0.507, and 0.510, respectively. The positional averages in 2018 and 2019 were all-time highs for shortstops.

The results here do not really surprise me. I think it is fairly well known that the shortstop position was historically weak offensively through the 1970s, for example. And the more recent trend coincides with the emergence of several higher-offense shortstops, starting with the 1980s trio of Robin Yount, Cal Ripken, and Alan Trammell, continuing in the mid-to-late 1990s with Alex Rodriguez, Nomar Garciaparra, and Derek Jeter, and continuing through this century with Miguel Tejada, Jimmy Rollins, Troy Tulowitzki, Francisco Lindor, Carlos Correa, and others.

One hypothesis I have heard is that the increasing use of Astroturf in the late 1960s and through the 1970s increased the defensive requirements for shortstops – ground balls reach the infielders quicker on turf than on grass. As in other cases, I think it is more reasonable to say that the expectations for what constitutes an average shortstop have changed over time as opposed to asserting that modern shortstops are mostly above average while virtually all of the shortstops in the 1970s were below average.

- Infielders



The above graph, then, combines the results from the previous three graphs and looks at how the positional averages at second base, third base, and shortstop have shifted over time relative to one another. The gray line is second base, the orange line is third base, and the blue line is shortstop.

Second base and third base traded positions in the 1930s. Since 1934, the positional average for third base has been higher than second base and shortstop in 85 of 86 seasons (the exception is 2011 when second base was barely higher). Second base and shortstop were very similar in positional average from about 1934 through 1966. Over those 33 seasons, the positional average for second base was 0.489 vs. 0.487 for shortstop. The positional average for shortstop dropped off at this time and had stayed below second base every season since then until 2018 when shortstops amassed a positional average of 0.507 vs. 0.502 for second basemen (note that both numbers come in just below 0.500 when the DH-adjustment is factored in). This shift persisted into 2019 when second basemen had a positional average of 0.499 versus 0.510 for shortstops.

Consider, for example, two NL Central middle infielders: Kolten Wong of the St. Louis Cardinals and Javier Báez of the Chicago Cubs.

The next table shows how Wong and Báez compared against average at batting, baserunning, and fielding.

	eWins over Average			
	Batting	**Baserunning**	**Fielding**	**Total**
Javier Báez	0.8	0.0	0.9	1.8
Kolten Wong	0.6	0.6	0.5	1.6

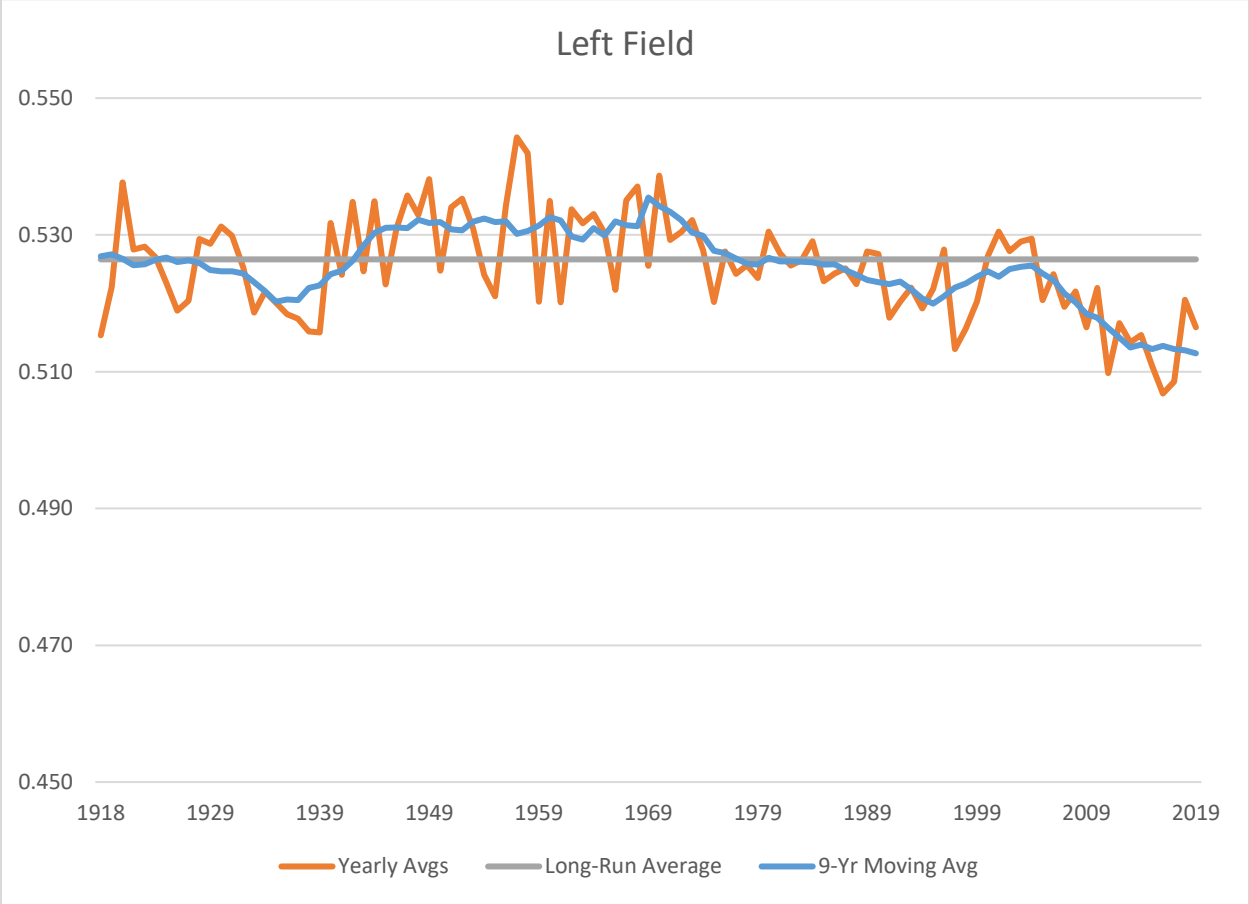
The batting and baserunning numbers are compared to non-pitcher average. Báez was a better hitter but Wong was a better baserunner (in 2019). The fielding numbers are compared to the position(s) which Báez (mostly SS) and Wong (2B) played. Add the numbers up, and Báez was 0.2 wins better than Wong before considering positional adjustments.

Historically, all other things being equal, one would prefer a 1.8-win shortstop over a 1.6-win second baseman. In fact, historically, all other things being equal, one would likely prefer a 1.8-win shortstop over a 1.8-win second baseman. And, indeed, using long-run positional averages, Javier Báez's 2019 season was worth 3.1 eWins over long-run positional average and Kolten Wong's 2019 season was worth 2.3 eWins over long-run positional average.

But in 2019, the positional average for second basemen was 0.499 versus 0.510 for shortstops. Using those positional averages, Javier Báez's 2019 season was worth 2.0 eWOPA versus 2.2 eWOPA for Kolten Wong.

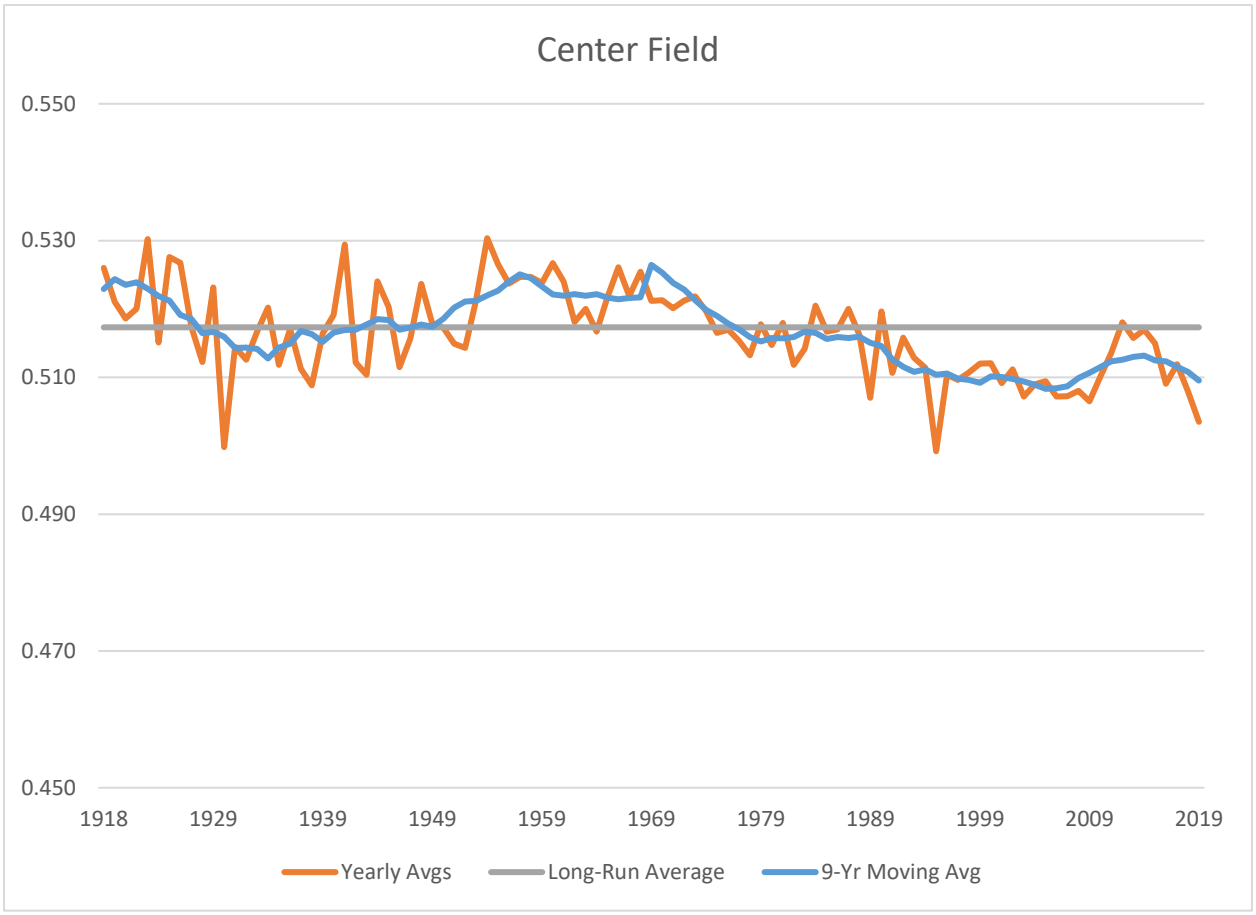
Is that a fair comparison of the relative value of Báez and Wong? Well, in 2019, for whatever reason, there were a lot of really good-hitting shortstops and relatively fewer good-hitting second basemen, so that, to some extent, it was easier to find a good-hitting shortstop than to find a good-hitting second baseman. Alex Bregman played 65 games at shortstop, Marcus Semien had a breakthrough season, plus Corey Seager, Francisco Lindor, Trevor Story, Báez, et al. At second base, D.J. LeMahieu was a revelation, but only played 75 games at second base; Max Muncy hit 35 home runs but only 16 as a second baseman; José Altuve missed 40 games, etc. All of which led to Wong standing out more relative to his positional peers than Báez.

- Left Field



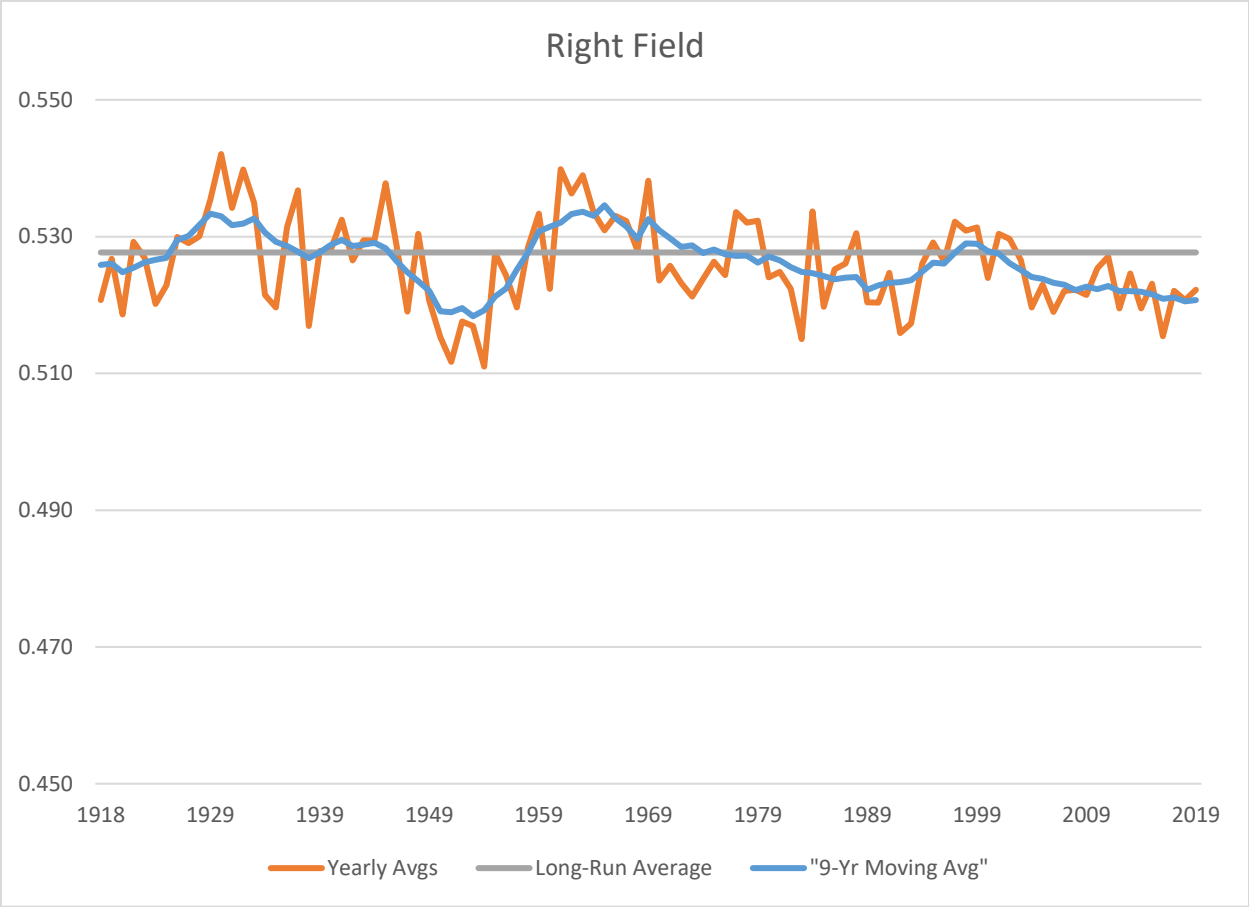
Left field was an especially strong position from about 1940 through 1973 with an average value of 0.531. Seasonal positional averages have been below the long-run average (0.527) every year since 2005 (the season after Barry Bonds won the last of his seven MVPs, all of which he won as a left fielder). The positional average for left field from 2005 – 2019 has averaged 0.516.

- Center Field



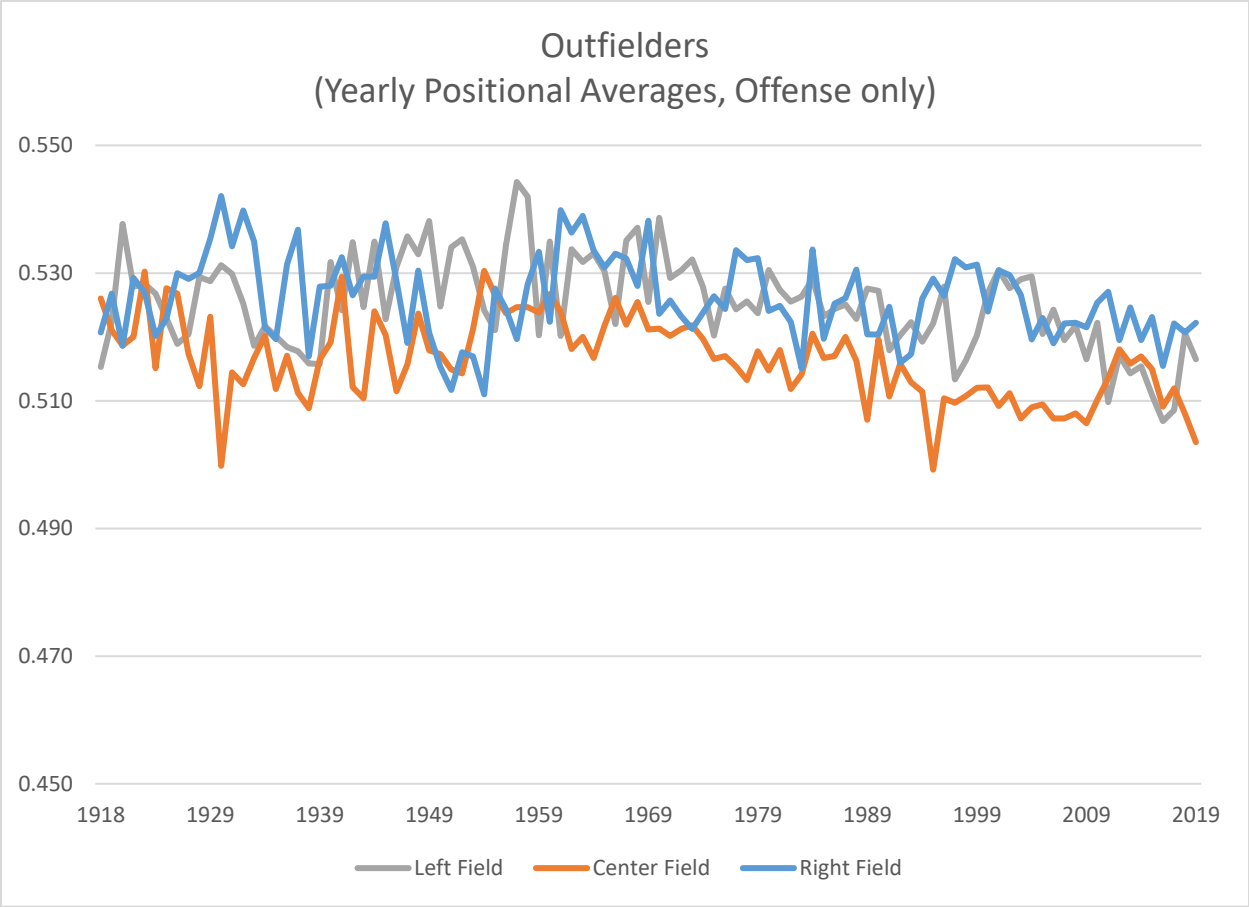
Positional averages for center field peaked in the 1950s – Willie Mays, Mickey Mantle, Duke Snider, Larry Doby, et al. Like left field, recent positional averages are below the long-run level. The positional average over the full 102 years is 0.517. This has fallen to 0.510 since 1994.

- Right Field



Eyeballing the graph, right field seems perhaps a bit more stable than left field. Like both left field and center field, recent positional averages have been below the long-run average. In the case of right field, the relevant time period seems to be 2004 – 2019 with a positional average of 0.522 (versus a 102-year average of 0.528).

- Outfielders

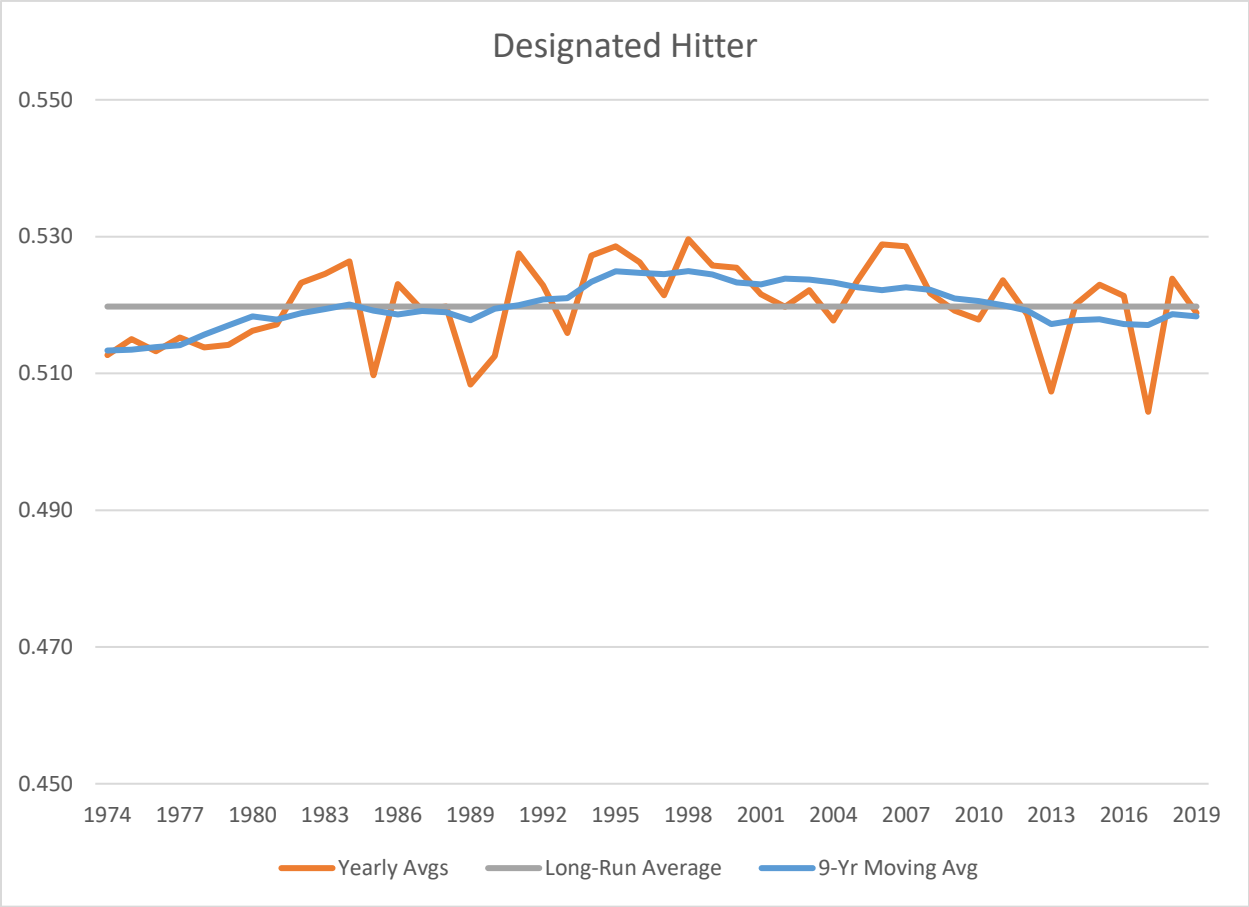


The above graph, then, combines the results from the previous three graphs and looks at how the positional averages at left, center, and right field have shifted over time relative to one another. The gray line is left field, the orange line is center field, and the blue line is right field.

Center field has tended to have a lower positional average than the corners although this has not always been true. In fact, center field positional average was greater than left-field positional average as recently as 2011 – 2017. Over these seven seasons, the center-field positional average averaged 0.514 and was greater than the left-field positional average (average of 0.512) for each of these seven seasons. The relationship between the three outfield positions appears to have corrected itself over the past two seasons.

Left field and right field have tended to closely track one another. The 102-year average for right field is 0.528; for left field, 0.526.

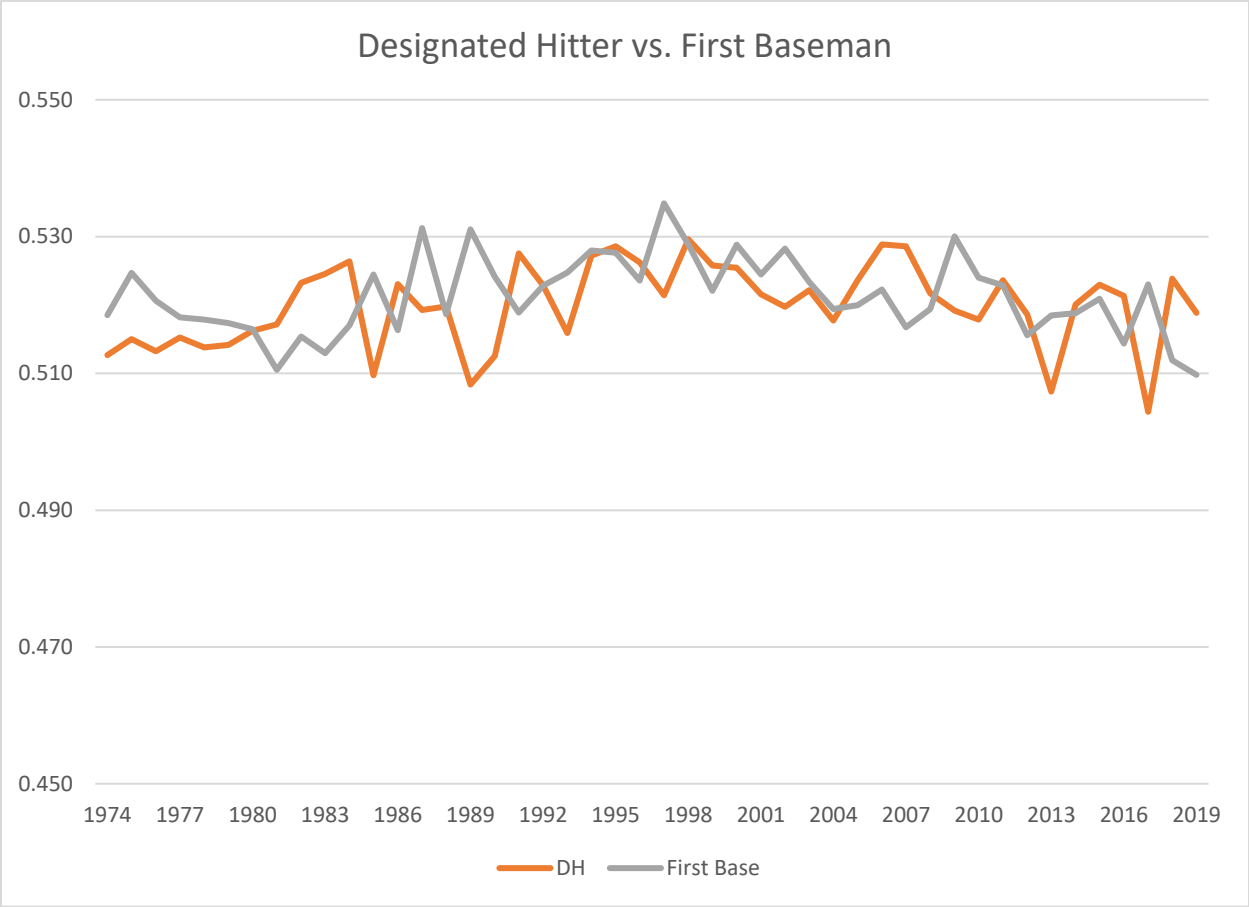
- Designated Hitter



The numbers here only go back to 1973, because the DH rule only goes back to 1973. And, obviously, the positional averages here apply to DH-leagues only. (As a note, I define the "league" in which a game is played by the league in which the home team plays. For inter-league games, this means that all games played with the DH rule are considered "American League" games and all games in which pitchers bat are considered "National League" games.)

There is a clear and rather strikingly smooth positive trend in the positional average for DH from 1973 into the early 1980s. The positional average for DH was 0.510 in 1973 and increased in 9 of the next 11 seasons, peaking at 0.526 in 1984. Since that time, the positional average for DH has held relatively stable. The long-run average here is 0.520. The average since 1982 is 0.521.

- DH vs. 1B

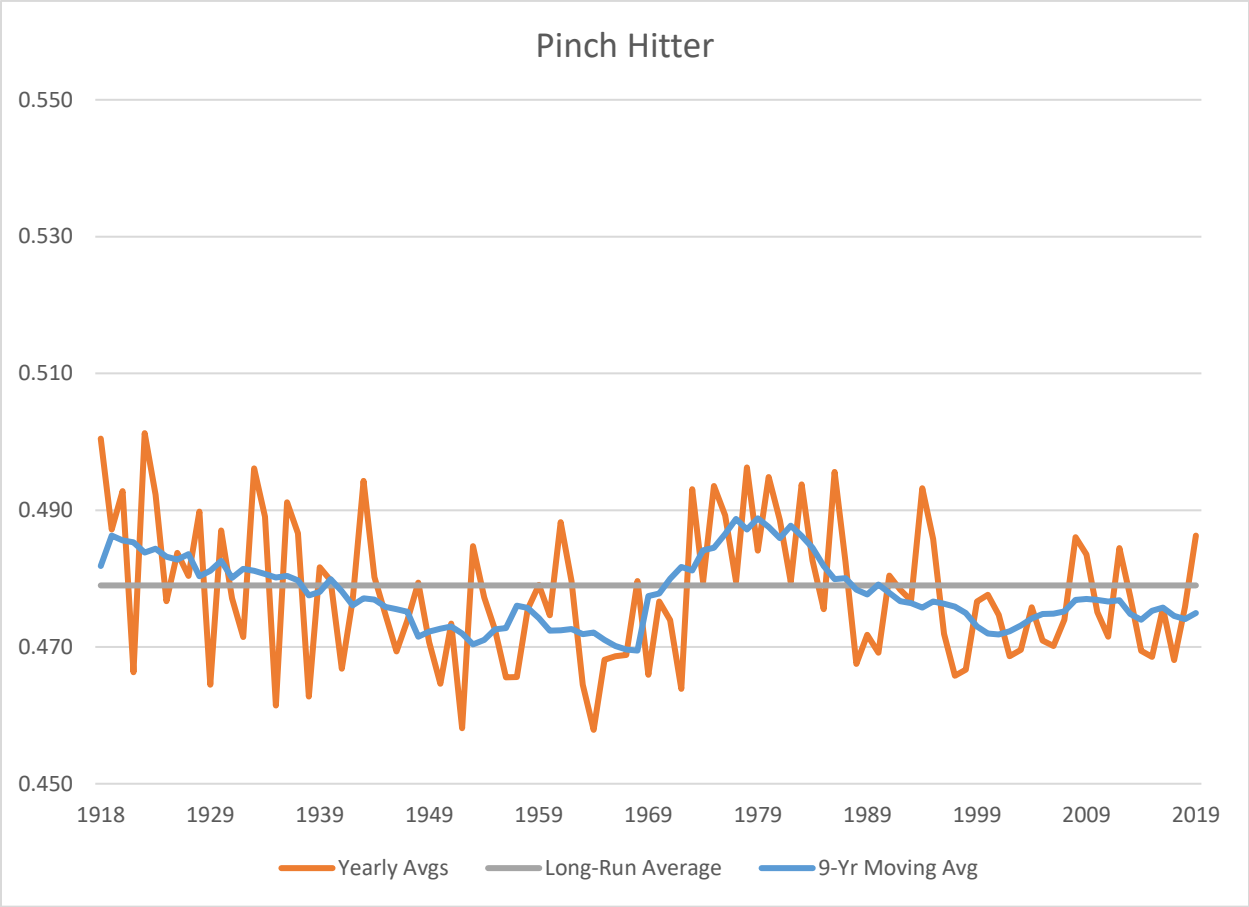


The above graph compares positional averages for designated hitters and first basemen. The first base numbers here include the DH-adjustment and so are about one percent (0.010) lower than the first base numbers shown earlier.

The ramp-up of DH averages that I noted earlier can be seen here and coincides with a mirror-image ramp-down of first base averages over the same time period.

By 1980, the two numbers are almost literally identical (0.5165 for first base, 0.5162 for DH) and remain essentially equal thereafter. From 1980 through 2019, the positional average for DH is 0.521 and for first basemen in DH-leagues, the positional average is 0.522.

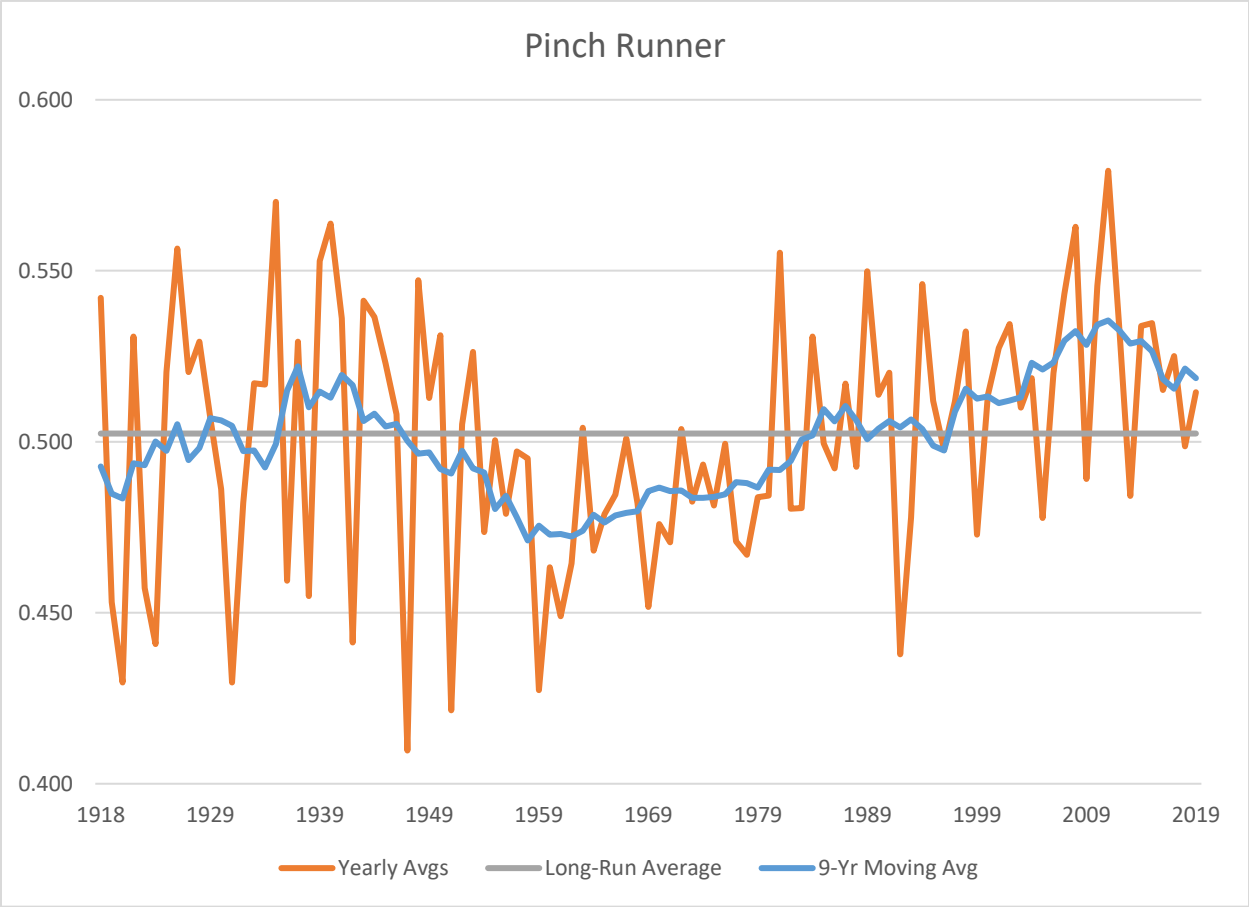
- Pinch Hitter



The results here are erratic. The blue line helps to show more subtle patterns that are largely overwhelmed by the year-to-year volatility of the orange line. Looking at the blue lines, there appears to have been a negative trend in pinch hitter average from 1918 (0.500) through 1972 (0.464) and again from 1978 (0.496) through 2002 or so (0.469), with the results being relatively constant since 2002. In between these two negative trends, the positional average for pinch hitters jumped from 0.464 in 1972 to 0.493 in 1973.

Not coincidentally, 1973 was the year in which the DH was introduced in the American League. In a DH league, the standard for pinch hitting is higher than in a non-DH league. In the latter, most pinch hitters bat for the pitcher and - not to minimize the difficulty of hitting major-league pitching - it requires relatively little for a major-league hitter to hit better than a pitcher. But in non-DH leagues, the only pinch hitters will be batting for other position players which may require a better set of hitters to make the pinch hitting worthwhile.

- Pinch Runner



I mentioned earlier that the range on the y-axis for all the positional average graphs from catcher through pinch hitter are the same, 0.450 to 0.550. The range here is twice as large, 0.400 to 0.600. The reason for this is, I think, obvious if you look at the graph. There were several years where the positional average for pinch runners was below 0.450. And there were several years where the positional average for pinch runners was above 0.550. Hence, it should go without saying that the results for pinch runners are more volatile than for any other position. In fact, they are vastly more volatile than for any other position.

One way to measure the volatility of a series is to calculate the standard deviation of the series. The largest standard deviation for any of the eight non-pitcher fielding positions is shortstop at 0.0093. As a rough explanation, this means that approximately two-thirds of shortstop positional averages are within 0.009 of the long-run average, or within a range of 0.478 to 0.496 (70 of 102 positional averages for shortstop fall within this range). The standard deviation for pinch hitters is somewhat greater than for shortstops, 0.0099. The standard deviation for pinch runners is 0.0360 – nearly four times greater than for shortstops!

It is hard to see within the volatility but there appears to be a positive trend in pinch-runner average since perhaps as far back as the 1940s (the minimum value here, 0.410, was in 1947). Pinch runner average has been above 0.500 in 11 of the last 14 seasons (since 2006) with an average value of 0.527.

- Pitchers

So, having worked through the offensive positions, that leaves us with pitching. I believe that there are three possible ways to calculate positional averages for pitchers.

(1) Pitching is pitching: the positional average is 0.500 for all pitchers for all seasons by construction.

(2) Starting pitchers and relief pitchers should have different positional averages, which should be calculated empirically each season. That is, in 2019, the overall winning percentage for starting pitchers (excluding their offense) was 0.499; the overall winning percentage for relief pitchers (again, only on defense) was 0.501. Those are your positional averages for 2019.

(3) Starting pitchers and relief pitchers should, indeed, have different positional averages, but option (2) assumes that the pool of starting pitchers and the pool of relief pitchers are equal. What we should do, instead, is focus on pitchers who pitched as both starters and relief. Doing this produces positional averages for 2019 of 0.484 for starting pitchers and 0.521 for relief pitchers.

In my first book, *Player Won-Lost Records in Baseball: Measuring Performance in Context* (McFarland, 2017), I chose option (3). Last summer, I had an e-mail conversation with a SABR member named Bob Sawyer who objected to my choice here. He raised some good points, which prompted me to re-think this choice. Initially, this re-thinking led me to choose option (1) instead. But now, in keeping with my general philosophy of allowing as much user freedom in how people can use my data as possible, I have decided to give people the option of any of these three choices or a weighted average of them.

While allowing people as much freedom to use my Player won-lost records to evaluate data as one sees fit, let me share some thoughts on pitching positional averages.

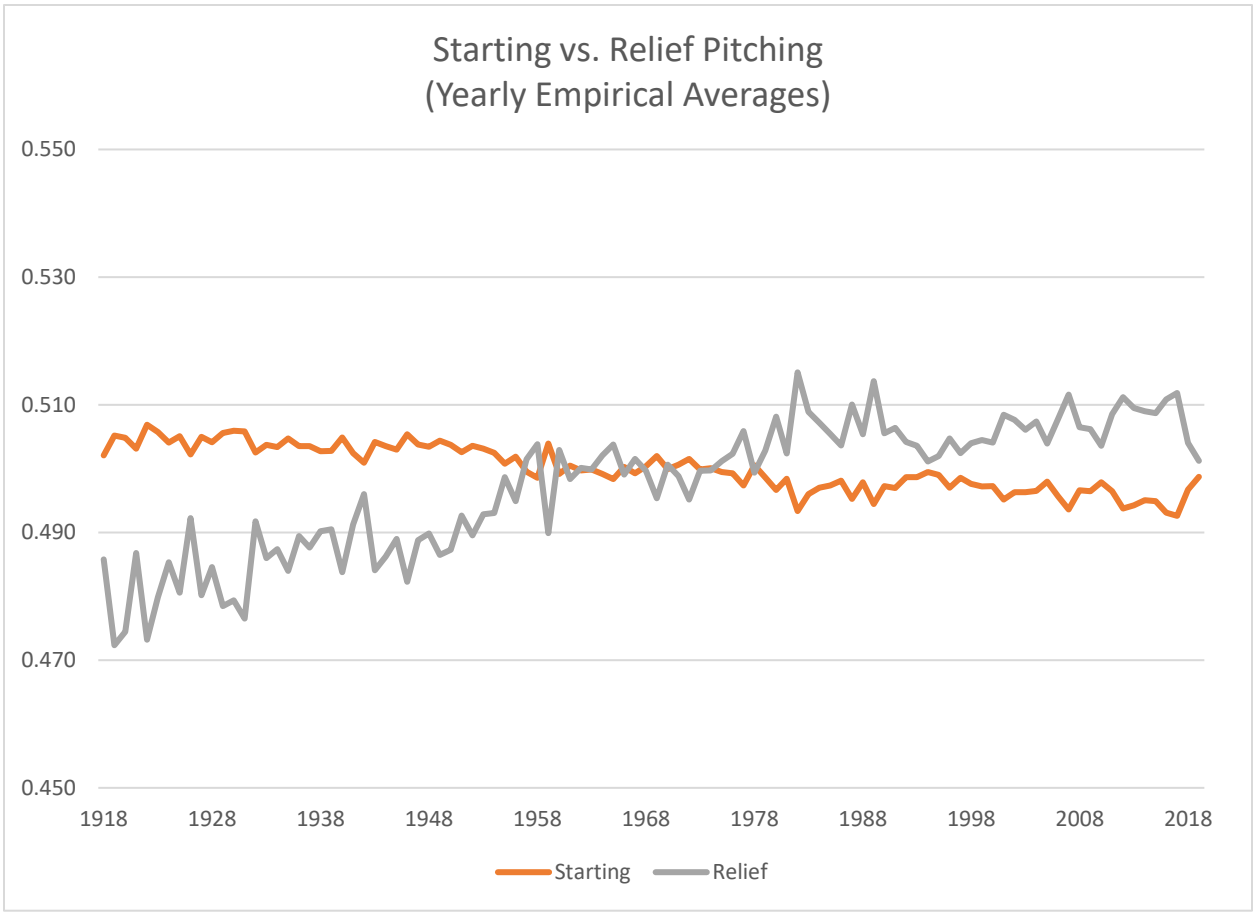
First, let's think about pWins. The underlying point of Player won-lost records is to explain team wins at the game level. From the team's perspective, what is the difference between starting pitchers and relief pitchers? Ultimately, nothing. For my 50th birthday (June 6, 2018), I attended a Cubs game against the Philadelphia Phillies at Wrigley Field. In that game, the Cubs led 3 – 0 with two outs and runners on first and second base in the top of the sixth inning. The Cubs replaced starting pitcher José Quintana with relief pitcher Steve Cishek. The next batter, Aaron Altherr, hit a three-run home run, tying the score at 3 – 3. Would anything have been any different if Quintana had stayed in the game and given up the home run to Altherr? No. But if the positional average for starting pitchers differs from the positional average for relief pitchers, doesn't that imply that the expectations are different for a starting pitcher than for a relief pitcher? Specifically, if the positional average for starting pitchers is lower than for relief pitchers (as is the case with either option (2) or (3) in 2018), that implies, at some level, that the home run would have been less costly if Quintana had given it up instead of Cishek. That doesn't make sense.

The 2018 season also introduced a new wrinkle here: the opener. Why is the positional average lower for starting pitchers? In the case of option (3), it is because pitchers perform better when they pitch in relief than when they pitch as starters. Why? Because relief pitchers don't have to pace themselves; they don't face the same batters more than once in a game; they likely have the platoon advantage more often. But now, with the "opener", the starting pitcher – i.e., the first pitcher of the game – gets these advantages and it's the second pitcher of the game who is then expected to work through the lineup multiple times and pitch multiple innings.

The obvious counter is that one could simply consider openers to be "relief" pitchers. But how do you distinguish between a starting pitcher who pitched one inning because that was the plan versus a starting pitcher who pitched one inning because he was pulled from the game early because he was ineffective or injured? I don't know that you can.

There is also, I think, another problem. As the use of relief pitchers has changed so, too, has the use of starting pitchers. Teams are making more and more effort to avoid having starting pitchers face batters a third time in the same game. This is likely making the job of a starting pitcher easier over time.

The next graph shows empirical averages for starting pitchers and relief pitchers – i.e., option (2) above.

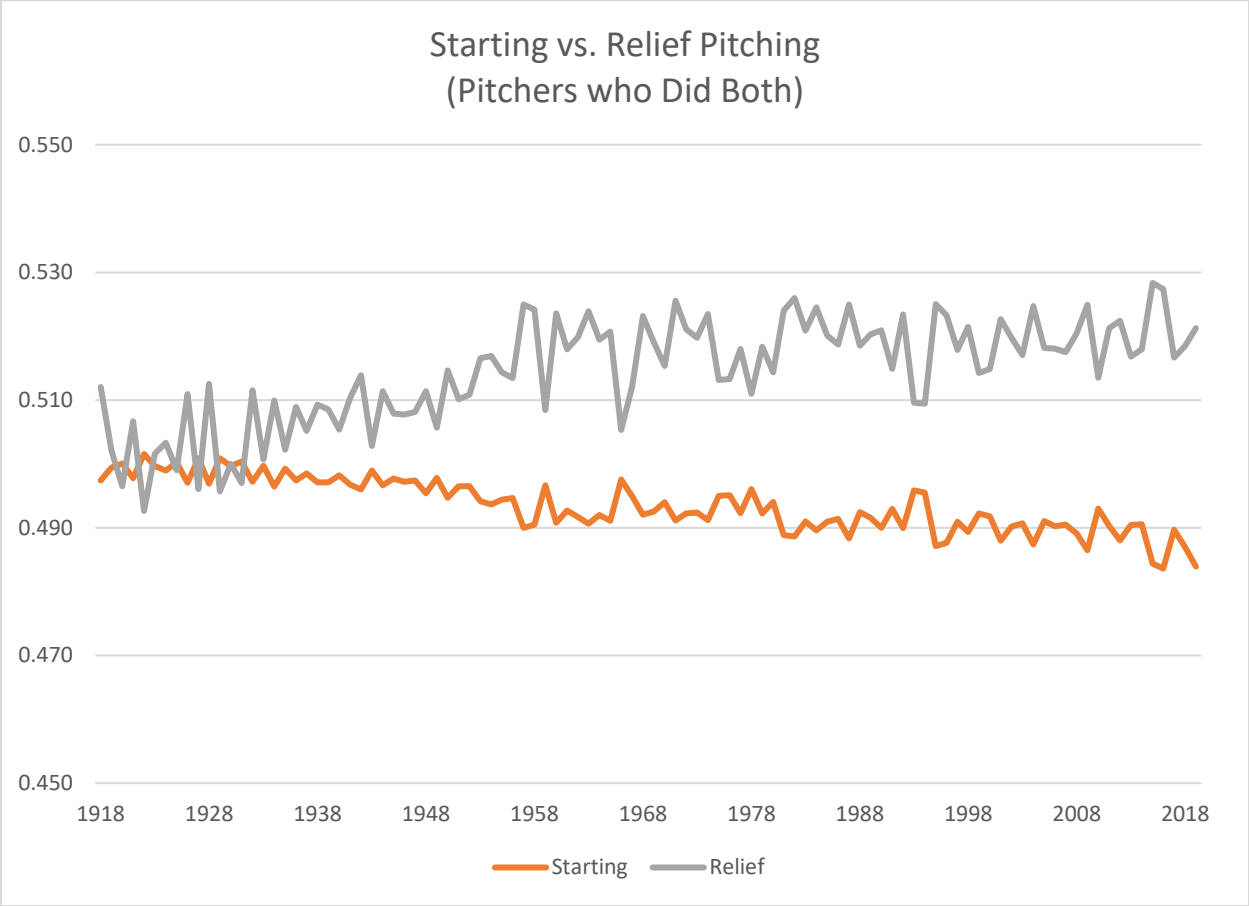


The average winning percentage of starting pitchers generally trended uniformly downward while the average winning percentage of relief pitchers generally trended upward from, say, 1931 (0.506, 0.477) through, say, 1977 (0.497, 0.506). Although still varying somewhat year-to-year, the average winning percentage for starting pitching from 1977 through 2017 was 0.497 for starting pitching and 0.507 for relief pitching. Over the past two seasons, then, the two numbers have both converged somewhat sharply toward 0.500 in 2019: 0.499 for starting pitchers and 0.501 for relief pitchers in 2019.

One possible explanation for this recent spike could be the effect of "openers". The concept of the opener was first used by the Tampa Rays in 2018. Openers, of course, are starting pitchers but have a role

that more closely resembles that of a relief pitcher. The use of the opener spread beyond the Tampa Rays in 2019, the effect of which can, perhaps, be seen in the above graph.

The next graph shows positional averages calculated by looking at pitchers who both started and relieved in the same season.



The numbers are interesting here. Two things, in particular, are striking about the first 15 years or so here. First, the relief pitcher numbers are ***extremely*** unstable, likely because relief pitching was much less common. Second, looking beneath the instability, there was essentially no difference in pitchers' performance starting versus relieving. From 1918 – 1935, the average starting pitcher average here was 0.499; for relief pitchers, 0.503. In the earliest days of relief pitching, the role of relief pitcher was very different than it is today. Relief pitchers were brought in when the starting pitcher failed (or was pinch-hit for) and the expectation was that the relief pitcher would likely finish the game. Sometimes, this translated into only pitching an inning. But sometimes, if the starting pitcher was knocked out in the first or second inning, this meant a relief pitcher entered a game with an expectation of pitching 6, 7, or 8 innings.

Since the mid-1930s, however, the spread between the starting and relief averages for pitchers who did both has consistently increased. In the 1940s, the gap was 0.011 (0.508 vs. 0.497). By the 2010s, the gap was up to 0.032 (0.520 vs. 0.488). There really isn't any evidence of the "opener" here. From 2010 – 2017, the average for starting pitching was 0.489; in 2018, it was 0.487; in 2019, 0.484. For relief pitchers, the numbers were 0.5205 from 2010 – 2017, 0.518 in 2018, and 0.521 in 2019.

- **Should Positional Averages Be Based on Players' Offensive or Defensive Performances?**

The positional averages presented and discussed so far here are based on players' offensive performances. This may seem wrong to some people. Specifically, many people will object that players do not bat as shortstops or left fielders, they bat as batters, i.e., players' offensive performance is not necessarily tied to a defensive position.

In fact, however, having decided that the way to compare players at different positions is by measuring players against different positional averages, I think that this is the correct way to calculate positional averages. This is because what we are trying to control for are the offensive expectations of players at different positions. And while it's true, in one sense, that a player does not bat as a "shortstop" or a "left fielder", he bats as a batter; there is another sense in which this is not true. From the perspective of the team, the lineup must be filled with players who will each field one of the 8 or 9 defensive positions. If, then, say, the Texas Rangers can find a player who can play shortstop adequately while hitting better than the players the other teams are playing at shortstop (e.g., Toby Harrah in the first five years of the Texas Rangers' existence, 1972 – 1976), this is a real advantage for the Rangers.

Having said that, there is a way to calculate positional adjustments based on fielding, and, in fact, I believe this is the basis for the positional adjustments used by Baseball-Reference in their calculation of WAR. This can be done by looking at the fielding performances of players who play multiple positions within the same season. For example, across all seasons for which I have estimated Player won-lost records, players who played both left field and center field within the same season had an average winning percentage of 0.488 in center field and 0.510 in left field. From this, one could reasonably conclude that center field is a more difficult position to play and one could also use this difference as a basis for adjusting these winning percentages to reflect a common base.

Comparisons of this type were done for all of the infield and outfield positions. Pitchers and catchers are not considered here. In the case of pitchers, this is because pitchers virtually never play a different position. This is also true, although to a lesser extent, of catchers. More problematic, however, in the case of catchers, is the fact that the skill set needed to be a good major-league catcher is not really the same skill set needed to be a good fielder at any other position (the same is true to a lesser extent, of course, when comparing infielders to outfielders, and, really, is true to at least some extent in every case here).

Average Winning Percentage at Position X

	1B	2B	3B	SS	LF	CF	RF
1B		0.528	0.522	0.541	0.505	0.505	0.504
2B	0.493		0.493	0.498	0.486	0.487	0.485
3B	0.481	0.496		0.500	0.481	0.478	0.479
SS	0.482	0.489	0.487		0.484	0.482	0.484
LF	0.487	0.503	0.497	0.509		0.510	0.500
CF	0.485	0.492	0.490	0.496	0.488		0.490
RF	0.480	0.492	0.490	0.495	0.493	0.507	

This table is read as follows. For a player who played both first base and second base, the average winning percentage at first base is shown in the top row, 0.528 - this is the average winning percentage of second basemen when they are playing first base. The average winning percentage of first basemen when they are playing second base is shown in the first column, 0.493. In all cases here, average winning percentages are calculated as weighted averages where the weights used are the harmonic mean between the player decisions at the two fielding positions being compared.

The average "normalized" winning percentage for a player at position Y when playing other positions can then be calculated as the weighted average of the numbers down the relevant column. The weights used to calculate these averages were the number of games upon which the comparison was based, which, as noted above, was the harmonic mean of the number of Player decisions accumulated at the two positions being compared.

After a few steps to re-center the winning percentages to average to 0.500 overall, produces the following average winning percentages by fielding position:

First Base	0.472
Second Base	0.501
Third Base	0.503
Shortstop	0.513
Left Field	0.488
Center Field	0.517
Right Field	0.499

The range of winning percentages here is quite narrow. The next table, then, compares these results with relative fielding winning percentages implied by average offensive performances by position.

Adjusting Fielding Winning Percentage by Fielding Position

Position	Implied by Relative Fielding	Implied by Offensive Performance
1B	0.472	0.398
2B	0.501	0.534
3B	0.503	0.501
SS	0.513	0.546
LF	0.488	0.471
CF	0.517	0.488
RF	0.499	0.468

So, which methodology produces better results?

For my work, I have chosen to calculate my positional averages based on relative offensive performances by position. I do this for several reasons which, I believe, make this a better choice for my purposes.

First, the mathematics here, attempting to normalize winning percentages across fielding positions, is fairly murky. In contrast, simply setting the positional average equal to the average winning percentage compiled at that position seems to me to be much cleaner and more elegant mathematically.

Second, I believe that limiting the analysis only to players who have played more than one position in the same season, as is done here, may lead to issues of selection bias. That is, we are not looking at the full population of all major-league players here, since most major-league players never played a game at shortstop, for example, or a random sample of major-league players. Instead, we are looking at a selected sample of major-league players, who were selected, in part, on the basis of exactly what we are

attempting to study: i.e., the players considered here are self-selected for their ability to play multiple positions similarly well. Truly bad players at offense-first positions - think Frank Thomas at first base, Manny Ramirez in left field - are so bad that nobody would ever consider trying to play Frank Thomas at third base or Manny Ramirez in center field. But, at the other end of the spectrum, great defensive players at defense-first positions are so great defensively that, for example, Ozzie Smith never played a single inning of major-league baseball at any defensive position besides shortstop; Willie Mays never played a corner outfield position until he was 34 years old. If a player is significantly better at one position than another, it almost certainly makes more sense for a team to simply play that player at his better position – or, if he is blocked at his best position, to trade him for a player who better fits the team's needs. Because of this, I think that looking only at the defensive performance of players who played multiple positions understates the true spread in positional averages – and, I suspect, dramatically so.

Finally, I believe that setting positional averages based on actual empirical winning percentages is more consistent with what I am attempting to measure with my Player won-lost records. Player won-lost records are a measure of player value. At the bottom-line theoretical level, every team must field a player at all nine positions. If one team has a second baseman that is one win above average and another team has a left fielder who is one win above average, then these two teams will win the same number of games (all other things being equal). Hence, in some sense, not only is it a reasonable assumption to view an average second baseman as equal in value to an average left fielder, it is, in fact, a necessary assumption.

All of that said, I understand that this is a subjective decision and I would hate for somebody to be hesitant in accepting my Player won-lost records because of a subjective decision that, at the end of the day, does not actually affect the key output of my work, Player wins and Player losses.

- **Calculating Wins over Positional Average**

Having a set of player wins, player losses, and a positional average, it might seem obvious how to calculate wins over positional average. Suppose a player had a Player won-lost record of 12.0 - 8.0 (a 0.600 winning percentage) and a positional average of 0.520. An average player would have been expected to have a 0.520 winning percentage in this player's 20 player decisions, which works out to a record of 10.4 - 9.6 (a 0.520 winning percentage). Take the difference between the two win totals, 12.0 minus 10.4, equals 1.6 WOPA. Easy peasy.

That is how I calculated WOPA values in my first two books and on my website for many years. But calculating wins over positional average in this way tended to produce numbers that were only half as large as wins above average numbers shown at Baseball-Reference.com (and elsewhere).

Why the difference? My initial instinct was that this was because of the difference between net wins (wins minus losses) and wins over 0.500. How many games over 0.500 is a team that finishes with a record of 92-70? They have 22 more wins than losses, but they would only be 11 games ahead of an 81-81 team in the standings. Later, I had second thoughts and thought that maybe the difference was because player wins are not linear - the players on a winning team have an initial record of something like 1.9 - 1.4, which I then normalize to 2 - 1.

I have had several conversations about my Player won-lost records with a SABR member who read my book and had a lot of interesting thoughts on it, Bob Sawyer. And he convinced me of two things. First, my initial instinct was right. In effect, my old WOPA would say a 92 - 70 team was 11 games over 0.500 (i.e., 11 games better than a team with a 0.500 record in the same number of games played). Baseball-Reference, on the other hand, was calculating net wins (actually net runs, which they then converted to wins), simple wins minus losses (a 92 - 70 team would have 22 net wins).

Second, he convinced me that the way that Baseball-Reference does it is the correct way to do it.

Broadly speaking, from an offensive standpoint, wins correspond to hits (and walks and hit-by-pitch, etc.) and losses correspond to outs, so that, broadly speaking, player decisions correspond to plate appearances. But the constant across baseball games is not plate appearances, or hits (or baserunners or runs, or anything positive offensively); the constant across baseball games is outs - outside of rain-shortened games and extra innings, the losing team will make 27 outs.

In fact, one of the interesting results I discovered in building and analyzing my Player won-lost records, which I discussed in Chapter 2, is that the net win value of an out is remarkably constant across seasons. The win value of a single or a home run will depend heavily on the run environment - an individual home run is less valuable in a higher run-scoring environment. But outs - on average, they're pretty much always worth about -0.023 or -0.024 net wins.

So, going back to our player who had a record of 12.0 - 8.0, let's assume that was all on offense. What would an average batter be expected to do given the same opportunities? We already said, he'd be expected to have a 0.520 winning percentage, but in how many decisions? Well, the number of outs is constant, so, the "same opportunities" isn't the same number of player decisions (20), it's the same number of losses - in this case, 8.0. A player with a 0.520 winning percentage and 8.0 losses would have a record of 8.7 - 8.0. So, our player with a record of 12.0 - 8.0 is not 1.6 wins over positional average; he's 3.3 wins over positional average (12.0 minus 8.7).

The same argument, then, holds in reverse for defensive players (pitching and fielding): WOPA is calculated holding player wins constant and adjusting losses based on positional average. Note that (a) this requires distinct positional averages for offense and defense - which is not a problem; all of the positional averages which have been discussed so far here are offense-only, and (b) if positional average

is exactly 0.500 (as it always is for fielding, regardless of position), then WOPA is simply equal to net wins, wins minus losses.

- **Moving from Positional Average to Replacement Level**

After calculating positional average, I calculate one additional number for players, a standard deviation. Standard deviation is a function of average, so standard deviation will vary based on one's choice of positional average. Specifically, standard deviations are calculated over the same time period as positional averages, so, for example, if one uses nine-year positional averages, the standard deviations will also be calculated over a moving nine-year average. Final standard deviations are then equal to the weighted average of standard deviations, using the same weights as are used in calculating positional averages.

I calculate separate standard deviations for pitchers and non-pitchers. For pitchers, if separate positional averages are calculated for starting pitchers and relief pitchers, I also calculate separate standard deviations for starters and relievers. If a single positional average of 0.500 is used for starting and relief pitchers, a single standard deviation would be used for both starting pitchers and relief pitchers.

For non-pitchers, I distinguish between fielding positions and non-fielding positions (DH, PH, PR). The latter have a higher standard deviation because there is no opportunity for such players to make up for poor hitting with strong fielding. In the process of introducing the changes discussed in this essay, I experimented with different standard deviations for catchers versus non-catchers. This tended to produce higher standard deviations for catchers than for the other fielding positions, which translated into somewhat higher wins over replacement level (WORL). I abandoned that and reverted to a single standard deviation for non-pitcher fielding positions, however, as I felt like the higher standard deviation for catchers was not really accomplishing what I had hoped it would (which was to get catchers' numbers closer to non-catchers in aggregate). Hence, for non-pitchers, standard deviations are calculated for two groups: fielding positions and non-fielding positions.

Having calculated WOPA, then, WORL (wins over replacement level) is calculated by taking WOPA and adding one standard deviation in winning percentage multiplied by total player decisions. This is the same way that I have always converted from WOPA to WORL and matches the way that Baseball-Reference, Fangraphs, and others convert from WAA to WAR.

Calculating WOPA and WORL in this way, then, my wins over replacement level (WORL) are essentially on the same scale as WAR, except for the fact that my replacement level differs from the common replacement level used by Baseball-Reference and Fangraphs. My WORL (and WOPA) will also disagree with Baseball-Reference and/or Fangraphs in some cases because of differences in how Player won-lost records evaluates some players. I have written about some of these differences in Chapter 8 of my first book, *Player Won-Lost Records in Baseball: Measuring Performance in Context* (McFarland, 2017), as well as in an article in the Fall 2016 issue of SABR's *Baseball Research Journal*.

- **Positional Average Options: Cases for and against Potential Uses**

I allow for four possible choices of positional averages, or a weighted average of any (or all) of these choices.

  - **0.500**

I allow for the possibility of simply measuring all players against a standard of 0.500. This is the one of the four options that I allow which I would argue is not correct and this is the one of the four options which I do not include in the positional averages which display by default at my website. Let me make my case against 0.500 by example.

Mark Grace had a fine major-league career. Over the course of his 16-year career, Grace played 2,245 games with 9,290 career plate appearances and 18,587 defensive innings (18,586 at first base, 1 as a pitcher). Grace won four Gold Gloves and had a career batting line of .303/.383/.442 with 173 career home runs. He was a very good major-league player.

Alan Trammell had a 20-year major-league career. He played 2,293 games with 9,376 plate appearances and 18,731 defensive innings – all very similar to Mark Grace. Trammell also matched Grace in career Gold Gloves, with four. Alan Trammell was similar, but somewhat inferior, to Mark Grace as a batter with a career batting line of .285/.352/.415 with 185 career home runs.

As measured by Player won-lost records, Alan Trammell had a career batting record of 174.8 – 165.0, **+9.8 net wins**. Mark Grace had a record of 185.3 – 161.3, **+24.0 net wins**. Trammell made up some of that gap in baserunning: Trammell was 18.2 – 16.4 (**+1.9 net wins**); Grace was 15.3 – 14.6 (**+0.7 net wins**). Both players were excellent fielders: Trammell was 85.6 – 79.3 (0.519 winning percentage, **+6.3 net wins**); Grace was 41.5 – 37.4 (0.526, **+4.2 net wins**). They were very similar across the board. Add it all up, and Alan Trammell's career eWins and eLosses were **280.5 – 258.9**; Grace had an eWin – eLoss record of **242.3 – 213.1**.

Using a positional average of 0.500, Mark Grace beats Alan Trammell in career eWins over "positional" average (eWOPA), **29.3 – 21.6**.

Does that make sense? All of the analysis thus far has ignored one thing. Mark Grace was a first baseman. He was usually one of the best hitters on his team, but most first basemen are among the best hitters on their team. And many – maybe not most, but many – first basemen regularly out-hit Mark Grace. Alan Trammell, on the other hand, was a shortstop. And except for a few well-known exceptions (Cal Ripken, Robin Yount), Alan Trammell was one of the best hitting shortstops in baseball.

Mark Grace was named to three All-Star teams in his career. He appeared on one Hall-of-Fame ballot, receiving 22 votes (4.1%) – which, I'll be honest, is 20 more votes than I would have guessed. Alan Trammell was named to six All-Star teams in his career. In his first year on the Hall-of-Fame ballot, he received 74 votes – which is perhaps 300 fewer than he should have received. It took far too long, but Alan Trammell is a Hall-of-Famer; Mark Grace is not.

And the entire difference between their careers was essentially the positional average against which their careers are measured. Using one-year positional averages, Trammell beats Grace in eWOPA **40.9 – 3.8**; using long-run positional averages, Trammell wins **36.3 – 6.0**. Mark Grace was a good major-league baseball player, above average at his best. Alan Trammell was a Hall-of-Famer. You need positional averages to fully appreciate the statistical difference between them.

Now, having said that, one could perhaps use 0.500 as a way to regress the positional averages toward 0.500. Personally, I do not think that it would be appropriate to regress the positional averages toward

0.500, if for no other reason than it would adversely affect comparisons between players in DH and non-DH leagues (this is part of what makes Grace look better than Trammell when measured against 0.500). Nevertheless, as I discussed above, if one were inclined to calculate positional averages by looking at how players' fielding varies across positions, the result would be a narrower band of positional averages than my calculations based on offensive performance. One could, for example, use a weighted average of 0.500 and one (or more) of the other positional average options as a way to regress the positional averages toward 0.500 as a way to mirror fielding-based positional averages.

- **One-Year Positional Averages**

The positional averages used in my first two books and, until very recently, on my website were one-year positional averages. I have implicitly made my argument for one-year positional averages throughout this essay. Let me try to summarize it in one paragraph here.

For pWins, where we are trying to explain team wins at the game (and season) level, I believe it is completely appropriate to use single-season positional averages and let the results fall where they may. If everybody has a first baseman who can hit the crap out of the ball, you had better find a first baseman who can hit if you want to compete. But, on the other hand, if everybody else has a shortstop who can't hit his weight, then finding a shortstop who can hit is going to be a big help in beating other teams. And, of course, at the team level, you can trade these things off: a team that is one win below average at first base but two wins above average at shortstop (net: +1 win) should do better than a team that is average at both positions.

Do I believe that this is a strong and valid argument? I do. Is it an objectively unassailable argument? It is not. Hence, my decision to let people choose their own positional averages (from among a finite set of choices).

- **Nine-Year Positional Averages**

The obvious advantage of nine-year positional averages over one-year positional averages is that they are smoother with far fewer and less dramatic year-to-year spikes. Nine-year positional averages will generally maintain smoother trends, peaks, and valleys within the data, however.

For example, positional averages for second base have been above their long-term average (0.496) in recent years. Starting in 2010, the one-year positional average for second base by season was 0.501, 0.501, 0.494, 0.504, 0.499, 0.500, 0.516, 0.505, 0.502, and 0.499, respectively. The 0.516, which was in 2016, sticks out like a sore thumb. Averaging the 2016 value with the four years on either side (well, actually just the three years since – the nine-year positional averages for 2016 will change with the release of 2020 data) reduces the positional average that year to 0.502. The nine-year positional averages for the years surrounding 2016 go up somewhat as they incorporate the unusual 2016 value. The nine-year positional averages for second base from 2010 – 2019 are 0.500, 0.501, 0.502, 0.503, 0.502, 0.502, 0.502, 0.504, 0.504, and 0.504. The fact that the one-year positional averages in 2017 and 2018 remained high, relative to historical norms shows up in the nine-year positional averages for not only these seasons (0.504, 0.504) but also for the seasons just prior to 2016. But the nine-year positional average for second base never changes year-to-year by more than 0.002 during this time period, as opposed to the +0.016 and -0.011 changes in the one-year averages in 2016 and 2017.

Why 9 Years?

When I first started working through this exercise of allowing people to choose their own positional averages, I planned to use five-year positional averages as my middle option. Having worked up some five-year positional averages, though, I felt like they didn't really smooth the numbers out as much as I had hoped they would. Basically, if you choose too short a time period, the results are not different enough from simple one-year positional averages; if you choose too long a time period, the results are not different enough from long-run positional averages. I feel like nine years hits a nice sweet spot between the two.

- **Long-Run Positional Averages**

At the opposite extreme of one-year positional averages is long-run positional averages. No fluke seasons, no occasional flips of the defensive spectrum. But also, no allowance for changes in relative positional averages.

One-year positional averages posit that any changes in relative performance across positions is "real" and should be accounted for in assessing player value.

Nine-year positional averages posit that any changes in relative performance across positions that persist across several seasons are "real" and should be accounted for in assessing player value.

Long-run positional averages posit that any changes in relative performance across positions between seasons or even between long groups of seasons are probably just noise and should be treated as such. Personally, I would be hesitant to rely exclusively on long-run positional averages. But I do think that they can be useful as part of a set of weighted-average positional averages as a way of hedging against what may be anomalous periods of several seasons.

For example, consider the shortstop position. The long-run positional average for shortstop is 0.486. But the one-year positional average for shortstop was below 0.486 every season from 1965 through 1982. In my online discussions of positional averages, I think this time period has probably generated the most controversy. Why did the shortstops of the late 1960s and 1970s hit so poorly? I have heard, in effect, two hypotheses, which are not necessarily mutually exclusive, but which clearly suggest different positional averages.

One hypothesis is that the introduction and rapid expansion of Astroturf in major-league infields dramatically increased the fielding requirements for shortstops. The ball reaches infielders much quicker on Astroturf with the result that speed became much more important. The increased need for speed on defense then led to an increase in the speed of players on offense, which further increased the difficulty of playing shortstop faced with a group of batters who were better able to beat out infield hits.

The second hypothesis essentially says that managers over-reacted to the perceived need for better fielders at shortstop and sacrificed too much offense at the position. Over-simplifying somewhat, the hypothesis is that major-league managers, as a group, were kind of stupid in the 1960s and 1970s.

Now, measured in terms of wins (as Player won-lost records are, by definition), major-league baseball is a zero-sum game. If everybody else is playing a lousy hitter at shortstop, it doesn't really hurt me if I play an equally lousy hitter at shortstop. Certainly, I'm missing out on an opportunity to exploit everyone else's mistake. And in real life, it's probably not entirely coincidental that the two teams who combined to win five straight World Series from 1972 through 1976 had two of the only three shortstops in the 1970s who were worth a damn offensively (exaggerating somewhat – but probably not too much – for effect).

But if we want to compare Bert Campaneris and Dave Concepcion (and Toby Harrah, who was a pretty good hitter but never played for a playoff team) to shortstops from other eras, should the 1970s guys essentially get bonus points for playing in an era when major-league managers didn't know what they were doing?

You can choose the weight you want to apply to long-run positional averages that gets you to your answer for that question.

- A Caveat

I want to point out one caveat here that may be obvious. The weights chosen for positional averages will be applied equally to all positions. It is not possible, for example, to set positional average for third base constant since 1947, use a straight nine-year positional average for shortstops, and a straight single-year positional average for pitcher offense.

The primary reason for this is simply that the math is too complicated. I will say, though, that I also worry that using different standards for different positions would likely create distortions such that the average player within some season(s) may be above or below average, not merely at one or more positions (which will be true using anything but straight one-year positional averages) but across all players, which seems non-sensical to me: it is plausible that a league's third basemen were above average in aggregate in some season; saying that all major-league players were above average in aggregate in a season seems to misunderstand what the word "average" means.

This Appendix (and book) concludes, then, with some examples of the potential impact of one's positional average choices.

- Selecting Positional Averages: Some Examples and the Potential Impact

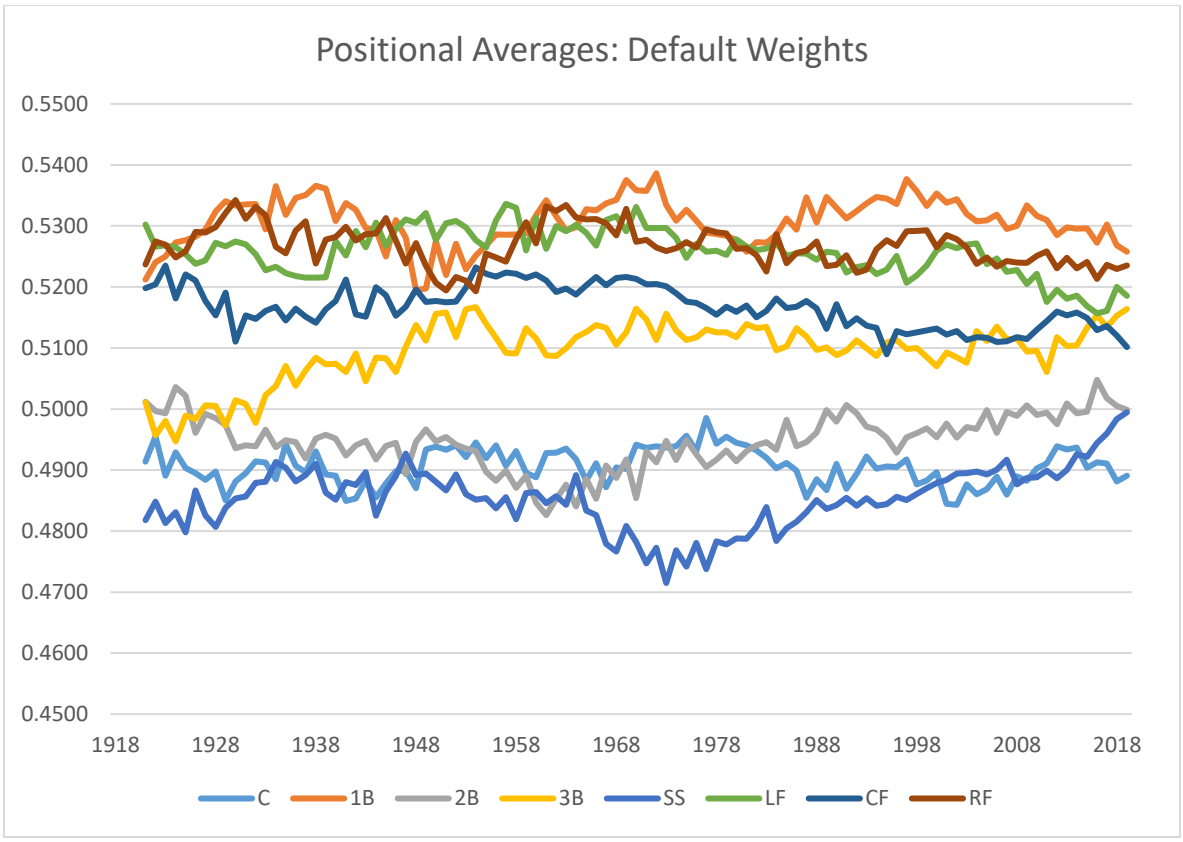
The default weights for positional averages on the website, if one does not choose one's own, are to give equal weight (one-third) to each of the one-year, long-run, and nine-year positional average. Working through some math, that works out to giving about 37.4% weight to the current year (approximately 3/8), 4.0% weight to the four years on either side of the current year, and 0.33% weight (one-third of one percent) to all other seasons for which I have calculated Player won-lost records.

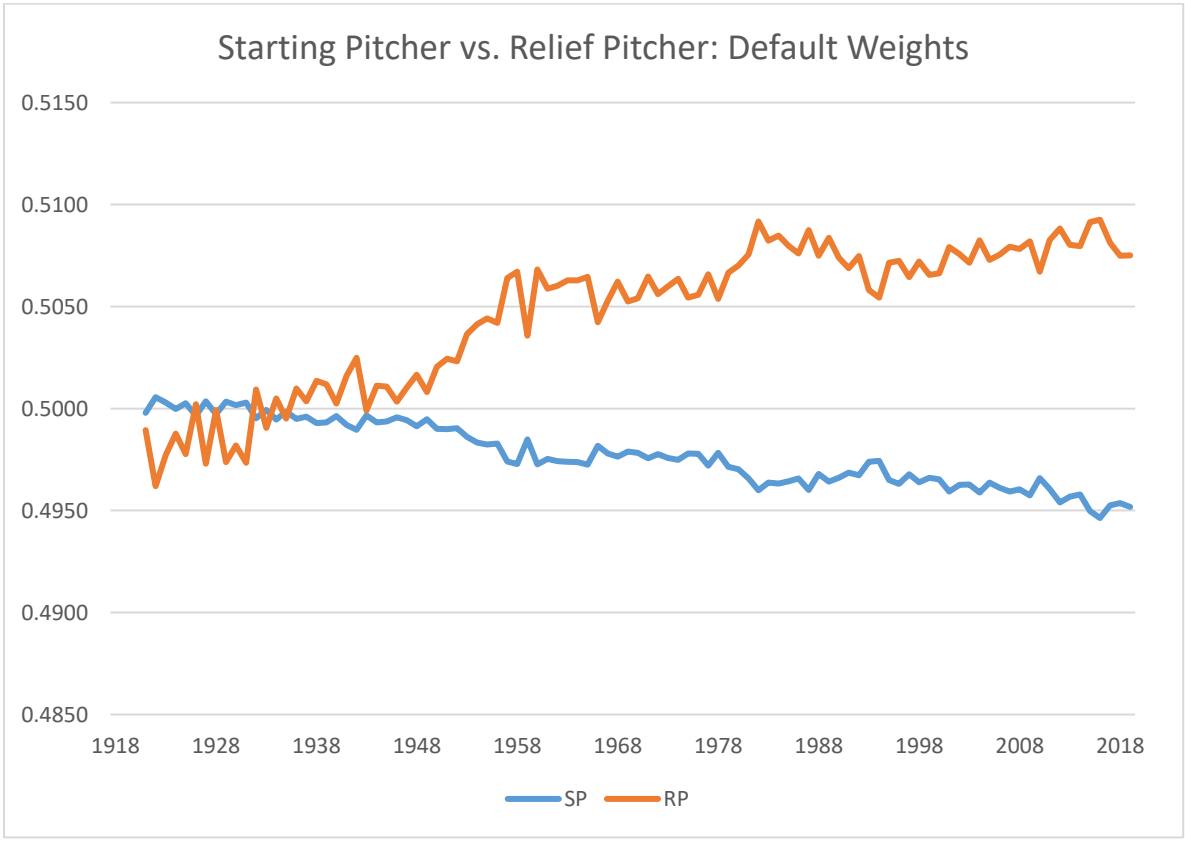
For pitchers, the default gives equal weight to the three options for treating starting and relief pitchers: 0.500, empirical, and differences based on pitchers who do both. The one-year, nine-year, and long-run versions of these three calculations are weighted the same as for non-pitchers.

The resulting positional averages are shown in the two graphs on the next page. For the fielding positions, the numbers shown here are offense only in non-DH leagues.

As you can see, there is still considerable variation, both in terms of long-run peaks and troughs as well as in terms of year-to-year variation. To reduce the latter of these, one could reduce the weight on one-year positional averages; to reduce the former, one could reduce the weight on nine-year positional averages. It's completely up to you.

I wanted to end this section, then, with a few player comparisons where one's choice of positional averages makes a difference. The comparisons made here are based on eWins, which are context neutral, so as to avoid potential issues with different team contexts in which these players played – i.e., I want to make sure that the issue being highlighted here is positional average and only positional average.


Positional Averages: Default Weights
0.5500
0.5400
0.5300
0.5200
0.5100
0.5000
0.4900
0.4800
0.4700
0.4600
0.4500
1918
1928
1938
1948
1958
1968
1978
1988
1998
2008
2018
C
1B
2B
3B
SS
LF
CF
RF


Starting Pitcher vs. Relief Pitcher: Default Weights
0.5150
0.5100
0.5050
0.5000
0.4950
0.4900
0.4850
1918
1928
1938
1948
1958
1968
1978
1988
1998
2008
2018
SP
RP

o Oakland A's Shortstops: Bert Campaneris vs. Miguel Tejada

Who was the greatest shortstop in the history of the Oakland A's? If Marcus Semien repeats his 2019 season a few more times, he may one day be the answer to this question. But for now, while it is possible that I am forgetting somebody, I think there are only two possible answers to this question (I think this is true whether one limits oneself to the Oakland A's or includes the Philadelphia and Kansas City A's in one's answer).

Dagoberto Campaneris debuted in 1964 with the Kansas City A's. He played the first 13 seasons of his 19-year career with the A's, moving from Kansas City to Oakland with the team in 1968, and was the starting shortstop for the A's five consecutive AL West division champions and three consecutive World Series champions from 1971 through 1975. Campaneris was named to six All-Star teams, starting three of them. Campaneris never won a Gold Glove, but was, I believe, well regarded defensively and scores as above-average defensively over his career by most, if not all, defensive metrics. Campaneris had a career batting line of .259/.311/.342 with 79 career home runs (two of which he hit in his major-league debut), which looks unimpressive, although he played most of his career in a pitchers' park during some of the lowest run-scoring environments in major-league history. Still, even controlling for that, Campaneris was a below-average hitter over the course of his career. He was, however, an excellent baserunner, leading the AL in stolen bases six times with 649 career stolen bases (14th all-time). Adding his baserunning to his batting, Campaneris was about average offensively for his career, a bit above average through his prime.

Put all of that together and Bert Campaneris's career eWin – eLoss record was **288.4 – 282.6**, a winning percentage of about **0.505**.

Miguel Tejada debuted for the A's 33 years after Campaneris did, in 1997. He was then the A's starting shortstop for six seasons before leaving for the Baltimore Orioles in free agency. Tejada never won (or even played in) a World Series, but the A's made the playoffs in each of Tejada's last four seasons with the team. Miguel Tejada was probably not as good a fielder as Campaneris and he was definitely not as good a baserunner (he had 85 career stolen bases). But Tejada was a much better hitter. His career batting line was .285/.336/.456 with 307 career home runs. Certainly, Tejada played in much higher run-scoring environments than Campaneris, but even controlling for that, Tejada was clearly the better hitter of the two. Tejada matched Campaneris in All-Star selections with six, although five of Tejada's six All-Star selections came after he left Oakland.

For his career, I have Miguel Tejada's career eWin – eLoss record at **279.1 – 274.2**, a winning percentage of about **0.504**.

Remarkably close. And you can see how one's choice between these two players is likely to come down to one's choice of positional average.

Before going any further, I should point out that Tejada spent a bit more time at positions other than shortstop. For his career, Tejada played 163 games at third base and 27 games as a DH. Overall, Tejada played shortstop in 90.9% of his career games played and about 91.5% of his career defensive innings. In contrast, Campaneris played shortstop in 91.9% of his career games and 93.9% of his career defensive innings. Not a huge difference, but an "advantage" to Campaneris.

Over the 102 seasons for which I have calculated Player won-lost records, the long-run positional average for shortstop (offense-only, non-DH leagues) has been 0.487.

But single-season positional averages for shortstop have ranged from a low of 0.456 to a high of 0.510. The former of these occurred in 1973, when Bert Campaneris played 151 games for the World Champion A's. Campaneris played 100 or more games at shortstop for 13 consecutive seasons, from 1965

through 1977 (he was a Texas Ranger in the last of these seasons). The highest one-year positional average in any of these 13 seasons was 0.482 (in 1965). In other words, the single-season positional average for shortstop was below the long-run average every season of Bert Campaneris's career as a regular shortstop. The average one-year positional average for shortstop over these 13 seasons was 0.471.

Miguel Tejada played 100 or more games at shortstop for 12 consecutive seasons, from 1998 through 2009. The lowest one-year positional average for shortstop for any of these 12 seasons was 0.485 (in 1998). The single-season positional average for shortstop was above the long-run average in every season in which Miguel Tejada was a regular shortstop. The average one-year positional average for shortstop over the 12 seasons in which Tejada was a regular shortstop was 0.490.

The next table compares Bert Campaneris's and Miguel Tejada's eWins over positional average (eWOPA) by season two ways: using single-season (1-Yr) or long-run (L-R) positional averages.

	Bert Campaneris				**Miguel Tejada**			
			eWOPA				**eWOPA**	
Age	**eWins**	**eLoss**	**1-Yr**	**L-R**	**eWins**	**eLoss**	**1-Yr**	**L-R**
21	0.0	0.0	0.0	0.0	2.6	3.4	-0.6	-0.6
22	8.4	8.5	-0.5	-0.2	11.6	13.0	-0.7	-0.8
23	19.3	19.4	0.2	0.1	18.3	19.0	0.4	0.4
24	20.2	18.5	2.9	2.7	20.3	19.2	2.0	2.1
25	18.7	19.5	0.8	-0.1	20.8	19.7	2.1	2.2
26	22.9	20.9	3.8	2.8	23.9	21.6	3.2	3.5
27	15.9	16.0	0.7	0.4	23.5	21.5	3.0	3.3
28	20.9	17.9	4.3	3.7	25.2	21.5	4.7	4.9
29	18.1	17.3	2.5	1.5	22.5	20.7	2.8	2.9
30	21.3	19.1	3.5	2.8	21.2	19.2	2.8	3.1
31	19.8	19.2	3.4	1.8	15.5	16.2	-0.4	0.1
32	18.7	17.3	3.0	2.5	18.4	20.6	-1.3	-1.4
33	17.0	17.1	1.8	0.9	22.9	23.3	0.4	0.5
34	18.8	19.2	1.1	0.6	18.8	20.2	-1.1	-1.2
35	19.3	20.0	1.6	0.5	9.3	10.1	-0.4	-0.5
36	8.7	10.6	-1.0	-1.3	0.0	0.0	0.0	0.0
37	7.4	8.0	0.1	-0.2	4.4	5.0	-0.6	-0.5
38	6.9	7.3	0.2	-0.0	0.0	0.0	0.0	0.0
39	2.3	2.3	-0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	4.0	4.5	-0.5	-0.5	0.0	0.0	0.0	0.0
------	------	------	------	------	------	------	------	------
Career Totals	288.4	282.6	27.9	18.1	279.1	274.2	16.4	17.9
(Zero out Negs)			30.0	20.4			22.0	23.5

Campaneris beats Tejada in career eWOPA either way.

But using one-year positional averages, Campaneris beats Tejada in career eWOPA **27.9 to 16.4** and has four single-season eWOPA values higher than Tejada's second-highest eWOPA value.

Using long-run positional averages, however, Campaneris beats Tejada in career eWins over positional average (eWOPA) by a mere two-tenths of a win, **18.1 – 17.9**. But now Tejada has four of the top five seasons in eWOPA, beats Campaneris by a full win in their respective best seasons, and, if you zero out negative seasonal values for eWOPA, Tejada beats Campaneris, **23.5 – 20.4**.

So, who was better, Campaneris or Tejada? You decide.

- **Gil Hodges vs. Rafael Palmeiro**

Gil Hodges is something of the patron saint of one-year positional averages. I already discussed him earlier comparing him to Todd Helton. But he makes such a good example that I decided to do a second comparison, this time with Rafael Palmeiro (who I also mentioned briefly earlier in this Appendix, too).

Gil Hodges came closer to making the Hall of Fame than any other non-Hall-of-Famer in major-league history. Hodges' Hall-of-Fame case essentially rests on two pillars: he was the manager of the 1969 Miracle Mets and he was the best first baseman of the 1950s. In many ways, this is similar to the Hall-of-Fame case of Jack Morris whose case rested on Game 7 of the 1991 World Series (and pitching for two other World Series winners) and being the best pitcher of the 1980s.

The big difference between the cases of Hodges and Morris, in my opinion, is that Hodges really has an argument for being the best first baseman of the 1950s. The problem, though, is that the second-best first baseman of the 1950s was either Stan Musial – who was clearly better than Gil Hodges (and almost everybody else in the major leagues) but only played 100 games at first base in 4 of the 10 seasons of the 1950s (and only played 103 and 110 in two of those seasons) – or Ted Kluszewski – who was a very good hitter but who received only 3.1% of the vote in his first year on a Hall-of-Fame ballot, which (a) would have gotten him kicked off the ballot under modern rules (for some reason, Kluszewski stayed on the ballot for 15 seasons, peaking at 14.4% of the vote), and (b) seems about right for his career: he was really good for four years, pretty good for a few more, but that was about it.

Gil Hodges played first base at a time when there were not a lot of other great (or, arguably, even good) hitting first basemen. The question is, how much credit should he get for that?

I calculate Gil Hodges to have had a career eWin – eLoss record of **220.0 – 179.5**, a winning percentage of about **0.551** which is quite good, although it's worth remembering that he played his entire career in non-DH leagues (which boosts the winning percentage of non-pitcher hitters).

Setting aside the steroid issue, Rafael Palmeiro has much better career statistics than Gil Hodges. Palmeiro was the fourth player in major-league history to accumulate at least 3,000 career hits and 500 home runs (3,020 and 569, respectively). Hodges had fewer than 2,000 hits and fewer than 400 home runs (1,921 and 370). And simply looking at eWins and eLosses, the difference is clear. Palmeiro had a career eWin – eLoss record of **311.5 – 264.7**, a winning percentage of about **0.541**. This is a bit lower than Hodges' primarily because Palmeiro played most of his career in a DH league. As I discussed somewhat earlier, offensive winning percentages for non-pitchers tend to be around 0.009 lower in DH leagues than in non-DH leagues. Adjusting for this, Hodges and Palmeiro had nearly identical DH-adjusted winning percentages over their careers.

But Rafael Palmeiro played in an era where it seemed like every team had a first baseman who could either hit 0.300 (e.g., John Olerud, Mark Grace, Sean Casey), hit 30 home runs (e.g., Mark McGwire, Fred McGriff, Carlos Delgado), or do both (e.g., Jeff Bagwell, Frank Thomas, Mo Vaughn).

Gil Hodges was named to the All-Star team eight times in his career and won three Gold Gloves. Rafael Palmeiro was named to the All-Star team only four times in his career as he was competing against a much deeper pool of good-hitting first basemen. Palmeiro also matched Hodges with three Gold Gloves, one of which he rather infamously won in a season in which he only played 28 games at first base (1999). Palmeiro almost certainly didn't deserve that Gold Glove but in a way, it highlights the issue here: in the late 1990s, everybody was focused on finding big hitters to play first base, leaving less room for some of the weaker hitting glove-first guys who played during Hodges' career (e.g., Vic Power, who I talked about earlier).

From 1948 – 1961, the seasons in which Gil Hodges was a major-league regular, the average single-season positional average (offense only, non-DH league) for first basemen was 0.523. From 1988 – 2005, 0.534. The long-run positional average for first basemen across all seasons for which I have calculated Player won-lost records is 0.532.

Using long-run positional averages, Rafael Palmeiro beats Gil Hodges in career eWOPA, **27.5 – 21.6**. Using one-year positional averages, Hodges beats Palmeiro, **27.6 – 24.9**.

- **Richie Ashburn**

My last player example is not a comparison but a look at a single player, Richie Ashburn. Richie Ashburn was the center fielder for the Philadelphia Phillies primarily through the 1950s. This means that Ashburn played center field during an era in which there were only 16 major-league teams, three of whose center fielders were Willie Mays, Mickey Mantle, and Duke Snider.

Needless to say, having 20% of the other center fielders in the league be Hall-of-Famers (actually, slightly more than one-quarter, as Larry Doby was also a center fielder during this decade) – two of them arguably among the top 10 players in major-league history – will affect the positional average for center field. The long-run positional average for center field (offense only, non-DH league) is 0.517. From 1948 – 1962, Richie Ashburn's career, the average single-season positional average for center field was 0.522. From 1954 – 1960, the average single-season positional average was 0.526.

I calculate Richie Ashburn's career eWin – eLoss record at **283.0 – 271.6**, a winning percentage of about **0.510**. Using one-year positional averages throughout his career, this translates into **−5.8** career eWOPA for Ashburn. Using long-run positional averages, Ashburn's record improves to **−2.0** eWOPA.

Why have I chosen this example? For this reason. Yes, Richie Ashburn looks worse when measured against single-season positional averages than against long-run positional averages. But that is not the primary reason why Richie Ashburn fares poorly in Player won-lost records. The fact is: Player won-lost records are somewhat unimpressed by Richie Ashburn. The Philadelphia Phillies of the 1950s allowed a very high number of doubles and triples and, as the team's center fielder, Ashburn bears some of the blame for that. From 1954 – 1959, the Phillies led the National League in doubles allowed four times, in triples allowed four times, and in combined doubles and triples allowed four times. In 1960, Ashburn moved to Chicago and the Cubs allowed 67 triples to lead the National League, 27 more than the Cubs had allowed in 1959. Player won-lost records are also somewhat unimpressed by Ashburn's offensive profile – specifically, his lack of power (29 career home runs, career slugging percentage of 0.382).

If Player won-lost records are missing something about Ashburn's career, it's hard to see that it translated into real wins. Ashburn had 283.0 eWins and 281.0 pWins in his career. The latter are tied to actual team wins. If Richie Ashburn was doing something that Player won-lost records are missing, it either didn't translate into actual wins for his teams or it is being mis-allocated to his teammates.

My point with this example is not to denigrate the career of Richie Ashburn – he was an above-average major-league center fielder in his 8-year prime (regardless of the choice of positional average) – but to emphasize that you can't use positional averages to get wherever you might want to go. There is an underlying objective reality embedded in the eWins and the pWins (and the eLosses and the pLosses) and not ***every*** case of a player who looks unexpectedly good or bad is the result of subjective analytical choices. There are, I believe, real truths to be revealed by Player won-lost records.

By letting people choose their own positional averages (within limits) as well as some other choices which will be discussed next, I hope to ensure that people will be more accepting of these "real truths" when they arise.

- **Player Comparisons: Beyond Positional Averages**

Many people (including me) like to distill player values down to a single number, so that they can create lists and rankings of players. The ability to express player values in a single number is a frequent feature of Hall-of-Fame debates, MVP discussions, and trade evaluations. It forms the core of putting together alternate Halls-of-Fame.

Despite my affinity for this type of list-making and ranking, I think the real value of my player won-lost records is the fact that they do not simply present a single number and leave it at that. Looking at each of the underlying numbers - wins and losses, contextual and context-neutral, comparing to positional averages and replacement levels, broken down by component - helps one to better put a player's value within the context in which it was accumulated. I also think that a weakness of some of the most prominent "single-number" statistics out there – WAR, Win Shares – is precisely that they distill everything into a single number, which forces one to accept the subjective adjustments that go into creating that number – some of which may not be immediately obvious or well explained, with the result, in the case of WAR, that you can go to (at least) three different websites and find three different statistics called "WAR" which give three (sometimes very) different answers.

Having said that, I think there can be a place for trying to condense everything down to one single number. And when condensing everything down to one number, I think there's a lot to be said for allowing as much flexibility as possible, letting people construct their one number however they want to. I have facilitated this in three locations on my website.

To calculate an "uber-statistic" for a single player, click on the "Value Decomposition" link on the player's basic player page. This page allows one to enter a set of "uber weights" which are combined into a table of player-specific uber-statistics by season in the final table of this page.

To compare two players in a user-specified "uber-statistic", one can click on the "Uber-Statistic" option of the Player Comps page (which can be accessed either through the home page of my website or via any player page). This brings up a special version of the Player Comps page which allows one to specify a set of uber-weights. The two players chosen are then compared by "uber-statistic" by season.

Finally, I have a page, accessible through the "Historical Leaders and Trailers" link on my home page, which creates a ranking of the top N players (where N is chosen by the user) over a user-specified time period based on a user-specified uber-stat.

There is an article on my website at https://baseball.tomthress.com/Articles/UberStats.php which looks at the factors which the user can choose to help construct this uber-statistic.

This concludes my 2019 Retrospective, the first of what I hope will be an annual tradition for many years to come. I hope you enjoyed it. Please feel free to visit my website frequently. Thanks for reading!

Glossary

Background Losses
Sum of context-dependent player losses (pLosses) for a team minus team losses; equal to one loss per team game played.

Background Wins
Sum of context-dependent player wins (pWins) for a team minus team wins; equal to one win per team game played.

Ballpark Factors
Factors which measure the relative likelihood and/or value of certain events, including run-scoring, across different ballparks within the same league and season. Ballpark factors are typically expressed as indices, relative to 100, reflecting differences in average runs scored in the ballpark relative to league average.

Baserunning Losses
Losses accumulated by a player as a baserunner.

Baserunning Wins
Wins accumulated by a player as a baserunner.

Batting Losses
Losses accumulated by a player as a batter.

Batting Wins
Wins accumulated by a player as a batter.

Component
Each of the nine steps in the process of calculating Player won-lost records.

Component 1
Basestealing (stolen bases, caught stealing, pickoffs, balks). Component 1 decisions are allocated to baserunners, pitchers, and catchers.

Component 2
Wild pitches and passed balls. Component 2 decisions are allocated to baserunners, pitchers, and catchers.

Component 3
Balls not in play: strikeouts, walks, hit-batsmen. Component 3 decisions are allocated to batters and pitchers.

Component 4
Batted balls, including home runs. Component 4 decisions are allocated to batters and pitchers.

Component 5
Hits vs. Outs on balls in play. Component 5 decisions are allocated to batters, pitchers, and fielders.

Component 6
Singles vs. Doubles vs. Triples on hits in play. Component 6 decisions are allocated to batters, pitchers, and fielders.

Component 7
Double Plays. Component 7 decisions are allocated to batters, baserunners, pitchers, and fielders.

Component 8
Baserunner Outs. Component 8 decisions are allocated to batters, baserunners, and fielders.

Component 9
Baserunner Advancement. Component 9 decisions are allocated to batters, baserunners, and fielders.

Context
Importance of a specific play in terms of determining team victories relative to a play of average importance.

Context-Dependent
Player decisions calculated such that player wins and losses are tied to team wins and losses. Context-dependent player wins and losses are referred to as pWins and pLosses in my work.

Context-Neutral
Player's expected record if his performance had happened in a typical context with average teammates. Context-neutral player wins and losses are referred to as eWins and eLosses in my work.

e
Prefix meaning "expected". Statistics with an "e" prefix have been adjusted to reflect expected performance in a typical context with average teammates.

eLosses
Player's expected losses if his performance had happened in a typical context with average teammates.

eWins
Player's expected wins if his performance had happened in a typical context with average teammates.

eWOPA
Wins over Positional Average (WOPA) calculated using eWins and eLosses.

eWORL
Wins over Replacement Level (WORL) calculated using eWins and eLosses.

Fielding Losses
Losses accumulated by a player as a fielder.

Fielding Wins
Wins accumulated by a player as a fielder.

fWAR
Wins above Replacement (WAR) as calculated by and presented at Fangraphs.com.

fWORL
Fielding Wins over Replacement Level.

Inter-Game
Within a single game. Relative importance of situations within the same game on that game's final outcome.

Inter-Game Context
Inter-game context measures the average importance of the situations in which the player participated within the context of the game.

Inter-Game Win Adjustment
Adjustment to player's winning percentage based on the timing of his performance within games.

Intra-Game
Across games. Relative importance of situations within one game as compared to the importance of comparable situations across all games.

Intra-Game Context
Intra-game context normalizes player decisions so that total player decisions are equal across all games.

Intra-Game Win Adjustment
Adjustment to player's winning percentage based on the timing of his performance relative to his team's performance.

Leverage
Relative importance of a situation. Conceptually, leverage is the same as inter-game context, as I use the term. Leverage was developed by Tom Tango.

Losses
Player decisions which contribute toward the player's team's probability of losing.

Net Wins
Total player wins minus total player losses associated with a particular play or plays.

p

Prefix standing for "Player". Statistics with a "p" prefix are adjusted such that player wins and losses tie to team wins and losses.

Pitcher Losses

The traditional baseball statistic assigned to a single pitcher on the losing team in a game.

Pitcher Wins

The traditional baseball statistic assigned to a single pitcher on the winning team in a game.

Pitching Losses

Losses accumulated by a player as a pitcher. This is not to be confused with the traditional baseball statistic, Pitcher Losses.

Pitching Wins

Wins accumulated by a player as a pitcher. This is not to be confused with the traditional baseball statistic, Pitcher Wins.

pLosses

Player losses calculated such that player losses are tied to team wins. For a team, the sum of player losses will be equal to team losses (plus 0.5 pLosses per tie game) plus team games played.

Positional Average

Average winning percentage expected for a player who played the same position(s) as a particular player.

Positional Replacement Level

Replacement Level performance of freely available players who could have been found to play the same position(s) as this player. Set equal to one standard deviation below Positional Average.

pWins

Player wins calculated such that player wins are tied to team wins. For a team, the sum of player wins will be equal to team wins (plus 0.5 pWins per tie game) plus team games played.

pWOPA

Wins over Positional Average (WOPA) calculated using pWins and pLosses.

pWORL

Wins over Replacement Level (WORL) calculated using pWins and pLosses.

rWAR

Wins above Replacement (WAR) as calculated by and presented at Baseball-Reference.com.

Replacement Level

Level of play which could be achieved by a player who is freely available to any major-league team. The term, which was first coined by Bill James, comes from the concept that a player who plays at replacement level or below, can be easily replaced by a cheap minor-leaguer or journeyman major-leaguer.

Run-Scoring Environment

Average runs scored per game for a particular set of games. Run-scoring environments can vary by ballpark (Coors v. Petco), because of differences in rules (DH v. pitchers hitting), or because of differences across seasons (1968 v. 2000). The run-scoring environment can also be affected by the level of play (little league v. major-league, etc.), although this latter factor is irrelevant to the work presented here, which deals exclusively with Major League Baseball.

Teammate Adjustments

Effect of a player's teammates on his won-lost record based on shared responsibilities for certain plays between batters and baserunners and/or between pitchers and fielders.

Win Adjustment

Difference between a player's context-dependent and context-neutral winning percentage based on the timing of his performance.

Wins

Player decisions which contribute toward a player's team's probability of winning.

WOPA

Wins over Positional Average.

WOPA_b

Batting wins relative to expected batting wins accumulated by non-pitchers.

WOPA_p

Pitching wins relative to expected average pitching wins.

WOPA_r

Baserunning wins relative to expected baserunning wins accumulated by non-pitchers.

WORL

Wins over Replacement Level.

Index